

### 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, 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.

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. The fee for a search in the Official Records, or an extract of an entry, is 2s. 6d., and for a certificate, including the cost of search, 7s. 6d. (except where the case appears in the records of the current quarter, when 5s. only is charged). 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.

The *Year-Book* for 1916-17 contains on pages 301 to 303 a statement of the law as to marriages and the registration of births and deaths in Victoria.

### MARRIAGES.

**Marriages.** Marriages in Victoria in 1921 numbered 13,676. This was the second highest number for one year in the history of the State, being 1,222 less than the greatest number previously

recorded—that for 1920. The figures for each of the last twenty years are as follows :—

#### MARRIAGES IN EACH YEAR, 1902 TO 1921.

| Year. | No. of Marriages. | Year. | No. of Marriages. |
|-------|-------------------|-------|-------------------|
| 1902  | 8,477             | 1912  | 11,738            |
| 1903  | 7,605             | 1913  | 11,324            |
| 1904  | 8,210             | 1914  | 11,830            |
| 1905  | 8,774             | 1915  | 12,832            |
| 1906  | 8,930             | 1916  | 11,341            |
| 1907  | 9,575             | 1917  | 9,506             |
| 1908  | 9,334             | 1918  | 9,156             |
| 1909  | 9,431             | 1919  | 11,706            |
| 1910  | 10,240            | 1920  | 14,898            |
| 1911  | 11,088            | 1921  | 13,676            |

The marriages in Australia for 1921 numbered 46,869 as against 51,552 in the previous year, 40,540 in 1919, 33,141 in 1918, and 33,666 in 1917. Of the total for 1921, 13,676 took place in Victoria, 18,506 in New South Wales, 5,963 in Queensland, 4,383 in South Australia, 2,656 in Western Australia, 1,668 in Tasmania, 15 in the Northern Territory, and 2 in the Federal Capital Territory.

The large number in 1921 was accounted for by marriages of discharged soldiers and the relatively small numbers of marriages in 1917 and 1918 were attributable to the absence from the State of a large number of marriageable men owing to the war. In all the States there was a substantial increase in marriages in 1921 as compared with the years prior to 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, as it affords a ready and approximate comparison between years not widely separated, the figures relating to Victoria are shown in the following table for the last ten years :—

#### MARRIAGE RATES, 1912 TO 1921.

| Year. | Marriage Rate. | Year. | Marriage Rate. |
|-------|----------------|-------|----------------|
| 1912  | 8·65           | 1917  | 6·76           |
| 1913  | 8·13           | 1918  | 6·46           |
| 1914  | 8·31           | 1919  | 7·98           |
| 1915  | 9·00           | 1920  | 9·90           |
| 1916  | 8·05           | 1921  | 8·90           |

The rates in the other States, New Zealand, and England and Wales in 1921 were as follows :—New South Wales, 8·79; Queensland, 7·80; South Australia, 8·81; Western Australia, 7·97; Tasmania, 7·82; New Zealand, 8·69; and England and Wales, 8·45.

The marriage rate for 1920 was the highest recorded in the history of the State. This was mainly due to the marriages of a large number of returned soldiers who had settled down to ordinary civilian life. The rate for 1921 was the highest since 1915, with the exception of that for 1920.

**Marriages to marriageable men and women.** The marriages in proportion to the population, to the unmarried men and widowers aged 21 to 55, and to the unmarried women and widows aged 18 to 50 in each census year, 1857 to 1911, are given in the following table:—

MARRIAGES PER 1,000 OF POPULATION AND OF SINGLE MEN AND WOMEN, 1857 TO 1911.

| Year of Census. | Exclusive of Chinese and Aborigines. |                                  |                        |            |   |  |  |
|-----------------|--------------------------------------|----------------------------------|------------------------|------------|---|--|--|
|                 | Enumerated Population.               | Number of Unmarried and Widowed. |                        | Marriages. | Proportion of Marriages per 1,000 of the— |  |  |
|                 |                                      | Men (aged 21 to 55).             | Women (aged 18 to 50). |            | Population.                               | Unmarried and Widowed Men (aged 21 to 55). | Unmarried and Widowed Women (aged 18 to 50). |
| 1857 ..         | 383,668                              | 88,456                           | 18,128                 | 4,465      | 11·64                                     | 50·48                                      | 246·30                                       |
| 1861 ..         | 513,896                              | 98,665                           | 24,009                 | 4,528      | 8·81                                      | 45·89                                      | 188·60                                       |
| 1871 ..         | 712,263                              | 77,078                           | 40,836                 | 4,715      | 6·62                                      | 61·17                                      | 115·46                                       |
| 1881 ..         | 849,438                              | 77,250                           | 75,098                 | 5,732      | 6·75                                      | 74·20                                      | 76·33  |
| 1891 ..         | 1,130,463                            | 133,576                          | 113,276                | 9,007      | 7·97                                      | 67·43                                      | 79·51  |
| 1901 ..         | 1,193,340                            | 123,691                          | 137,267                | 8,468      | 7·10                                      | 68·46                                      | 61·69  |
| 1911 ..         | 1,309,950                            | 132,642                          | 158,556                | 10,984     | 8·39                                      | 82·81                                      | 69·28  |

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

**Factors in marriage rates.** An examination of the figures for the seven census periods shows how the crude marriage rate is affected by the proportion of marriageable persons in the community. The maximum marriage rate (per 1,000 of population), which occurred in 1857, was co-incident with the highest proportion of marriageable persons, while the minimum rate—in 1871—was associated with the lowest proportion of such persons. A further examination of the figures shows that the ordinary marriage rate is more directly affected by the proportion of eligible men than by that of eligible women in the population. Thus, the percentage of single women aged 18 to 50 rose from 4·7 in 1857 to 12·1 in 1911, whilst that of single men aged 21 to 55 fell from 23 to 10 in the same period. After allowing for the more

uniform distribution of males and females of marriageable ages in the later years, the decrease in the percentage of marriageable men coincides fairly closely with the decline in the ordinary marriage rate. The female marriage rates show that the chances of a woman marrying were very much smaller at the census dates in 1901 and 1911 than at any earlier period, the proportion entering wedlock each year having fallen from about 1 in 4 in 1857, and nearly 1 in 5 in 1861, to 1 in 16 in 1901, and 1 in 15 in 1911.

**Marriages to marriageable persons in metropolis and country.** The extent to which the high crude marriage rates in Greater Melbourne, as compared with the country, are due to variations in age, sex, and conjugal condition may be ascertained by an examination of the results of the census of 1911. The first striking fact disclosed is that, whether the comparison be made for all ages or for marriageable ages only, there is a great preponderance of women over men in the metropolis, whilst in the remainder of the State the men are in excess. In Greater Melbourne there were 55,347 unmarried men aged 21 to 55, as compared with 84,238 unmarried women aged 18 to 50. In the rest of the State the eligible men and women at the corresponding ages numbered 79,925 and 74,318 respectively. It is thus seen that, while there was a surplus of 28,891 marriageable females in the metropolis, there was a deficiency of 5,607 in the country. To obtain definite information regarding the frequency of marriage, the residents of these areas who entered into wedlock were compared with the marriageable population of each sex, and the resulting proportions for the average of the period 1910-12 are shown in the following statement:—

**YEARLY MARRIAGES PER 1,000 MARRIAGEABLE PERSONS  
IN GREATER MELBOURNE AND THE REST OF THE  
STATE, 1910-12.**

| District.                    | Men. | Women. |
|------------------------------|------|--------|
| Melbourne and Suburbs ... .. | 95·8 | 66·6   |
| Rest of the State ... ..     | 66·4 | 68·9   |

The results show that during the period mentioned the chance of marrying within a year was slightly less for a woman residing in Greater Melbourne than for one living outside that area. On the other hand, the chance of a man marrying was 44 per cent. greater for a metropolitan than for a country resident.

The marriage rates amongst marriageable men and women at different periods of life have been computed for various age groups at each of four census periods, and are shown in the following table:—

**MARRIAGES PER 1,000 MARRIAGEABLE MEN AND WOMEN IN AGE GROUPS.**

| Age Group.     | Men.  |       |       |       | Women. |       |       |       |
|----------------|-------|-------|-------|-------|--------|-------|-------|-------|
|                | 1881. | 1891. | 1901. | 1911. | 1881.  | 1891. | 1901. | 1911. |
| 15-21 .. ..    | ..    | ..    | ..    | ..    | 24·6   | 23·6  | 18·8  | 23·3  |
| 21-25* .. ..   | 57·8  | 44·3  | 44·6  | 55·2  | 118·8  | 106·0 | 87·2  | 105·6 |
| 25-30 .. ..    | 114·2 | 85·9  | 90·5  | 118·6 | 105·7  | 100·5 | 84·7  | 112·1 |
| 30-35 .. ..    | 82·9  | 75·2  | 82·1  | 101·1 | 73·1   | 66·4  | 57·9  | 66·0  |
| 35-40 .. ..    | 56·4  | 51·1  | 62·6  | 72·9  | 53·8   | 46·4  | 37·2  | 43·0  |
| 40-45 .. ..    | 30·5  | 33·4  | 39·9  | 44·7  | 32·5   | 27·7  | 22·3  | 20·7  |
| 45-50 .. ..    | 21·8  | 25·9  | 29·8  | 34·9  | 22·1   | 17·8  | 14·3  | 5·5   |
| 50 and upwards | 10·5  | 9·1   | 9·1   | 12·1  | 4·9    | 4·2   | 2·4   | 2·6   |

\* In the case of men, 20-25.

Marriage rates of bachelors, widowers, spinsters, and widows.

The probabilities of bachelors and spinsters marrying and of widowers and widows re-marrying have been obtained by comparing their marriages at specified ages with the respective numbers in the community at these ages at the census of 1911. The marriages per 1,000 of the above-mentioned persons are given in the following table for the year mentioned:—

**MARRIAGES PER 1,000 BACHELORS, WIDOWERS, SPINSTERS, AND WIDOWS, 1911.**

| Age Group.     | Marriages to every 1,000— |           |            |         |
|----------------|---------------------------|-----------|------------|---------|
|                | Bachelors.                | Widowers. | Spinsters. | Widows. |
| 15-21 .. ..    | ..                        | ..        | 22·3       | 40·0    |
| 21-25* .. ..   | 55·3                      | 64·5      | 105·3      | 145·6   |
| 25-30 .. ..    | 118·8                     | 120·1     | 111·1      | 147·6   |
| 30-35 .. ..    | 99·6                      | 151·2     | 63·8       | 80·8    |
| 35-40 .. ..    | 69·0                      | 113·2     | 38·9       | 60·5    |
| 40-45 .. ..    | 38·1                      | 94·4      | 16·5       | 30·7    |
| 45-50 .. ..    | 27·0                      | 66·8      | 12·6       | 17·2    |
| 50 and upwards | 7·4                       | 16·8      | 3·7        | 2·3     |

\* In the case of men, 20-25.

The figures show that the probability of a widower marrying within a year is greater than that of a bachelor of similar age, and further, that the difference in favour of the former is much greater at ages over 30 than at earlier ages. Comparing the marriage rate for widows

with that for spinsters it is seen that at every age under 50 the chance of a widow marrying is considerably greater than that of a spinster of the same age. As 76 per cent. of the widowers and 78 per cent. of the widows are over 50 years—a period of life when the chance of re-marrying is small—and the great majority of the bachelors and spinsters are under that age—a period when the probability of marrying is much greater—it was to be expected that the rate for each of the two former sections would be much lower than that for each of the latter. In proportion to their respective numbers, the marriages of widowers were only slightly more than half as numerous as those of bachelors, and those of widows were only about one-fifth those of spinsters.

The ages of bridegrooms and brides who were married in 1921 are shown in combination for various groups in the table which follows :—

AGES OF BRIDEGROOMS AND BRIDES IN COMBINATION IN VICTORIA, 1921.

| 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   | ... | ...   | ...       | ...       | ...       | ...       | ...       | ...       | ...       | ...                | ...       | ...       | ...       | 1            |
| 17                   | ...             | ... | 2   | ... | ... | 3   | ... | ...   | ...       | 2         | ...       | ...       | ...       | ...       | ...       | ...                | ...       | ...       | ...       | 11           |
| 18                   | ...             | 1   | 4   | 7   | 5   | 15  | 11  | 3     | ...       | 6         | ...       | ...       | ...       | ...       | ...       | ...                | ...       | ...       | ...       | 52           |
| 19                   | ...             | ... | 1   | 5   | 14  | 26  | 26  | 9     | ...       | 23        | 3         | ...       | ...       | ...       | ...       | ...                | ...       | ...       | ...       | 107          |
| 20                   | ...             | ... | 2   | 4   | 18  | 36  | 36  | 48    | ...       | 63        | 8         | ...       | ...       | ...       | ...       | ...                | ...       | ...       | ...       | 216          |
| 21 to 25             | ...             | 1   | 22  | 68  | 190 | 292 | 321 | 1,862 | 478       | 49        | 7         | ...       | ...       | ...       | ...       | ...                | ...       | ...       | ...       | 3,297        |
| 25 to 30             | 1               | ... | 112 | 42  | 106 | 166 | 249 | 1,984 | 2,073     | 373       | 55        | 12        | 2         | ...       | ...       | ...                | ...       | ...       | ...       | 5,076        |
| 30 to 35             | ...             | ... | 1   | 2   | 7   | 22  | 28  | 62    | 608       | 963       | 132       | 23        | 4         | ...       | ...       | ...                | ...       | ...       | ...       | 2,428        |
| 35 to 40             | ...             | ... | 1   | ... | 4   | 7   | 13  | 12    | 179       | 379       | 317       | 168       | 41        | 16        | 3         | ...                | ...       | ...       | ...       | 1,140        |
| 40 to 45             | ...             | ... | ... | 1   | ... | ... | 3   | 2     | 48        | 106       | 136       | 125       | 78        | 18        | 4         | ...                | ...       | ...       | ...       | 521          |
| 45 to 50             | ...             | ... | ... | ... | ... | 2   | 1   | ...   | 15        | 48        | 59        | 73        | 61        | 41        | 16        | 3                  | 1         | 1         | ...       | 321          |
| 50 to 55             | ...             | ... | ... | ... | ... | ... | 1   | ...   | 5         | 18        | 24        | 41        | 41        | 37        | 20        | 4                  | 5         | ...       | ...       | 196          |
| 55 to 60             | ...             | ... | ... | ... | ... | ... | ... | ...   | 4         | 8         | 11        | 22        | 22        | 38        | 25        | 13                 | 3         | 1         | 1         | 148          |
| 60 to 65             | ...             | ... | ... | ... | ... | ... | ... | ...   | ...       | 5         | ...       | 4         | 8         | 14        | 11        | 15                 | 11        | 10        | 3         | 81           |
| 65 to 70             | ...             | ... | ... | ... | ... | ... | ... | ...   | ...       | 1         | ...       | 2         | 1         | 4         | 5         | 10                 | 10        | 6         | 9         | 49           |
| 70 to 75             | ...             | ... | ... | ... | ... | ... | ... | ...   | ...       | ...       | ...       | ...       | ...       | 2         | 2         | 3                  | 4         | 5         | 2         | 20           |
| 75 and over          | ...             | ... | ... | ... | ... | ... | ... | ...   | ...       | ...       | ...       | 1         | ...       | 1         | 2         | 2                  | 4         | 2         | ...       | 12           |
| Total Brides         | 1               | 2   | 12  | 60  | 161 | 409 | 577 | 706   | 4,799     | 4,090     | 1,552     | 633       | 298       | 175       | 98        | 47                 | 34        | 18        | 4         | 13,676       |

Although age inequalities among contracting parties were relatively few, they were striking in degree. Thus three men between 45 and 50 married women under 21, while seven women between 35 and 40 were married to men who were under 25 years. The great majority of the parties were, however, of suitable ages. Of every 1,000 men married during the year, 704 were older and 190 younger than their brides, and 106 were of the same age as their partners.

Proportion of marriages at various ages.

The proportions of both sexes marrying in the various age groups are shown in the succeeding table for the averages of the periods 1881-90 and 1901-10, also for the year 1921:—

PROPORTIONS OF MALES AND FEMALES MARRYING AT DIFFERENT AGES, 1881-90, 1901-10, AND 1921.

| Age Group.         | Proportion per 1,000 of total. |          |          |          |          |          |
|--------------------|--------------------------------|----------|----------|----------|----------|----------|
|                    | Bridegrooms.                   |          |          | Brides.  |          |          |
|                    | 1881-90.                       | 1901-10. | 1921.    | 1881-90. | 1901-10. | 1921.    |
| Under 15 ... ..    | ...                            | ...      | ...      | .15      | .14      | .22      |
| 15 to 16 ... ..    | ...                            | ...      | ...      | 1.17     | 1.12     | .88      |
| 16 to 17 ... ..    | .03                            | .09      | .07      | 6.53     | 5.16     | 4.39     |
| 17 to 18 ... ..    | .29                            | .34      | .80      | 20.32    | 15.58    | 11.77    |
| 18 to 19 ... ..    | 1.46                           | 2.09     | 3.81     | 42.94    | 33.31    | 29.98    |
| 19 to 20 ... ..    | 5.62                           | 7.02     | 7.82     | 65.03    | 48.67    | 42.19    |
| 20 to 21 ... ..    | 15.19                          | 13.67    | 15.79    | 73.84    | 59.41    | 51.48    |
| 21 to 25 ... ..    | 321.02                         | 258.64   | 241.08   | 432.34   | 380.91   | 351.05   |
| 25 to 30 ... ..    | 365.48                         | 357.07   | 370.87   | 223.83   | 267.78   | 298.84   |
| 30 to 35 ... ..    | 134.57                         | 177.13   | 177.83   | 62.07    | 98.54    | 113.48   |
| 35 to 40 ... ..    | 58.29                          | 84.06    | 83.43    | 29.53    | 44.37    | 46.29    |
| 40 to 45 ... ..    | 32.54                          | 40.87    | 38.10    | 17.10    | 21.19    | 21.94    |
| 45 to 50 ... ..    | 24.77                          | 24.05    | 23.47    | 12.23    | 11.00    | 12.80    |
| 50 to 55 ... ..    | 18.40                          | 13.33    | 14.26    | 6.74     | 6.29     | 7.16     |
| 55 to 60 ... ..    | 11.49                          | 8.05     | 10.82    | 3.40     | 3.13     | 3.44     |
| 60 and over ... .. | 10.85                          | 13.59    | 11.85    | 2.78     | 3.40     | 4.09     |
| Total ... ..       | 1,000.00                       | 1,000.00 | 1,000.00 | 1,000.00 | 1,000.00 | 1,000.00 |

The age constitution of brides shows a marked alteration in recent periods. Of every 1,000 women who were married during 1921 492 were under 25 years, and 299 were aged 25-30, as against 544 and 268 at corresponding ages in the years 1901 to 1910. As fertility is considerably less at older than at younger ages, it is evident that, owing to the altered age distribution of wives, the potential births to every 1,000 marriages in the year under review are fewer than to marriages contracted during the period 1901-1910.

A high proportion of re-marriages has the effect of increasing the average marrying age of bridegrooms and brides. This is readily seen by comparing for 1921 the mean

Age at marriage.

age at marriage of bachelors, 28·74, with that of divorced men, and of widowers—38·37 and 46·48 respectively. The average age of spinsters marrying was 25·84, as against 33·15 for divorced women and 39·26 for widows. The average age of men marrying women under 45 and of their brides for certain periods since 1870 is shown in the following table :—

### MEAN AGES AT MARRIAGE.

| Period. | Average Age of—  |                                 |
|---------|------------------|---------------------------------|
|         | Brides under 45. | Bridegrooms of Brides under 45. |
|         | Years.           | Years.                          |
| 1870-4  | 24·13            | 29·93                           |
| 1880-4  | 23·83            | 28·61                           |
| 1890-4  | 24·66            | 28·66                           |
| 1900-4  | 25·44            | 29·70                           |
| 1905-9  | 25·88            | 29·80                           |
| 1910    | 25·88            | 29·58                           |
| 1911    | 25·81            | 29·46                           |
| 1912    | 25·75            | 29·17                           |
| 1913    | 25·66            | 29·01                           |
| 1914    | 25·71            | 29·01                           |
| 1915    | 25·68            | 28·75                           |
| 1916    | 26·07            | 29·48                           |
| 1917    | 26·03            | 29·69                           |
| 1918    | 25·85            | 29·66                           |
| 1919    | 26·14            | 29·64                           |
| 1920    | 26·00            | 29·21                           |
| 1921    | 25·92            | 29·26                           |

The mean age of women under 45 who married in 1921 differed very slightly from the average of the previous five years. In Victoria in 1921 the mean marrying age of all brides was 26·66.

**Marrying age according to occupation.**

In the *Year-Book* for 1915-16 a table is given showing the average age at marriage of persons engaged in various occupations. This was based on 42,764 marriages in the period 1907-11, in connexion with which the records gave definite occupations.

**Birthplaces of persons marrying.**

Marriage records show that, of the persons married in Victoria during 1921, 90·4 per cent. were born in Australia, 7·7 per cent. in the United Kingdom, and 1·1 per cent. in other British Possessions, and that only small proportions, amounting to 1·3 per cent. of the bridegrooms and ·4 per cent. of the brides, were natives of foreign countries. The numbers born in Aus-

tralia and other countries are shown in the following table for the years 1913 and 1921 :—

BIRTHPLACES OF PERSONS MARRIED, 1913 AND 1921.

| Where Born.                      | Bridegrooms. |        | Brides. |        |
|----------------------------------|--------------|--------|---------|--------|
|                                  | 1913.        | 1921.  | 1913.   | 1921.  |
| Australia ... ..                 | 9,628        | 12,109 | 10,274  | 12,622 |
| New Zealand ... ..               | 155          | 106    | 82      | 83     |
| England and Wales ... ..         | 972          | 910    | 644     | 664    |
| Scotland ... ..                  | 213          | 200    | 141     | 150    |
| Ireland ... ..                   | 126          | 116    | 83      | 66     |
| Other British Possessions ... .. | 40           | 62     | 24      | 42     |
| Germany ... ..                   | 46           | 22     | 19      | 6      |
| Russia ... ..                    | 17           | 18     | 3       | 6      |
| Italy ... ..                     | 15           | 24     | 12      | 9      |
| United States ... ..             | 30           | 21     | 14      | 4      |
| Other Foreign Countries ... ..   | 82           | 88     | 28      | 24     |
| Total ... ..                     | 11,324       | 13,676 | 11,324  | 13,676 |

**Marriages in quarters.** Victorian experience shows that the Autumn quarter is the most frequently selected season for marrying. In 1921, however, the greatest proportion took place in the Spring, when 3,569 marriages were solemnized, as against 3,503 in the Summer, 3,481 in the Autumn, and 3,123 in the Winter.

**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, 1871-1921.

| Conjugal Condition.       | Percentage of total Marriages. |          |            |          |          |       |
|---------------------------|--------------------------------|----------|------------|----------|----------|-------|
|                           | 1871-80.                       | 1881-90. | 1891-1900. | 1901-10. | 1911-20. | 1921. |
| Bachelors and Spinsters.. | 80·59                          | 85·84    | 87·22      | 88·46    | 90·31    | 90·02 |
| Bachelors and Widows ..   | 7·10                           | 4·72     | 4·23       | 3·66     | 3·15     | 3·58  |
| Widowers and Spinsters..  | 7·75                           | 6·17     | 6·07       | 5·70     | 4·81     | 4·55  |
| Widowers and Widows ..    | 4·56                           | 3·27     | 2·48       | 2·18     | 1·73     | 1·85  |

Of every 1,000 persons of each sex married in Victoria during last year, 64 were widowers and 54 were widows, as against 61 and 55 respectively in 1920, 68 and 58 in 1919, and 77 and 57 in 1918.

**Divorced  
persons  
re-marrying.**

The number of divorced persons re-married during 1921 was 353, which was 16·12 per cent. above the number for the preceding year. Of the 117,884 persons married during the last five years, divorced persons numbered 1,316, or 1 in every 90 persons, as compared with 1 in every 118 in the preceding five-year period. The following are the numbers of divorced persons who have re-married since 1916 :—

#### DIVORCED PERSONS RE-MARRYING, 1917 TO 1921.

| Year. |    |    |    | Males. | Females. | Total. |
|-------|----|----|----|--------|----------|--------|
| 1917  | .. | .. | .. | 111    | 117      | 228    |
| 1918  | .. | .. | .. | 81     | 78       | 159    |
| 1919  | .. | .. | .. | 121    | 151      | 272    |
| 1920  | .. | .. | .. | 158    | 146      | 304    |
| 1921  | .. | .. | .. | 188    | 165      | 353    |

The divorced persons in the State at the census of 1921 numbered 2,313, of whom 1,092 were men and 1,221 women. A comparison of the re-marriages of divorced males and females during 1921 with these numbers shows that, according to the experience of that year, 17·2 per cent. of the males and 13·5 per cent. of the females re-marry each year. As these proportions greatly exceed the rates for other sections of the community, it is evident that many divorces are obtained with the view of early re-marriage.

**Marriages of  
minors.**

The proportions of bridegrooms and brides under 21 years of age are given in the subjoined table for the years 1917 to 1921 :—

| Year. |    |    |      | Percentage under 21 years of age. |         |
|-------|----|----|------|-----------------------------------|---------|
|       |    |    |      | Bridegrooms.                      | Brides. |
| 1917  | .. | .. | 2·90 | 14·06                             |         |
| 1918  | .. | .. | 3·27 | 13·91                             |         |
| 1919  | .. | .. | 3·14 | 13·09                             |         |
| 1920  | .. | .. | 2·66 | 13·46                             |         |
| 1921  | .. | .. | 2·83 | 14·09                             |         |

Marriages in religious denominations.

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 1920 and 1921, are shown in the following table:—

MARRIAGES IN VARIOUS DENOMINATIONS.

| Denomination.                 | 1920.   |                                | 1921.   |                                |
|-------------------------------|---------|--------------------------------|---------|--------------------------------|
|                               | Number. | Percentage of Total Marriages. | Number. | Percentage of Total Marriages. |
| Church of England ... ..      | 4,403   | 29·56                          | 3,980   | 29·10                          |
| Roman Catholic Church... ..   | 2,618   | 17·57                          | 2,356   | 17·23                          |
| Presbyterian Church ... ..    | 2,865   | 19·23                          | 2,711   | 19·82                          |
| Methodist Church ... ..       | 2,061   | 13·84                          | 1,918   | 14·02                          |
| Congregational Church ... ..  | 1,179   | 7·91                           | 993     | 7·26                           |
| Baptist Church... ..          | 687     | 4·61                           | 601     | 4·39                           |
| Lutheran Church ... ..        | 39      | ·26                            | 50      | ·37                            |
| Church of Christ ... ..       | 325     | 2·18                           | 358     | 2·62                           |
| Salvation Army ... ..         | 64      | ·43                            | 48      | ·35                            |
| Hebrew ... ..                 | 38      | ·26                            | 44      | ·32                            |
| Other Sects ... ..            | 170     | 1·14                           | 228     | 1·67                           |
| Registrars of Marriages... .. | 449     | 3·01                           | 389     | 2·85                           |
| Total ... ..                  | 14,898  | 100·00                         | 13,676  | 100·00                         |

Marriages by Anglican clergymen represented 29·10 per cent. of the total in 1921 as compared with 29·56 per cent. in the previous year, 28·78 per cent. in 1919, 27·67 per cent. in 1918, 25·44 per cent. in 1911 and 21·18 per cent. in the period 1904-8. Excepting the ratios for the 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.

In 1921, 2·85 per cent., in 1920, 3·01 per cent., in 1919, 3·3 per cent., and, in 1914 and 1913, 2·6 per cent. of the total marriages in Victoria were celebrated by lay registrars, as against 1 per cent. in 1909, and about 7 per cent. in the decade ended 1890. The decrease which occurred between the earlier period and 1909 was due to the competition of matrimonial agencies which sprang up about 1894, and the increase since 1909 has probably been due to the *Marriage Act* 1909 (now incorporated in the *Marriage Act* 1915—No. 2691) permitting the removal from the list of registered clergymen of the names of those who make a business of celebrating marriages. The proportion of civil marriages in Victoria is only about one-seventh of the proportions in New Zealand and England and Wales.

Registered clergymen.

The ministers qualified by registration to celebrate marriages in Victoria numbered 1,544 on 31st December,

1921. The numbers of those in each denomination (excepting Jews and Quakers) and of the lay registrars of marriages were as follows :—

### REGISTERED MINISTERS OF EACH DENOMINATION.

| Denomination.            | Number of Registered Ministers. | Denomination.                  | Number of Registered Ministers. |
|--------------------------|---------------------------------|--------------------------------|---------------------------------|
| Church of England ..     | 386                             | Australian Church ..           | 1                               |
| Roman Catholic ..        | 337                             | Ballarat Town Mission ..       | 1                               |
| Presbyterian ..          | 290                             | Free Christian ..              | 2                               |
| Methodist ..             | 260                             | New Church ..                  | 1                               |
| Congregational ..        | 67                              | Greek Orthodox Church ..       | 1                               |
| Baptist ..               | 80                              | Unitarian ..                   | 1                               |
| Church of Christ ..      | 60                              |                                |                                 |
| Lutheran ..              | 22                              | Total clergymen ..             | 1,544                           |
| Salvation Army ..        | 23                              | Lay Registrars of Marriages .. | 22                              |
| Latter Day Saints ..     | 4                               |                                |                                 |
| Seventh Day Adventist .. | 6                               | Grand Total ..                 | 1,566                           |
| Catholic Apostolic ..    | 2                               |                                |                                 |

### BIRTHS.

The number of births registered in Victoria during the year 1921 was 35,593, of which 18,289 were of males and 17,304 of females. This was 621 below the number recorded for the preceding year. Still-births, which are excluded from both births and deaths, numbered 1,111, and corresponded to a ratio of 3·1 per 100 infants born alive in 1921. There were 1,057 male to every 1000 female births in 1921, as compared with 1,062 in 1920, 1,054 in 1919, and 1,049 in 1918. The figures for each year since 1901 are as follows :—

### BIRTHS IN VICTORIA, 1902 TO 1921.

| Year.   | Males. | Females. | Total. | Year.   | Males. | Females. | Total. |
|---------|--------|----------|--------|---------|--------|----------|--------|
| 1902 .. | 15,583 | 14,878   | 30,461 | 1912 .. | 18,244 | 17,573   | 35,817 |
| 1903 .. | 15,115 | 14,454   | 29,569 | 1913 .. | 18,436 | 17,542   | 35,978 |
| 1904 .. | 15,313 | 14,450   | 29,763 | 1914 .. | 18,549 | 17,676   | 36,225 |
| 1905 .. | 15,523 | 14,584   | 30,107 | 1915 .. | 17,821 | 17,189   | 35,010 |
| 1906 .. | 15,716 | 15,128   | 30,844 | 1916 .. | 17,625 | 16,614   | 34,239 |
| 1907 .. | 15,989 | 15,380   | 31,369 | 1917 .. | 17,222 | 15,813   | 33,035 |
| 1908 .. | 16,073 | 15,028   | 31,101 | 1918 .. | 16,176 | 15,425   | 31,601 |
| 1909 .. | 16,092 | 15,457   | 31,549 | 1919 .. | 16,227 | 15,304   | 31,621 |
| 1910 .. | 16,411 | 15,026   | 31,437 | 1920 .. | 18,648 | 17,566   | 36,214 |
| 1911 .. | 16,944 | 16,100   | 33,044 | 1921 .. | 18,289 | 17,304   | 35,593 |

The births in Australia were 1,783 fewer in 1921 than in 1914. The number for 1921 was 136,200, as compared with 136,407 in 1920, 122,290 in 1919, 125,739 in 1918, 129,965 in 1917, 131,426 in 1916, 134,871 in 1915, and 137,983 in 1914. Of the total recorded for 1921, 35,593 occurred in Victoria, 54,636 in New South Wales, 20,329 in Queensland, 11,974 in South Australia, 7,807 in Western Australia, 5,755 in Tasmania, 79 in the Northern Territory, and 27 in the Federal Capital Territory.

**Birth rates.** 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, the rates are obviously 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, of necessity, the birth rate. The following table shows the birth rates in Victoria from 1870 to 1921 :—

BIRTH RATES IN VICTORIA PER 1,000 OF POPULATION, 1870 TO 1921.

| Year.   | Birth Rate. | Year.   | Birth Rate. | Year.   | Birth Rate. |
|---------|-------------|---------|-------------|---------|-------------|
| 1870 .. | 38·07       | 1898 .. | 25·51       | 1910 .. | 24·20       |
| 1875 .. | 33·94       | 1899 .. | 26·14       | 1911 .. | 25·03       |
| 1880 .. | 30·75       | 1900 .. | 25·79       | 1912 .. | 26·41       |
| 1885 .. | 31·33       | 1901 .. | 25·72       | 1913 .. | 25·82       |
| 1890 .. | 33·60       | 1902 .. | 25·05       | 1914 .. | 25·45       |
| 1891 .. | 33·57       | 1903 .. | 24·28       | 1915 .. | 24·55       |
| 1892 .. | 32·51       | 1904 .. | 24·42       | 1916 .. | 24·30       |
| 1893 .. | 31·18       | 1905 .. | 24·57       | 1917 .. | 23·50       |
| 1894 .. | 29·05       | 1906 .. | 24·91       | 1918 .. | 22·29       |
| 1895 .. | 28·46       | 1907 .. | 25·03       | 1919 .. | 21·57       |
| 1896 .. | 27·19       | 1908 .. | 24·56       | 1920 .. | 24·07       |
| 1897 .. | 26·49       | 1909 .. | 24·62       | 1921 .. | 23·15       |

The births per 1,000 of the population in the other States, New Zealand, and England and Wales in 1921 were as follows :—New South Wales, 25·94; Queensland, 26·59; South Australia, 24·07; Western Australia, 23·43; Tasmania, 26·97; New Zealand, 23·34; and England and Wales, 22·4.

The birth rate of a community is almost wholly dependent upon the proportion of wives at the reproductive period of life and their internal age distribution. As these elements, especially the former, differ widely in certain Australian States, the crude rates of the different States are scarcely comparable. The figures for the census of 1911 showed that in every 1,000 of the population of each State and of the Commonwealth the married women aged 15 to 45 numbered 106·0 in Victoria, 115·4 in New South Wales, 107·2 in Queensland, 109·9 in South Australia, 123·6 in Western Australia, 110·5 in Tasmania, and 111·2

in Australia. In the case of Victoria, the deficiency in the proportion of wives at the ages mentioned was accentuated by their comparatively unfavorable internal age distribution, the proportion at the younger and more fertile ages being smaller than that of any other State. A computation shows that, owing to these differences, the legitimate births in Victoria to every 1,000 of the population in 1911 were fewer by 3·5 than in New South Wales, by 1·4 than in Queensland, by 1·8 than in South Australia, by 4·2 than in Western Australia, and by 2·5 than in Tasmania, also that they were 2·0 less than in the whole of Australia.

The *Year-Book* of 1920-21 contains on pages 119 to 121, the result of an investigation which was made for the purpose of ascertaining the effect of changes in the age distribution of wives on the relative birth rates in five census years. A table is given showing the number of married women living in various age groups, between 15 and 45, in those years.

The next table shows the legitimate births per 1,000 married women under 45 (not allowing for their differing age distribution) in each State, New Zealand, and England and Wales in the three census years 1891, 1901, and 1911:—

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

| Country.                  | Legitimate Births per 1,000 Married Women aged 15 to 45. |       |       | Decrease per cent. in 20 years. |
|---------------------------|--|-------|-------|---------------------------------|
|                           | 1891.  | 1901. | 1911. |                                 |
| Victoria .. .. .          | 297·0  | 229·0 | 223·0 | 24·9                            |
| New South Wales .. .. .   | 298·9  | 235·6 | 235·4 | 21·2                            |
| Queensland .. .. .        | 315·0  | 251·0 | 244·8 | 22·3                            |
| South Australia .. .. .   | 311·1  | 235·0 | 235·9 | 24·2                            |
| Western Australia .. .. . | 352·8  | 244·0 | 221·8 | 37·1                            |
| Tasmania .. .. .          | 315·9  | 254·6 | 244·8 | 22·5                            |
| New Zealand .. .. .       | 279·1  | 246·1 | 211·7 | 24·2                            |
| England and Wales .. .. . | 268·8  | 234·2 | 196·2 | 27·0                            |

The birth records for 1921 show that 82 out of every 100 children were born to Australian parents, and 95 out of every 100 to one or both parents born in Australia. Of the total fathers, 80·7 per cent. were born in Victoria; 88·3 in Australia; ·8 in New Zealand; 7·2 in England and Wales; 1·3 in Scotland; ·8 in Ireland; ·4 in other British Possessions; and 1·2 per cent. in foreign countries. The corresponding percentages for mothers were: Victoria, 81·2; Australia, 89·0; New Zealand, ·7; England and Wales, 7·4; Scotland, 1·4; Ireland, ·6; other British Possessions, ·3; and foreign countries, ·6.

Corrected birth rates per 1,000 wives in Victoria.

Births to wives in Australasia and England.

Birthplaces of parents of legitimate children.

**Chinese and half-caste Chinese births.** During the past ten years the births to Chinese parents numbered 49, or 1 in every 6,657 legitimate births, and there were 263 Chinese half-caste births (fathers only Chinese), or 1 in every 1,240 legitimate births registered in the same period.

**Ages of parents of legitimate children.** The average ages of fathers and mothers of legitimate children whose births were recorded in 1921 were 33·60 and 29·91 years respectively, which were 4·34 and 3·99 years above the average ages of bridegrooms marrying brides under 45 years of age, and of such brides for the same period. The proportions of both parents in various age groups are shown in the following table for the year mentioned :—

PERCENTAGE OF PARENTS IN AGE GROUPS, 1921.

| Father.     |     |                            |        | Mother.     |     |                            |        |
|-------------|-----|----------------------------|--------|-------------|-----|----------------------------|--------|
| Age Group.  |     | Proportion per 100 Births. |        | Age Group.  |     | Proportion per 100 Births. |        |
| Under 20    | ... | ...                        | 32     | Under 20    | ... | ...                        | 2·80   |
| 20 to 25    | ... | ...                        | 9·88   | 20 to 25    | ... | ...                        | 20·58  |
| 25 to 30    | ... | ...                        | 26·08  | 25 to 30    | ... | ...                        | 31·12  |
| 30 to 35    | ... | ...                        | 26·61  | 30 to 35    | ... | ...                        | 24·90  |
| 35 to 40    | ... | ...                        | 18·49  | 35 to 40    | ... | ...                        | 14·63  |
| 40 to 45    | ... | ...                        | 10·50  | 40 to 45    | ... | ...                        | 5·52   |
| 45 to 50    | ... | ...                        | 5·11   | 45 and over | ... | ...                        | 45     |
| 50 and over | ... | ...                        | 3·01   |             |     |                            |        |
| Total       | ... | ...                        | 100·00 | Total       | ... | ...                        | 100·00 |

It will be seen that, on the experience of 1921, 51·7 per cent. of the mothers were between ages 20 and 30, and 39·5 per cent. between ages 30 and 40. The proportions of fathers at these ages were 36·0 and 45·1 per cent. respectively. Of every 1,000 legitimate births, about 28 were due to mothers under 20 years, and 5 to mothers aged 45 years and upwards. The *Year-Book* for 1916-17 contains on page 326 information relating to the ages of mothers of first-born children.

**Birth rates in town and country.** The subjoined table shows the number of births per 1,000 of the population in the metropolitan, the other urban, and the rural districts, for 1875 and each subsequent

fifth year, also the averages of the years 1901-5 and 1906-10, and the rates for each of the last eleven years :—

### BIRTH RATES IN METROPOLITAN, OTHER URBAN, AND RURAL DISTRICTS, 1875 TO 1921.

| Year.         | Births per 1,000 of the Population. |                        |                  |           |
|---------------|-------------------------------------|------------------------|------------------|-----------|
|               | Metropolitan District.              | Other Urban Districts. | Rural Districts. | Victoria. |
| 1875 .. ..    | 33·63                               | 38·63                  | 31·54            | 33·94     |
| 1880 .. ..    | 31·19                               | 34·21                  | 28·72            | 30·75     |
| 1885 .. ..    | 34·94                               | 31·87                  | 28·12            | 31·33     |
| 1890 .. ..    | 37·71                               | 34·43                  | 28·93            | 33·60     |
| 1895 .. ..    | 29·46                               | 34·03                  | 25·49            | 28·46     |
| 1900 .. ..    | 24·54                               | 32·29                  | 24·26            | 25·79     |
| 1901-5 .. ..  | 24·03                               | 32·14                  | 23·46            | 24·81     |
| 1906-10 .. .. | 23·59                               | 32·47                  | 22·88            | 24·66     |
| 1911 .. ..    | 24·51                               | 31·85                  | 22·79            | 25·03     |
| 1912 .. ..    | 27·48                               | 33·24                  | 22·46            | 26·41     |
| 1913 .. ..    | 27·20                               | 31·77                  | 21·74            | 25·82     |
| 1914 .. ..    | 26·82                               | 31·36                  | 21·34            | 25·45     |
| 1915 .. ..    | 26·11                               | 30·32                  | 20·18            | 24·55     |
| 1916 .. ..    | 25·51                               | 30·56                  | 20·10            | 24·30     |
| 1917 .. ..    | 24·45                               | 30·00                  | 19·53            | 23·50     |
| 1918 .. ..    | 23·11                               | 28·70                  | 18·49            | 22·29     |
| 1919 .. ..    | 22·27                               | 27·67                  | 18·07            | 21·57     |
| 1920 .. ..    | 25·58                               | 30·57                  | 19·26            | 24·07     |
| 1921 .. ..    | 23·80                               | 34·07                  | 18·01            | 23·15     |

Birth rates in country towns.

The birth rates in the seven principal country towns are given below for the period 1912-16, and for each of the last five years :—

### BIRTH RATES IN THE SEVEN PRINCIPAL COUNTRY TOWNS.

| Period.         | Births per 1,000 of the Population. |                      |                      |                          |              |              | Stawell. |
|-----------------|-------------------------------------|----------------------|----------------------|--------------------------|--------------|--------------|----------|
|                 | Ballarat and Suburbs.               | Bendigo and Suburbs. | Geelong and Suburbs. | Castlemaine and Suburbs. | Maryborough. | Warrnambool. |          |
| 1912-16...      | 25·60                               | 30·91                | 27·69                | 28·98                    | 31·78        | 42·27        | 37·86    |
| 1917 ...        | 22·94                               | 27·75                | 25·33                | 22·67                    | 29·60        | 42·03        | 35·37    |
| 1918 ...        | 21·24                               | 25·91                | 23·77                | 21·00                    | 29·90        | 39·73        | 32·65    |
| 1919 ...        | 22·04                               | 25·45                | 26·61                | 18·43                    | 39·39        | 45·33        | 28·80    |
| 1920 ...        | 24·21                               | 28·77                | 30·93                | 20·29                    | 38·90        | 48·88        | 36·00    |
| 1921 ...        | 24·94                               | 28·58                | 27·73                | 22·43                    | 40·42        | 47·16        | 37·41    |
| Average 1917-21 | 23·07                               | 27·29                | 26·87                | 20·96                    | 35·64        | 44·63        | 34·05    |

The rates for these towns, with the exceptions of Maryborough and Warrnambool, showed a considerable decline in 1916-20 as compared with the rates for the preceding five-year period.

Birth rates in metropolitan municipalities. The birth rates in metropolitan municipalities are shown in the following table :—

**METROPOLITAN BIRTH RATES 1901, 1911, 1919, 1920 AND 1921.**

| Districts.                       | Births per 1,000 of the Population. |       |       |       |       |
|----------------------------------|-------------------------------------|-------|-------|-------|-------|
|                                  | 1901.                               | 1911. | 1919. | 1920. | 1921. |
| Melbourne City ... ..            | 21·15                               | 19·90 | 16·91 | 19·28 | 18·84 |
| Fitzroy City ... ..              | 22·58                               | 24·40 | 20·49 | 18·43 | 17·60 |
| Collingwood City ... ..          | 26·44                               | 23·36 | 15·82 | 20·30 | 18·86 |
| Richmond City ... ..             | 25·51                               | 25·28 | 23·86 | 27·50 | 23·43 |
| Brunswick City ... ..            | 26·71                               | 24·81 | 22·80 | 25·85 | 22·49 |
| Northcote City ... ..            | 24·40                               | 26·00 | 26·91 | 31·93 | 29·55 |
| Prahran City ... ..              | 22·69                               | 23·77 | 24·47 | 30·18 | 29·50 |
| South Melbourne City... ..       | 22·10                               | 21·71 | 17·60 | 19·20 | 17·73 |
| Port Melbourne City ... ..       | 25·26                               | 24·59 | 19·77 | 25·00 | 23·95 |
| St. Kilda City ... ..            | 18·59                               | 21·10 | 13·29 | 13·86 | 12·01 |
| Brighton City ... ..             | 22·39                               | 22·48 | 21·11 | 20·67 | 20·47 |
| Essendon City ... ..             | 23·77                               | 21·32 | 20·77 | 22·48 | 22·12 |
| Hawthorn City ... ..             | 22·67                               | 20·16 | 18·31 | 23·51 | 19·30 |
| Kew City ... ..                  | 21·54                               | 23·43 | 21·05 | 23·10 | 21·71 |
| Footscray City ... ..            | 28·21                               | 30·05 | 28·76 | 32·35 | 30·73 |
| Williamstown City ... ..         | 25·34                               | 24·42 | 22·35 | 23·70 | 23·56 |
| Oakleigh Borough ... ..          | 31·25                               | 33·94 | 34·30 | 34·87 | 31·31 |
| Caulfield City ... ..            | 18·72                               | 20·15 | 23·47 | 27·87 | 22·23 |
| Malvern City ... ..              | 21·98                               | 20·25 | 16·00 | 15·35 | 16·85 |
| Camberwell City ... ..           | 19·17                               | 15·24 | 16·22 | 21·49 | 19·77 |
| Preston Shire ... ..             | 26·76                               | 24·06 | 17·70 | 16·43 | 22·91 |
| Coburg Town... ..                | 20·58                               | 22·75 | 25·27 | 31·70 | 28·17 |
| Sandringham Town ... ..          | ...                                 | ...   | 15·39 | 18·74 | 16·84 |
| Greater Melbourne :—             |                                     |       |       |       |       |
| Excluding Births in Institutions | 23·03                               | 22·32 | 20·16 | 23·03 | 21·20 |
| Including Births in Institutions | 24·85                               | 24·51 | 22·27 | 25·58 | 23·80 |

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

**CASES OF TWINS AND TRIPLETS.**

| Year.       | Cases of Twins. | Cases of Triplets. |
|-------------|-----------------|--------------------|
| 1917 ... .. | 372             | ...                |
| 1918 ... .. | 333             | 2                  |
| 1919 ... .. | 382             | 5                  |
| 1920 ... .. | 410             | 5                  |
| 1921 ... .. | 408             | 3                  |

On the average of the five years 1 mother in every 87 gave birth to twins, and 1 in every 11,075 was delivered of triplets. The proportions for the decennium ended 1912 were 1 in every 98 and 1 in every 7,949 respectively. There was one case of quadruplet births in 1917.

**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 1921 advantage was taken of these Acts, and of an Act (now repealed) passed in 1903, to legitimate 1,959 children, of whom 14 were registered in 1903, 19 in 1904, 34 in 1905, 43 in 1906, 58 in 1907, 60 in 1908, 51 in 1909, 71 in 1910, 126 in 1911, 106 in 1912, 157 in 1913, 149 in 1914, 141 in 1915, 140 in 1916, 136 in 1917, 162 in 1918, 159 in 1919, 165 in 1920, and 168 in 1921.

Legitimation Acts are in force in all the States and New Zealand, but there are marked differences in the numbers of legitimations resulting therefrom. Of every 100 children born out of wedlock, the numbers legitimized in the various States and New Zealand during 1921 were as follows:—Western Australia, 13·1; New South Wales, 16·6; South Australia, 16·3; New Zealand, 13·4; Queensland, 17·0; Victoria, 9·8; and Tasmania, 8·8.

**Illegitimate births in Victoria.**

The number of illegitimate births in Victoria during the year 1921 was 1,714, which gives a proportion of 4·82 to every 100 births registered, as against 5·24 in the previous year, 5·77 in 1919, 5·84 in 1918, 5·51 in 1917, 5·15 in 1916, 5·75 in 1915, and 5·77 in the period 1910-14.

**Illegitimate births to unmarried women in Victoria.**

While the percentage of illegitimate to total births in Victoria increased from 5·36 in 1891 to 5·94 in 1911, the illegitimate births in proportion to single women were fewer in the later year. It is thus seen that the higher ratio of illegitimate to total births in 1911, as compared with 1891, was not due to greater laxity of morals, but to the smaller number of legitimate births. The proportion of infants born out of wedlock to the unmarried and widowed women between 15 and 45 years of age in Victoria is shown in the subjoined table for the census years 1891, 1901, and 1911, when the conjugal condition of the population was known:—

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

| Year.      | Single Women aged 15 to 45. | Illegitimate Births. | Illegitimate Births per 1,000 Single Women. |
|------------|-----------------------------|----------------------|---|
| 1891 .. .. | 142,443                     | 2,064                | 14·5  |
| 1901 .. .. | 167,760                     | 1,729                | 10·3  |
| 1911 .. .. | 187,488                     | 1,964                | 10·5  |

The number of infants born out of wedlock per 1,000 unmarried and widowed women in Victoria was 10·5 in 1911. This was considerably lower than the corresponding figures for most European countries. The proportions ranged from 27·4 in Germany, 24·3 in Sweden, 24·2 in Denmark, 19·4 in Italy, 19·1 in France and 17·8 in Belgium, to 13·4 in Scotland, 8·0 in England, 6·8 in Holland and 3·8 in Ireland.

**Illegitimacy in town and country.** A larger proportion of illegitimacy prevails in Melbourne and suburbs than in the other urban and the rural districts of Victoria, the proportion in the country districts being the smallest of all. During the year 1921, in the metropolitan area 1 birth in every 15, in other urban districts 1 in 30, and in the rural districts only 1 in 52 was registered as illegitimate. The proportions in 1907-12 were 1 in 11, 1 in 21, and 1 in 42 respectively.

### DEATHS.

**Deaths.** The following return shows the number of deaths—male and female—also the quarters in which they were registered and the proportion per 1,000 of the population since 1899:—

#### DEATHS IN EACH QUARTER, 1900 TO 1921.

| Period.         | Annual Deaths. | Sex.   |          | Quarter of Registration. |       |            |           | Death Rate per 1,000 of the Population. |
|-----------------|----------------|--------|----------|--------------------------|-------|------------|-----------|---|
|                 |                | Males. | Females. | March.                   | June. | September. | December. |   |
| 1900-4 ..       | 15,457         | 8,686  | 6,771    | 3,921                    | 3,750 | 3,992      | 3,794     | 12·84                                   |
| 1905-9 ..       | 14,932         | 8,296  | 6,636    | 3,805                    | 3,539 | 3,917      | 3,671     | 11·93                                   |
| 1910 ..         | 14,736         | 8,132  | 6,604    | 3,820                    | 3,693 | 3,661      | 3,562     | 11·34                                   |
| 1911 ..         | 15,217         | 8,356  | 6,861    | 3,519                    | 3,774 | 4,132      | 3,792     | 11·52                                   |
| 1912 ..         | 16,595         | 9,077  | 7,518    | 4,000                    | 4,199 | 4,498      | 3,898     | 12·23                                   |
| 1913 ..         | 15,475         | 8,496  | 6,979    | 4,075                    | 3,678 | 4,137      | 3,585     | 11·11                                   |
| 1914 ..         | 16,503         | 9,017  | 7,486    | 3,953                    | 4,030 | 4,257      | 4,263     | 11·59                                   |
| 1915 ..         | 15,823         | 8,860  | 6,963    | 3,524                    | 3,788 | 4,380      | 4,131     | 11·10                                   |
| 1916 ..         | 16,489         | 8,901  | 7,588    | 4,111                    | 4,140 | 4,509      | 3,729     | 11·70                                   |
| 1917 ..         | 14,555         | 7,952  | 6,603    | 3,430                    | 3,585 | 3,831      | 3,709     | 10·36                                   |
| 1918 ..         | 15,177         | 8,079  | 7,098    | 3,537                    | 3,563 | 4,144      | 3,933     | 10·70                                   |
| 1919 ..         | 19,370         | 10,508 | 8,862    | 4,303                    | 5,784 | 5,469      | 3,814     | 13·21                                   |
| 1920 ..         | 16,832         | 9,060  | 7,772    | 3,998                    | 4,351 | 4,433      | 4,050     | 11·19                                   |
| 1921 ..         | 16,165         | 8,662  | 7,503    | 4,017                    | 4,031 | 4,412      | 3,705     | 10·51                                   |
| Average 1917-21 | 16,420         | 8,852  | 7,568    | 3,857                    | 4,263 | 4,458      | 3,842     | 11·19                                   |

The number of deaths in 1921 was 16,165, which was 320 below the average of the preceding five years, and less by 3,205 than in 1919. The decrease as compared with that year was wholly due to the death rate of 1919 having been abnormally high by reason of an influenza epidemic.

The deaths in Australia in 1921 numbered 54,076, as against 56,289 in the preceding year, 65,930 in 1919, 50,249 in 1918, 48,029 in 1917, 54,197 in 1916, 52,782 in 1915, and 51,720 in 1914. Of the total deaths in the year under review 16,165 occurred in Victoria, 20,026 in New South Wales, 7,142 in Queensland, 4,982 in South Australia, 3,480 in Western Australia, 2,197 in Tasmania, 80 in the Northern Territory, and 4 in the Federal Capital Territory. The death rates per 1,000 of the population for each of the Australian States and New Zealand are shown in the following statement for the periods 1902-6 and 1907-11, and for each of the last ten years :--

### DEATH RATES IN THE AUSTRALIAN STATES AND NEW ZEALAND.

| Period. | Victoria. | New South Wales. | Queensland. | South Australia. | Western Australia. | Tasmania. | Australia. | New Zealand. |
|---------|-----------|------------------|-------------|------------------|--------------------|-----------|------------|--------------|
| 1902-6  | 12·55     | 10·84            | 10·92       | 10·67            | 12·17              | 11·04     | 11·44      | 9·81         |
| 1907-11 | 11·64     | 10·20            | 10·12       | 9·89             | 10·47              | 10·83     | 10·64      | 9·77         |
| 1912 .. | 12·23     | 10·86            | 10·96       | 10·28            | 11·06              | 10·73     | 11·23      | 8·87         |
| 1913 .. | 11·11     | 10·89            | 10·39       | 10·82            | 9·34               | 10·87     | 10·78      | 9·47         |
| 1914 .. | 11·59     | 10·11            | 9·97        | 10·71            | 9·41               | 9·67      | 10·51      | 9·31         |
| 1915 .. | 11·09     | 10·48            | 11·00       | 10·68            | 9·28               | 10·11     | 10·66      | 9·06         |
| 1916 .. | 11·70     | 10·63            | 11·09       | 11·73            | 9·80               | 10·38     | 11·04      | 9·64         |
| 1917 .. | 10·36     | 9·56             | 9·73        | 10·10            | 8·97               | 8·89      | 9·80       | 9·58         |
| 1918 .. | 10·70     | 9·84             | 10·39       | 9·97             | 9·11               | 8·84      | 10·09      | 14·84        |
| 1919 .. | 13·21     | 13·46            | 12·42       | 12·01            | 11·10              | 10·37     | 12·82      | 9·51         |
| 1920 .. | 11·19     | 10·32            | 10·82       | 10·76            | 10·14              | 9·35      | 10·62      | 10·27        |
| 1921 .. | 10·51     | 9·51             | 9·34        | 10·02            | 10·44              | 10·30     | 9·91       | 8·73         |

The rate in Victoria, taking the average of the last five years, was higher than in any other State, but this result was chiefly due to the larger proportion of elderly persons, amongst whom the mortality rate is very high. The comparatively high rate in Australia in 1919 and the abnormal rate in New Zealand in the previous year were due to a heavy mortality from influenza.

Comparisons of the crude death rates of a country for different periods, or of different countries for the same period, are frequently misleading, as they do not allow for variations in the age distributions of the population. In European countries, the proportion of elderly people, among whom the death rate is heavy, is higher than in the Commonwealth or any of the Australian States, and it is greater in Victoria, and lower in Western Australia, than in any of the other States. The proportions living in various age groups at the census of 1911 in each division of the Commonwealth and New Zealand, and those in 1890 in Sweden—a

Age distribution and crude death rates.

country which fairly represents European conditions—are shown in the following table :—

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

| Country.                | Proportion per 10,000 of Population living in the Age Group— |          |           |           |              | Total. |
|-------------------------|--|----------|-----------|-----------|--------------|--------|
|                         | Under 1 Year.  | 1 to 20. | 20 to 40. | 40 to 60. | 60 and over. |        |
| Victoria .. .. .        | 235  | 3,837    | 3,173     | 2,020     | 735          | 10,000 |
| New South Wales .. ..   | 274  | 3,926    | 3,358     | 1,813     | 629          | 10,000 |
| Queensland .. .. .      | 269  | 4,083    | 3,285     | 1,782     | 581          | 10,000 |
| South Australia .. ..   | 256  | 3,901    | 3,304     | 1,833     | 706          | 10,000 |
| Western Australia .. .. | 266  | 3,646    | 3,682     | 2,004     | 402          | 10,000 |
| Tasmania .. .. .        | 279  | 4,243    | 3,069     | 1,783     | 626          | 10,000 |
| Australia .. .. .       | 260  | 3,914    | 3,297     | 1,882     | 647          | 10,000 |
| New Zealand .. .. .     | 241  | 3,763    | 3,600     | 1,691     | 705          | 10,000 |
| Sweden .. .. .          | 255  | 3,980    | 2,696     | 1,923     | 1,146        | 10,000 |

The figures show that the characteristic features of Australian populations, as compared with those of European countries, are a large preponderance of persons in the age group 20-40, and a relatively small number aged 60 and over. Among the Australian States, Victoria and Western Australia have, as mentioned previously, the highest and lowest proportions respectively of persons aged 60 years and upwards—a point which should be kept in view when comparing their crude death rates.

The differences shown in the preceding table in the age 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 an age distribution corresponding to that of Sweden in 1890, which has been adopted by statisticians as a standard for this purpose. Mortality indexes for each State for the undermentioned years, as compiled by the Commonwealth Statistician, are as follows :—

INDEX OF MORTALITY FOR THE AUSTRALIAN STATES.

| Year. | Index of Mortality. |                  |             |                  |                    |           |               |
|-------|---------------------|------------------|-------------|------------------|--------------------|-----------|---------------|
|       | Victoria.           | New South Wales. | Queensland. | South Australia. | Western Australia. | Tasmania. | Commonwealth. |
| 1917  | 12·81               | 12·45            | 12·64       | 12·65            | 12·93              | 11·78     | 12·63         |
| 1918  | 13·23               | 12·86            | 13·94       | 12·53            | 13·69              | 11·70     | 13·07         |
| 1919  | 15·51               | 16·48            | 15·97       | 14·59            | 15·50              | 13·29     | 15·75         |
| 1920  | 13·72               | 13·32            | 14·36       | 13·49            | 15·63              | 12·28     | 13·65         |
| 1921  | 12·85               | 12·27            | 12·30       | 12·47            | 15·60              | 13·16     | 12·66         |

In four of the last five years the crude death rate was higher in Victoria than in any other Australian State, but the figures in the

above table show that one State in 1917, and two States in the other years under review, had a higher index of mortality than Victoria

A reliable estimate of the improvement in the health of the community is obtained by comparing the death rates for groups of ages at different periods. Such rates for Victoria are given in the subjoined table for the decennial periods 1891-1900, 1902-1911, and 1912-21 :—

### DEATH RATES IN CERTAIN AGE GROUPS IN VICTORIA.

| Age Group.      | Deaths per 1,000 at each Age. |            |          |
|-----------------|-------------------------------|------------|----------|
|                 | 1891-1900.                    | 1902-1911. | 1912-21. |
| <i>Males.</i>   |                               |            |          |
| Under 5         | 39·29                         | 26·73      | 23·85    |
| 5 to 10         | 3·36                          | 2·16       | 2·42     |
| 10 to 15        | 2·20                          | 1·87       | 1·75     |
| 15 to 20        | 3·28                          | 2·72       | 2·37     |
| 20 to 25        | 4·79                          | 3·51       | 3·57     |
| 25 to 35        | 6·60                          | 4·75       | 4·71     |
| 35 to 45        | 9·03                          | 7·81       | 7·14     |
| 45 to 55        | 15·32                         | 13·48      | 13·10    |
| 55 to 65        | 32·90                         | 25·38      | 25·05    |
| 65 to 75        | 62·99                         | 59·04      | 53·18    |
| 75 and upwards  | 145·05                        | 157·26     | 157·97   |
| All ages        | 15·47                         | 13·30      | 12·57    |
| <i>Females.</i> |                               |            |          |
| Under 5         | 34·09                         | 22·35      | 19·26    |
| 5 to 10         | 3·12                          | 2·03       | 2·24     |
| 10 to 15        | 2·06                          | 1·78       | 1·56     |
| 15 to 20        | 3·43                          | 2·80       | 2·27     |
| 20 to 25        | 4·81                          | 3·59       | 3·56     |
| 25 to 35        | 6·89                          | 5·01       | 4·58     |
| 35 to 45        | 8·68                          | 7·16       | 6·01     |
| 45 to 55        | 12·12                         | 9·96       | 9·44     |
| 55 to 65        | 23·64                         | 18·80      | 17·46    |
| 65 to 75        | 45·87                         | 46·71      | 42·01    |
| 75 and upwards  | 124·33                        | 131·77     | 135·61   |
| All ages        | 12·36                         | 10·66      | 10·35    |

The figures show that at all ages, excepting between 5 and 10, and 20 and 25, and 75 and over for males, and between 5 and 10, and 75 and over for females, much lower death rates were experienced during the decennium 1912-21 than in the preceding one. Compared with 1902-11, the mortality rate for the period 1912-21 for the two sexes combined was lower by 10 per cent. for the age group 0-10, by 9 per cent. at ages 10-15, by 16 per cent. at 15-20, by 5 per cent. at 25-35, by 12 per cent. at 35-45, and by 4 per cent. at 45-55 and 55-65. The rates, up to age 65 and probably to age 75, were comparable, and the marked decrease at successive periods showed that there had been a general improvement in hygienic conditions.

The deaths of residents of metropolitan municipalities and their proportions to population are shown in the following table for the period 1910-12 and for the years 1920 and 1921. The method adopted in the compilation of the table is given on pages 338 and 339 of the *Year-Book* for 1916-17:—

DEATH RATES IN METROPOLITAN MUNICIPALITIES,  
1910-12, 1920 AND 1921.

| Municipality.            | Annual Deaths. |       |       | Annual Deaths<br>per 1,000 Residents. |       |       |
|--------------------------|----------------|-------|-------|---------------------------------------|-------|-------|
|                          | 1910-12.       | 1920. | 1921. | 1910-12.                              | 1920. | 1921. |
| Richmond City ...        | 594            | 510   | 533   | 14·71                                 | 12·22 | 12·33 |
| Port Melbourne City ...  | 196            | 170   | 161   | 14·56                                 | 12·50 | 12·28 |
| Melbourne City ...       | 1,469          | 1,524 | 1,390 | 14·44                                 | 14·30 | 13·65 |
| Fitzroy City ...         | 493            | 504   | 474   | 14·41                                 | 14·14 | 13·61 |
| Collingwood City ...     | 462            | 406   | 390   | 13·44                                 | 11·35 | 11·38 |
| Brighton City ...        | 161            | 218   | 225   | 13·02                                 | 10·20 | 10·51 |
| Oakleigh Borough ...     | 40             | 71    | 83    | 12·90                                 | 13·10 | 13·61 |
| Prahran City ...         | 587            | 625   | 560   | 12·89                                 | 12·38 | 11·13 |
| South Melbourne City ... | 591            | 578   | 538   | 12·83                                 | 11·78 | 11·49 |
| Williamstown City ...    | 198            | 246   | 204   | 12·80                                 | 12·81 | 10·47 |
| St. Kilda City ...       | 326            | 375   | 362   | 12·65                                 | 10·50 | 9·33  |
| Preston Shire ...        | 65             | 95    | 105   | 12·63                                 | 10·41 | 10·69 |
| Footscray City ...       | 290            | 427   | 377   | 12·15                                 | 13·68 | 11·13 |
| Brunswick City ...       | 383            | 485   | 466   | 11·75                                 | 11·70 | 10·42 |
| Coburg Town ...          | 111            | 181   | 159   | 11·49                                 | 10·97 | 8·61  |
| Essendon City ...        | 269            | 369   | 349   | 11·12                                 | 10·04 | 9·83  |
| Hawthorn City ...        | 265            | 302   | 339   | 10·64                                 | 10·62 | 11·60 |
| Kew City ...             | 105            | 145   | 167   | 10·47                                 | 9·68  | 10·18 |
| Camberwell City ...      | 131            | 227   | 240   | 10·21                                 | 10·45 | 9·95  |
| Caulfield City ...       | 157            | 334   | 328   | 9·68                                  | 10·08 | 8·00  |
| Malvern City ...         | 151            | 304   | 315   | 9·29                                  | 9·37  | 9·56  |
| Northcote City ...       | 165            | 304   | 287   | 9·22                                  | 10·93 | 9·41  |
| Sandringham Town ...     |                | 92    | 93    |                                       | 10·51 | 8·16  |
| Remainder of Metropolis  | 218            | 351   | 397   | 9·22                                  | 12·20 | 10·44 |
| Whole Metropolis ...     | 7,427          | 8,843 | 8,542 | 12·61                                 | 11·72 | 10·85 |
| Remainder of State ...   | 8,089          | 7,989 | 7,623 | 10·99                                 | 10·66 | 10·16 |

The outstanding features of the above figures are the high death rates prevailing in some of the old centres of population, of which Melbourne City, Fitzroy, Richmond, Collingwood, and Port Melbourne are examples, and the low rates in comparatively recently settled areas, such as Sandringham, Coburg, Northcote, Malvern, Caulfield, Camberwell, and Kew. In the former group the deaths for 1921 were 12·97 per 1,000 as against 9·09 in the latter. Slight differences in the age distribution of the populations of these two divisions may exist, but they can account for only a small portion of the great disparity in their mortality rates. It would appear that the standard of health, as indicated by death rates, is much better in the outlying and less

densely populated suburbs than in the central and more congested areas of the metropolis.

**Metropolitan and country death rates compared.** The ages of the people, as disclosed at the census of 1911, enable a comparison to be made between the death rates prevailing at that time in Greater Melbourne and in the remainder of the State. On the average of the years 1910-12, the deaths of metropolitan residents were in the ratio of 12·61 per 1,000 of population as against a ratio of 10·99 for residents of the rest of the State. The apparent difference in favour of the country is 1·62, but a computation shows that, when allowances are made for the unequal age and sex distribution of the people in these areas, the actual difference is greater—the deaths per 1,000 of population being fewer by 2·55 among country than among metropolitan residents.

**Decrease in Metropolitan death rate.** In Greater Melbourne, in the decade 1912-21, there were 12·79 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 20,728 lives in the past ten years. Many factors have contributed to this result, but it is probable that the introduction of the sewerage system, the notification of contagious diseases, the improvement in the conditions of labour, the increasing supervision of the manufacture and sale of articles of consumption, the greater proportion of females in the community, and the advance of medical science, have been the main causes of the decline. 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 1912-21 with those for the decennium 1892-1901. The following are the rates :—

| Cause of Death.               | Deaths per 1,000 of Population. |            |                      |
|-------------------------------|---------------------------------|------------|----------------------|
|                               | 1892-1901.                      | 1912-1921. | Decrease in 1912-21. |
| Pulmonary Tuberculosis ...    | 1·654                           | 0·847      | 0·807                |
| Other Tubercular Diseases ... | 0·446                           | 0·191      | 0·255                |
| Typhoid Fever ... ..          | 0·293                           | 0·033      | 0·260                |
| Scarlet Fever ... ..          | 0·033                           | 0·019      | 0·014                |
| Measles ... ..                | 0·215                           | 0·051      | 0·164                |
| Diphtheria ... ..             | 0·196                           | 0·176      | 0·020                |
| Total ... ..                  | 2·837                           | 1·317      | 1·520                |

The figures show that the lower death rates from the six above-mentioned diseases in 1912-21 accounted for 51 per cent. of the total decline. It is impossible to state which municipalities have contributed most to this result, as their mortality rates from the diseases referred to are not available for the earlier period. A comparison, however, of the general death rates in each, for the periods under review, shows that all divisions of the metropolis have, in varying degrees, shared in the improvement.

**Death rates in country towns.** Prior to 1912 the death rates given for the chief country towns were based upon the deaths therein in relation to their respective populations. For reasons which have been given in previous editions of this work that method was discarded and the deaths of residents in proportion to population are now shown instead. Such deaths, and their rates per 1,000 of population, are given in the following statement for the periods 1910-12 and 1913-20, and the year 1921 :—

DEATHS PER 1,000 RESIDENTS IN COUNTRY TOWNS.

| Town.                 | Annual Deaths of Residents. |          |       | Annual Deaths of Residents per 1,000 of Population. |          |       |
|-----------------------|-----------------------------|----------|-------|---|----------|-------|
|                       | 1910-12.                    | 1913-20. | 1921. | 1910-12.  | 1913-20. | 1921. |
| Ballarat and Suburbs  | 639                         | 611      | 552   | 15·07   | 14·89    | 14·34 |
| Bendigo and Suburbs   | 690                         | 587      | 559   | 17·51   | 16·11    | 16·85 |
| Geelong and Suburbs   | 411                         | 421      | 416   | 13·68   | 12·22    | 11·50 |
| Castlemaine & Suburbs | 92                          | 90       | 86    | 13·11   | 11·95    | 12·29 |
| Warrnambool ..        | 95                          | 100      | 121   | 13·55   | 13·22    | 15·63 |
| Maryborough ..        | 76                          | 69       | 78    | 13·39   | 13·63    | 16·42 |
| Stawell .. ..         | 82                          | 64       | 55    | 18·60   | 14·26    | 12·47 |

**Residents of different areas dying in hospitals.** An examination of the particulars of residence of persons who have died in the public hospitals of Victoria during recent years reveals interesting and definite information regarding the assistance rendered by these institutions to people in different divisions of the State. For the metropolitan municipalities, the seven principal country towns, and the remainder of the State, the percentages of the total deaths of

residents thereof which occurred in public hospitals during the period 1910-15 and the year 1921 were as follows :—

PROPORTION OF DEATHS OF RESIDENTS OF CERTAIN AREAS OCCURRING IN HOSPITALS, 1910-15 AND 1921.

| Area.                  | Percentage of Deaths of Residents occurring in Hospitals. |       | Area.                  | Percentage of Deaths of Residents occurring in Hospitals. |       |
|------------------------|---|-------|------------------------|---|-------|
|                        | 1910-15.  | 1921. |                        | 1910-15.  | 1921. |
| Port Melbourne City... | 35·9  | 36·0  | Oakleigh Borough ...   | 14·6  | 32·5  |
| Fitzroy City ...       | 34·5  | 34·4  | Brighton City ...      | 14·2  | 18·2  |
| Melbourne City ...     | 34·4  | 36·5  | Castlemaine ...        | 13·9  | 17·4  |
| Collingwood City ...   | 28·0  | 35·9  | Ballarat ...           | 13·9  | 17·6  |
| Richmond City ...      | 26·6  | 31·9  | Hawthorn City ...      | 13·2  | 17·1  |
| South Melbourne City   | 26·5  | 29·9  | Malvern City ...       | 12·8  | 12·1  |
| Preston Shire ...      | 25·0  | 26·7  | Kew City ...           | 12·6  | 15·6  |
| Northcote City ...     | 24·4  | 24·7  | Williamstown City ...  | 12·2  | 15·2  |
| Brunswick City ...     | 23·9  | 26·8  | Caulfield City ...     | 11·7  | 13·7  |
| Warrnambool ...        | 23·0  | 20·7  | Camberwell City ...    | 11·1  | 13·3  |
| Maryborough ...        | 22·9  | 24·4  | Sandringham Town...    | ...   | 21·5  |
| Footscray City ...     | 22·6  | 28·4  | Summary :—             |   |       |
| Prahran City ...       | 21·7  | 22·5  | Greater Melbourne ...  | 24·6  | 26·4  |
| Stawell ...            | 19·6  | 20·0  | Seven Towns ...        | 16·4  | 18·6  |
| St. Kilda City ...     | 18·9  | 18·8  | Remainder of State ... | 17·8  | 23·1  |
| Coburg Town ...        | 18·0  | 27·7  | Whole State ..         | 20·9  | 24·3  |
| Bendigo ..             | 16·8  | 18·6  |                        |   |       |
| Essendon City ...      | 16·5  | 22·4  |                        |   |       |
| Geelong ...            | 16·3  | 18·5  |                        |   |       |

Of the total deaths in the State 24·3 per cent. occurred in public hospitals in 1921, as against 24·8 in the previous year and 20·9 in 1910-15. The disparities in the proportions for different areas are very significant. Of the total cases of fatal illness which occurred amongst residents of the districts mentioned in 1921, the percentage treated in public hospitals varied from 36·5 for Melbourne City, 36·0 for Port Melbourne, 35·9 for Collingwood, and 34·4 for Fitzroy, to 13·3 for Camberwell, and 12·1 for Malvern. For the metropolitan area the percentage was 26·4 as compared with 22·0 for the rest of the State. Taking the proportion for fatal cases as an index of all cases dealt with, it would appear that, relatively to population, the assistance rendered by public hospitals to the residents of Greater Melbourne exceeds by about 20 per cent. that given to people residing elsewhere.

Deaths in public institutions in Greater Melbourne.

In 1921 the deaths in public institutions were 35·4 per cent. of the total in Greater Melbourne, 26·3 per cent. of the total in extra metropolitan districts, and 31·3 per cent. of the total in the State as a whole. The number of deaths in each public institution in the metropolis in 1921 is given in the subjoined table :—

DEATHS IN PUBLIC INSTITUTIONS IN GREATER MELBOURNE, 1921.

| Institution.                  | No. of Deaths. | Institution.   | No. of Deaths. |
|-------------------------------|----------------|--|----------------|
| <b>Hospitals—</b>             |                | <b>Other Public Institutions—</b>                    |                |
| Melbourne ... ..              | 865            | Victorian Homes for Aged and Infirm ... ..           | 74             |
| Alfred ... ..                 | 250            | Benevolent Asylum ... ..                             | 182            |
| St. Vincent's ... ..          | 160            | Convent of the Little Sisters of the Poor ... ..     | 57             |
| Homœopathic ... ..            | 103            | Old Colonists' Homes ... ..                          | 4              |
| Austin ... ..                 | 235            | Foundling Hospital, Broadmeadows ... ..              | 6              |
| Children's ... ..             | 422            | Macleod Military Sanatorium ... ..                   | 8              |
| Women's ... ..                | 201            | Depôt for Neglected Children ... ..                  | 16             |
| Infectious Diseases ... ..    | 125            | Kew Lunatic Asylum ... ..                            | 112            |
| Queen Victoria ... ..         | 22             | Yarra Bend Lunatic Asylum... ..                      | 80             |
| Eye and Ear ... ..            | 5              | Mont Park Asylum ... ..                              | 25             |
| Williamstown ... ..           | 22             | Receiving House — Mental Hospital .. ..              | 29             |
| Caulfield Military ... ..     | 54             | The Haven ... ..                                     | 18             |
| Police ... ..                 | 2              | Foundling Hospital, East Melbourne ... ..            | 6              |
| Heatherton Sanatorium ... ..  | 78             | Coode Island ... ..                                  | 3              |
| <b>Total Hospitals ... ..</b> | <b>2,544</b>   | <b>Total Hospitals and other Institutions ... ..</b> | <b>3,164</b>   |

Of the 2,544 persons who died in public hospitals in Greater Melbourne during 1921, 326 were residents of places outside the metropolis.

The mortality of children under one year in proportion to births has been considerably less in recent than in earlier periods, but the necessity for reducing the risks to infant health and life, particularly amongst illegitimate children, is still apparent. The deaths of infants in 1921 numbered 2,586, and, as there were 35,593 births, it follows that of every 100 infants born approximately 7·27 died within twelve months. The rates for Melbourne and suburbs, the extra metropolitan area, and the whole

Infantile mortality.

State, for different periods since 1880, are shown in the following table :—

### INFANTILE DEATH RATES 1881 TO 1921.

| Period.         | Deaths under One Year per 100 Births in— |                         |              |
|-----------------|--|-------------------------|--------------|
|                 | Melbourne and Suburbs.                   | Remainder of the State. | Whole State. |
| 1881-1890 .. .. | 17·14                                    | 9·50                    | 12·68        |
| 1891-1900 .. .. | 13·36                                    | 9·60                    | 11·11        |
| 1901-1905 .. .. | 11·26                                    | 8·45                    | 9·58         |
| 1906-1910 .. .. | 9·47                                     | 6·95                    | 8·00         |
| 1911 .. ..      | 7·82                                     | 6·12                    | 6·87         |
| 1912 .. ..      | 9·02                                     | 6·05                    | 7·45         |
| 1913 .. ..      | 7·63                                     | 6·51                    | 7·05         |
| 1914 .. ..      | 8·45                                     | 7·24                    | 7·83         |
| 1915 .. ..      | 7·99                                     | 5·77                    | 6·88         |
| 1916 .. ..      | 8·56                                     | 6·29                    | 7·46         |
| 1917 .. ..      | 6·55                                     | 4·72                    | 5·67         |
| 1918 .. ..      | 7·09                                     | 5·16                    | 6·17         |
| 1919 .. ..      | 7·87                                     | 5·65                    | 6·80         |
| 1920 .. ..      | 8·41                                     | 6·21                    | 7·38         |
| 1921 .. ..      | 7·40                                     | 7·11                    | 7·27         |

On the average of the past five years the infantile death rate for the metropolis was 7·46 per 100 births, which was 28 per cent. below that for the decennium ended 1910, and 44 per cent. below the rate for the decennium 1891-1900.

The deaths of infants under 1 year of age per 100 births in Greater Melbourne, Ballarat, Bendigo, Geelong, and the rest of the State for each of the past fourteen years were as follows :—

### INFANTILE DEATH RATES IN DIFFERENT DIVISIONS OF THE STATE.

| Year.      | Deaths under One Year per 100 Births. |                        |                       |                      |                      |                    |
|------------|---------------------------------------|------------------------|-----------------------|----------------------|----------------------|--------------------|
|            | Victoria.                             | Melbourne and Suburbs. | Ballarat and Suburbs. | Bendigo and Suburbs. | Geelong and Suburbs. | Rest of the State. |
| 1907-11 .. | 7·51                                  | 8·77                   | 9·48                  | 9·56                 | 8·09                 | 6·03               |
| 1912.. ..  | 7·45                                  | 9·02                   | 10·04                 | 8·36                 | 6·73                 | 5·53               |
| 1913.. ..  | 7·05                                  | 7·63                   | 8·95                  | 9·10                 | 7·10                 | 6·09               |
| 1914.. ..  | 7·83                                  | 8·45                   | 12·31                 | 9·45                 | 8·91                 | 6·58               |
| 1915.. ..  | 6·88                                  | 7·99                   | 8·51                  | 7·71                 | 7·04                 | 5·30               |
| 1916.. ..  | 7·46                                  | 8·56                   | 7·93                  | 8·16                 | 7·25                 | 5·97               |
| 1917.. ..  | 5·67                                  | 6·55                   | 7·01                  | 5·62                 | 4·76                 | 4·49               |
| 1918.. ..  | 6·17                                  | 7·09                   | 5·54                  | 5·86                 | 7·16                 | 4·95               |
| 1919.. ..  | 6·80                                  | 7·87                   | 6·04                  | 6·78                 | 8·00                 | 5·38               |
| 1920.. ..  | 7·38                                  | 8·41                   | 9·04                  | 9·57                 | 6·94                 | 5·72               |
| 1921.. ..  | 7·27                                  | 7·40                   | 6·77                  | 10·34                | 7·38                 | 6·90               |

The prejudicial effect of city surroundings on infant life is evidenced by the mortality being heavier in urban than in country districts. On the average of the past five years the deaths of children under 1 year of age to every 1,000 births were 75 in Melbourne, 76 in Bendigo, 69 in Ballarat, and 68 in Geelong, as against 55 in the rest of the State.

In issues of this work prior to 1913 the infantile death rate given for each metropolitan municipality was based upon the deaths therein exclusive of those occurring in public hospitals. This method necessarily understated the mortality for each district, the understatement being greatest in the case of the poorer and more congested areas, which contribute an undue proportion of the hospital cases. In order to ascertain the actual death rate for each area the deaths in hospitals are now allotted to the districts where the deceased had resided. For the period 1910-14 and the years 1920 and 1921 the deaths under 1 year per 100 births for each municipality of Greater Melbourne were as follows:—

INFANTILE DEATH RATES FOR METROPOLITAN MUNICIPALITIES.

| Municipality.      | Deaths under One Year per 100 Births. |       |       | Municipality.      | Deaths under One Year per 100 Births. |       |       |
|--------------------|---------------------------------------|-------|-------|--------------------|---------------------------------------|-------|-------|
|                    | 1910-14.                              | 1920. | 1921. |                    | 1910-14.                              | 1920. | 1921. |
| Coburg Town ..     | 12·03                                 | 9·75  | 9·16  | Oakleigh Borough   | 7·65                                  | 9·00  | 8·37  |
| Port Melb. City .. | 12·00                                 | 10·29 | 9·41  | Prahran City ..    | 7·27                                  | 7·15  | 5·18  |
| Fitzroy City ..    | 11·24                                 | 13·09 | 10·70 | St. Kilda City ..  | 6·38                                  | 8·08  | 5·71  |
| Richmond City ..   | 10·23                                 | 7·06  | 7·19  | Caulfield City ..  | 5·87                                  | 4·01  | 4·33  |
| Preston Shire ..   | 10·01                                 | 14·67 | 4·92  | Essendon City ..   | 5·79                                  | 6·78  | 6·54  |
| Collingwood City   | 9·89                                  | 9·23  | 8·26  | Hawthorn City ..   | 5·72                                  | 6·73  | 5·79  |
| Melbourne City ..  | 9·22                                  | 12·66 | 11·47 | Camberwell City .. | 5·58                                  | 6·21  | 4·57  |
| South Melb. City.. | 9·05                                  | 11·36 | 11·81 | Malvern City ..    | 5·51                                  | 5·02  | 5·97  |
| Brunswick City ..  | 8·50                                  | 10·63 | 5·84  | Northcote City ..  | 5·47                                  | 6·87  | 5·41  |
| Footscray City ..  | 8·11                                  | 9·50  | 7·22  | Kew City ..        | 4·76                                  | 5·78  | 4·88  |
| Williamstown City  | 8·03                                  | 8·79  | 7·03  | Sandringham Town   | ..                                    | 8·54  | 6·98  |
| Brighton City ..   | 7·84                                  | 5·20  | 5·41  |                    |                                       |       |       |

It is noticeable that the centres having the lowest infantile death rates are residential areas which are not so thickly populated as nearly all of the other metropolitan districts.

Deaths of  
infants at  
different  
ages.

Of the deaths of infants under 1 year in 1921, 48 per cent. occurred in the first month and 64 per cent. in the first three months of life. The annual deaths at ages under 1 month, from 1 to 3 months, from 3 to 6 months, and from 6 to 12 months, during the five years ended with 1920, and the numbers for the year 1921, are given in the following table, together with the percentage of deaths at each of those age-periods and the proportion of deaths to each 100 births :—

DEATHS OF INFANTS AT DIFFERENT AGES, 1916-20  
AND 1921.

| Age.          | Average Annual Deaths of Infants under 1 year of Age. |                         |                        |            |                         |                        |
|---------------|---|-------------------------|------------------------|------------|-------------------------|------------------------|
|               | Five Years—1916-20.                                   |                         |                        | Year 1921. |                         |                        |
|               | Number.   | Percentage at each Age. | Number per 100 Births. | Number.    | Percentage at each Age. | Number per 100 Births. |
| <i>Boys.</i>  |   |                         |                        |            |                         |                        |
| Under 1 month | 640   | 50·4                    | 3·73                   | 702        | 47·5                    | 3·84                   |
| 1 to 3 months | 204   | 16·1                    | 1·18                   | 246        | 16·6                    | 1·35                   |
| 3 to 6 „      | 189   | 14·2                    | 1·05                   | 258        | 17·4                    | 1·41                   |
| 6 to 12 „     | 246   | 19·3                    | 1·43                   | 273        | 18·5                    | 1·49                   |
| Total ..      | 1,270   | 100·0                   | 7·39                   | 1,479      | 100·0                   | 8·09                   |
| <i>Girls.</i> |   |                         |                        |            |                         |                        |
| Under 1 month | 487   | 49·5                    | 2·97                   | 535        | 48·4                    | 3·09                   |
| 1 to 3 months | 148   | 15·3                    | ·92                    | 174        | 15·7                    | 1·01                   |
| 3 to 6 „      | 146   | 15·1                    | ·90                    | 173        | 15·6                    | 1·00                   |
| 6 to 12 „     | 195   | 20·1                    | 1·21                   | 225        | 20·3                    | 1·30                   |
| Total ..      | 969   | 100·0                   | 6·00                   | 1,107      | 100·0                   | 6·40                   |

Probable  
mortality of  
infants.

The experience of the years 1916-21 shows that, of every 20,000 newly-born boys and girls in equal numbers, 751 boys and 607 girls died within twelve months, and 9,249 of the former and 9,393 of the latter, or 18,642 of mixed sexes were living at the end of the year. The corresponding numbers surviving the first year in earlier periods were 17,765<sup>A</sup> in the ten years

1891-1900 and 17,468 in 1881-1890. It is thus seen that of every 20,000 births comprising equal numbers of each sex there were 877 more survivors in 1916-21 than in 1891-1900, and 1,174 more than in 1881-1890.

An investigation of infantile mortalities would be incomplete unless the diseases which have proved fatal in different years were 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 1891-3, 1901-10, and 1911-20, and for the year 1921 :—

INFANTILE DEATH RATES FROM CERTAIN CAUSES, 1891-3,  
1901-10, 1911-20, AND 1921.

| Cause of Death.                           | Deaths under 1 year per 1,000 Births in— |          |          |       |
|---|--|----------|----------|-------|
|   | 1891-3.                                  | 1901-10. | 1911-20. | 1921. |
| Diarrhœal Diseases, all forms ... ..      | 29·66                                    | 24·62    | 16·13    | 16·72 |
| Wasting Diseases (Marasmus, Atrophy, &c.) | 22·24                                    | 12·74    | 13·09    | 9·86  |
| Prematurity ... ..                        | 13·13                                    | 14·99    | 15·17    | 16·49 |
| Bronchitis, Broncho-pneumonia, Pneumonia  | 11·37                                    | 8·13     | 6·86     | 6·77  |
| Convulsions ... ..                        | 6·83                                     | 3·10     | 1·63     | 1·43  |
| Congenital Defects and Malformations ...  | 3·45                                     | 4·86     | 4·38     | 4·64  |
| Violence ... ..                           | 3·16                                     | 2·47     | 1·07     | 1·29  |
| Whooping Cough ... ..                     | 2·60                                     | 2·52     | 1·82     | 1·91  |
| Other causes ... ..                       | 24·49                                    | 14·46    | 9·40     | 13·54 |
| Total, all causes ... ..                  | 116·93                                   | 87·89    | 69·55    | 72·65 |

Of every 1,000 infants born 27 died from diarrhœal and wasting diseases in 1921, as against 29 in 1911-20, 37 in 1901-10, and 52 in 1891-3—a decrease of 48 per cent. in 29 years. In 1921 acute bronchitis, broncho-pneumonia and pneumonia were responsible for 6·77 deaths per 1,000 births, as compared with 11·37 in 1891-3—a decline of 40 per cent. between the two periods. Certain causes, which may be regarded as of a non-preventable nature, such as prematurity, congenital defects, and malformations, were responsible for 28 per cent. of the total infantile mortality during the past eleven years

Of the deaths from preventable causes 1 in every 3 is due to diarrhoeal diseases, which are responsible for high death rates in December, January, February, March, and April. On the average of the last ten years, of every 1,000 children born 16 died from diarrhoeal complaints within a year, a proportion which shows the necessity for further preventive measures in relation to these diseases.

The tables which follow show the number of deaths and the death rate of infants under one month for Melbourne and Suburbs and the whole State for the years 1917 to 1921, also the principal causes of death.

#### DEATHS OF INFANTS UNDER ONE MONTH, 1917 to 1921.

| Year.   | Melbourne and Suburbs. |                        | Victoria.      |                        |
|---------|------------------------|------------------------|----------------|------------------------|
|         | No. of Deaths.         | Deaths per 100 Births. | No. of Deaths. | Deaths per 100 Births. |
| 1917 .. | 557                    | 3·24                   | 998            | 3·03                   |
| 1918 .. | 600                    | 3·63                   | 1,026          | 3·25                   |
| 1919 .. | 652                    | 3·99                   | 1,163          | 3·68                   |
| 1920 .. | 733                    | 3·80                   | 1,270          | 3·51                   |
| 1921 .. | 678                    | 3·67                   | 1,237          | 3·48                   |

#### DEATHS OF INFANTS UNDER ONE MONTH FROM CERTAIN CAUSES, 1917 to 1921.

| Cause of Death.                                  | Melbourne and Suburbs. |       |       |       |       | Victoria. |       |       |       |       |
|--|------------------------|-------|-------|-------|-------|-----------|-------|-------|-------|-------|
|  | 1917.                  | 1918. | 1919. | 1920. | 1921. | 1917.     | 1918. | 1919. | 1920. | 1921. |
| Diarrhoeal Diseases (all forms)                  | 12                     | 17    | 17    | 7     | 11    | 26        | 28    | 32    | 18    | 26    |
| Wasting Diseases (Marasmus, Atrophy, etc.)       | 89                     | 115   | 103   | 120   | 78    | 185       | 199   | 203   | 228   | 182   |
| Prematurity .. .. .                              | 240                    | 271   | 308   | 361   | 322   | 424       | 459   | 537   | 583   | 548   |
| Bronchitis, Broncho - Pneumonia and Pneumonia .. | 18                     | 24    | 16    | 18    | 23    | 27        | 44    | 29    | 33    | 37    |
| Convulsions .. .. .                              | 11                     | 9     | 13    | 11    | 16    | 30        | 21    | 22    | 24    | 37    |
| Congenital Defects and Malformations .. .. .     | 59                     | 44    | 48    | 65    | 73    | 90        | 80    | 97    | 128   | 123   |
| Violence .. .. .                                 | 10                     | 8     | 11    | 16    | 12    | 14        | 12    | 15    | 21    | 18    |
| Syphilis .. .. .                                 | 8                      | 6     | 4     | 8     | 2     | 8         | 9     | 4     | 8     | 4     |
| Other Causes .. .. .                             | 110                    | 106   | 132   | 127   | 141   | 194       | 174   | 224   | 227   | 262   |

Legitimate and  
illegitimate  
Infantile  
death rates.

On the average of the past nine years, 170 in every 1,000 illegitimate infants died within a year, as against 63 in every 1,000 legitimate children. It is thus seen that the proportion of illegitimate children dying before the age of 1 year is nearly three times that of legitimate children. In the year 1921 the mortality rate for legitimate infants was 6·80 per 100 births. The children born out of wedlock during the same year numbered 1,714, and the deaths of illegitimate infants were 308, the death rate being thus 16·51 per 100 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 deaths from certain causes per 1,000 legitimate and illegitimate births for the periods 1904-8 and 1913-20 and for the year 1921 :—

#### DEATH RATES OF LEGITIMATE AND ILLEGITIMATE INFANTS FROM CERTAIN CAUSES.

| Cause of Death.  | Deaths under 1 year per 1,000 Births. |          |       |               |          |       |
|--|---------------------------------------|----------|-------|---------------|----------|-------|
|  | Legitimate.                           |          |       | Illegitimate. |          |       |
|  | 1904-8.                               | 1913-20. | 1921. | 1904-8.       | 1913-20. | 1921. |
| Diarrhoeal Diseases ... ..                               | 19·8                                  | 13·5     | 15·2  | 72·6          | 48·7     | 47·3  |
| Prematurity, Congenital Defects,<br>Marasmus, &c. ... .. | 30·3                                  | 31·1     | 29·3  | 52·1          | 69·8     | 64·7  |
| Bronchitis, Broncho-pneumonia,<br>Pneumonia ... ..       | 6·9                                   | 6·0      | 6·4   | 18·6          | 13·0     | 14·0  |
| Other causes ... ..                                      | 18·3                                  | 12·3     | 17·1  | 58·7          | 39·4     | 39·1  |
| Total all causes ... ..                                  | 75·3                                  | 62·9     | 68·0  | 202·0         | 170·9    | 165·1 |

The rates for 1921 show that of every 1,000 children born out of wedlock 47·3 died from diarrhoeal diseases within a year as compared with 15·2 deaths per 1,000 legitimate 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 legitimate 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 illegitimate infants.

Infantile  
deaths in  
each month  
from certain  
causes.

The influence of temperature on infantile mortality from the chief digestive and respiratory diseases is specially noticeable, whilst on deaths from other causes, particularly those of a developmental character, very little influence is apparent. The deaths in Melbourne and suburbs from the two former classes of complaint in each month during the past five years are shown in the appended table :—

### INFANTILE DEATHS IN EACH MONTH FROM CERTAIN CAUSES.

| Month.            | Infantile Deaths in Greater Melbourne in 1917-21 from— |          |        |                       |          |        |
|-------------------|--|----------|--------|-----------------------|----------|--------|
|                   | Diarrhoeal Diseases.                                   |          |        | Respiratory Diseases. |          |        |
|                   | Males.   | Females. | Total. | Males.                | Females. | Total. |
| January .. ..     | 158  | 127      | 285    | 24                    | 16       | 40     |
| February .. ..    | 119  | 86       | 205    | 17                    | 12       | 29     |
| March .. ..       | 111  | 84       | 195    | 21                    | 14       | 35     |
| April .. ..       | 68   | 66       | 134    | 19                    | 10       | 29     |
| May .. ..         | 42   | 47       | 89     | 33                    | 20       | 53     |
| June .. ..        | 25   | 14       | 39     | 33                    | 29       | 62     |
| July .. ..        | 22   | 16       | 38     | 53                    | 40       | 93     |
| August .. ..      | 18   | 12       | 30     | 50                    | 38       | 88     |
| September .. ..   | 18   | 8        | 26     | 51                    | 40       | 91     |
| October .. ..     | 17   | 7        | 24     | 32                    | 30       | 62     |
| November .. ..    | 40   | 28       | 68     | 23                    | 26       | 49     |
| December .. ..    | 104  | 85       | 189    | 27                    | 24       | 51     |
| Total, 1917-21 .. | 742  | 580      | 1,322  | 383                   | 299      | 682    |

The experience of the last five years shows that of the total infantile deaths in the metropolis from diarrhoeal diseases 76 per cent. occur during the five months December to April, and of the deaths from respiratory diseases 49 per cent. occur in the four months June to September.

The deaths of infants under 1 year of age in the Commonwealth numbered 8,952 in 1921 as compared with 9,431 in the previous year, 8,486 in 1919, 7,366 in 1918, 7,302 in 1917, 9,282 in 1916 and 9,126 in 1915. The next table gives the pro-

Infantile  
mortality in  
Australasia.

portion of such deaths to the total births in each Australian State and New Zealand for each of the last ten years, and for earlier periods back to 1891 :—

### INFANTILE MORTALITY IN AUSTRALASIA.

| Period.      | Deaths under 1 year per 100 Births. |                  |             |                  |                    |           |              |
|--------------|-------------------------------------|------------------|-------------|------------------|--------------------|-----------|--------------|
|              | Victoria.                           | New South Wales. | Queensland. | South Australia. | Western Australia. | Tasmania. | New Zealand. |
| 1891-1900 .. | 11·11                               | 11·22            | 10·34       | 10·54            | 14·48              | 9·58      | 8·38         |
| 1902-6 ..    | 9·38                                | 9·27             | 8·93        | 8·21             | 12·21              | 9·02      | 7·29         |
| 1907-11 ..   | 7·51                                | 7·66             | 6·98        | 6·56             | 8·29               | 7·97      | 6·85         |
| 1912 ..      | 7·45                                | 7·13             | 7·16        | 6·16             | 8·21               | 6·66      | 5·12         |
| 1913 ..      | 7·05                                | 7·83             | 6·33        | 7·01             | 7·00               | 7·01      | 5·92         |
| 1914 ..      | 7·83                                | 6·97             | 6·39        | 7·60             | 6·82               | 7·16      | 5·14         |
| 1915 ..      | 6·88                                | 6·81             | 6·40        | 6·73             | 6·66               | 7·22      | 5·01         |
| 1916 ..      | 7·46                                | 6·78             | 7·04        | 7·36             | 6·63               | 7·50      | 5·07         |
| 1917 ..      | 5·67                                | 5·75             | 5·42        | 5·37             | 5·71               | 5·23      | 4·82         |
| 1918 ..      | 6·17                                | 5·90             | 5·69        | 5·12             | 5·73               | 6·08      | 4·84         |
| 1919 ..      | 6·80                                | 7·23             | 7·24        | 6·40             | 6·13               | 6·46      | 4·53         |
| 1920 ..      | 7·38                                | 6·94             | 6·32        | 6·73             | 6·60               | 6·55      | 5·06         |
| 1921 ..      | 7·27                                | 6·26             | 5·42        | 6·55             | 7·83               | 7·80      | 4·78         |

The infantile deaths per 100 births in the Australasian capitals in 1921 were as follows :—Melbourne 7·40, Sydney 6·24, Brisbane 6·18, Adelaide 7·36, Perth 8·05, Hobart 7·52 and Wellington 6·09.

In 1921 the deaths of male children under 5 years of age numbered 1,873, and the deaths of female children under that age, 1,456—the former being in the proportion of 21·62 per cent., and the latter of 19·41 per cent., to the total number of deaths of the respective sexes at all ages. The subjoined table gives the annual number of such deaths in the State at each year of age, and the proportion of the deaths under five years of age to the

**Deaths of children under 5.**

deaths at all ages in decennial periods from 1871 to 1910, and in the years 1911 to 1921.

### MORTALITY OF CHILDREN UNDER FIVE YEARS.

| Period.         | Years of Age at Death. |     |     |     |     | Total under 5 Years. |  |
|-----------------|------------------------|-----|-----|-----|-----|----------------------|--|
|                 | 0.                     | 1.  | 2.  | 3.  | 4.  | Number.              | Proportion Per 100 Deaths at all Ages. |
| <i>Males.</i>   |                        |     |     |     |     |                      |  |
| 1871-1880..     | 1,783                  | 508 | 206 | 148 | 119 | 2,764                | 39·41                                  |
| 1881-1890..     | 2,158                  | 464 | 161 | 114 | 92  | 2,989                | 34·28                                  |
| 1891-1900..     | 2,050                  | 432 | 143 | 93  | 76  | 2,794                | 30·05                                  |
| 1901-1910..     | 1,504                  | 249 | 83  | 59  | 41  | 1,936                | 22·93                                  |
| 1911 ..         | 1,309                  | 201 | 71  | 58  | 42  | 1,681                | 20·12                                  |
| 1912 ..         | 1,515                  | 266 | 96  | 66  | 51  | 1,994                | 21·97                                  |
| 1913 ..         | 1,419                  | 241 | 83  | 55  | 41  | 1,839                | 21·65                                  |
| 1914 ..         | 1,634                  | 291 | 110 | 70  | 43  | 2,148                | 23·82                                  |
| 1915 ..         | 1,401                  | 200 | 82  | 60  | 46  | 1,789                | 20·19                                  |
| 1916 ..         | 1,403                  | 246 | 100 | 77  | 57  | 1,883                | 21·15                                  |
| 1917 ..         | 1,099                  | 176 | 71  | 59  | 38  | 1,443                | 18·15                                  |
| 1918 ..         | 1,102                  | 188 | 85  | 51  | 52  | 1,478                | 18·29                                  |
| 1919 ..         | 1,208                  | 223 | 101 | 63  | 58  | 1,653                | 15·73                                  |
| 1920 ..         | 1,540                  | 294 | 118 | 84  | 54  | 2,090                | 23·01                                  |
| 1921 ..         | 1,479                  | 213 | 86  | 50  | 45  | 1,873                | 21·62                                  |
| <i>Females.</i> |                        |     |     |     |     |                      |  |
| 1871-1880..     | 1,482                  | 482 | 198 | 139 | 106 | 2,407                | 46·06                                  |
| 1881-1890..     | 1,805                  | 423 | 151 | 105 | 84  | 2,568                | 39·61                                  |
| 1891-1900..     | 1,702                  | 385 | 129 | 82  | 68  | 2,366                | 33·61                                  |
| 1901-1910..     | 1,192                  | 217 | 81  | 51  | 40  | 1,581                | 23·58                                  |
| 1911 ..         | 961                    | 149 | 73  | 50  | 41  | 1,274                | 18·57                                  |
| 1912 ..         | 1,154                  | 217 | 76  | 57  | 52  | 1,556                | 20·70                                  |
| 1913 ..         | 1,119                  | 191 | 67  | 47  | 35  | 1,459                | 20·91                                  |
| 1914 ..         | 1,202                  | 235 | 74  | 67  | 46  | 1,624                | 21·69                                  |
| 1915 ..         | 1,009                  | 188 | 60  | 64  | 42  | 1,363                | 19·57                                  |
| 1916 ..         | 1,150                  | 215 | 81  | 53  | 54  | 1,553                | 20·47                                  |
| 1917 ..         | 774                    | 118 | 64  | 52  | 35  | 1,043                | 15·80                                  |
| 1918 ..         | 848                    | 165 | 69  | 66  | 55  | 1,203                | 16·95                                  |
| 1919 ..         | 942                    | 169 | 73  | 64  | 64  | 1,312                | 14·80                                  |
| 1920 ..         | 1,133                  | 258 | 103 | 67  | 64  | 1,625                | 20·91                                  |
| 1921 ..         | 1,107                  | 183 | 73  | 36  | 57  | 1,456                | 19·41                                  |

The number of persons of advanced ages was greater in the later than in the earlier years mentioned in the above table, and, as the mortality is very heavy at the older ages, this accounts to some extent for the gradual decrease in the proportion of deaths under the age of 5 years. After making allowance for this there is still a marked reduction in the mortality under 5 years of age in recent years as compared with that in periods prior to 1901.

Ages at death.

The ages of males and females who died in 1921 and in the two preceding years are shown in the following table:—

AGES AT DEATH IN VICTORIA, 1919 TO 1921.

| Ages.      | 1919.  |          |        | 1920.  |          |        | 1921.  |          |        |
|------------|--------|----------|--------|--------|----------|--------|--------|----------|--------|
|            | Males. | Females. | Total. | Males. | Females. | Total. | Males. | Females. | Total. |
| Under 1 .. | 1,208  | 942      | 2,150  | 1,540  | 1,133    | 2,673  | 1,479  | 1,107    | 2,586  |
| 1 to 2     | 223    | 169      | 392    | 294    | 258      | 552    | 213    | 183      | 396    |
| 2 ,, 3     | 101    | 73       | 174    | 118    | 103      | 221    | 86     | 73       | 159    |
| 3 ,, 4     | 63     | 64       | 127    | 84     | 67       | 151    | 50     | 36       | 86     |
| 4 ,, 5     | 58     | 64       | 122    | 54     | 64       | 118    | 45     | 57       | 102    |
| 5 ,, 10    | 197    | 170      | 367    | 194    | 208      | 402    | 174    | 152      | 326    |
| 10 ,, 15   | 129    | 118      | 247    | 112    | 103      | 215    | 125    | 82       | 207    |
| 15 ,, 20   | 239    | 203      | 442    | 153    | 119      | 272    | 130    | 151      | 281    |
| 20 ,, 25   | 360    | 364      | 724    | 195    | 199      | 394    | 201    | 219      | 420    |
| 25 ,, 30   | 587    | 511      | 1,098  | 233    | 276      | 509    | 228    | 260      | 488    |
| 30 ,, 35   | 641    | 488      | 1,129  | 225    | 264      | 489    | 227    | 274      | 501    |
| 35 ,, 40   | 552    | 465      | 1,017  | 262    | 264      | 526    | 302    | 284      | 586    |
| 40 ,, 45   | 515    | 393      | 908    | 279    | 276      | 555    | 315    | 283      | 598    |
| 45 ,, 50   | 576    | 457      | 1,033  | 394    | 297      | 691    | 404    | 298      | 702    |
| 50 ,, 55   | 684    | 522      | 1,206  | 495    | 354      | 849    | 498    | 398      | 896    |
| 55 ,, 60   | 697    | 540      | 1,237  | 698    | 438      | 1,136  | 644    | 446      | 1,090  |
| 60 ,, 65   | 693    | 553      | 1,246  | 746    | 487      | 1,233  | 777    | 549      | 1,326  |
| 65 ,, 70   | 680    | 497      | 1,177  | 626    | 465      | 1,091  | 650    | 496      | 1,146  |
| 70 ,, 75   | 612    | 508      | 1,120  | 604    | 543      | 1,147  | 588    | 531      | 1,119  |
| 75 ,, 80   | 650    | 633      | 1,283  | 627    | 677      | 1,304  | 568    | 579      | 1,147  |
| 80 ,, 85   | 504    | 603      | 1,107  | 553    | 575      | 1,128  | 471    | 522      | 993    |
| 85 ,, 90   | 410    | 358      | 768    | 384    | 410      | 794    | 350    | 358      | 708    |
| 90 ,, 95   | 107    | 129      | 236    | 165    | 151      | 316    | 114    | 132      | 246    |
| 95 ..      | 9      | 15       | 24     | 5      | 10       | 15     | 7      | 9        | 16     |
| 96 ..      | 8      | 6        | 14     | 5      | 10       | 15     | 7      | 7        | 14     |
| 97 ..      | 2      | 7        | 9      | 4      | 4        | 8      | 2      | 9        | 11     |
| 98 ..      | 1      | 4        | 5      | 3      | 7        | 10     | 4      | 3        | 7      |
| 99 ..      | ..     | 4        | 4      | 4      | 6        | 10     | 1      | 4        | 5      |
| 100 ..     | 1      | 1        | 2      | 1      | 2        | 3      | 1      | ..       | 1      |
| 101 ..     | 1      | 1        | 2      | ..     | 2        | 2      | ..     | 1        | 1      |
| 102 ..     | ..     | ..       | ..     | 1      | ..       | 1      | ..     | ..       | ..     |
| 103 ..     | ..     | ..       | ..     | 1      | ..       | 1      | 1      | ..       | 1      |
| 105 ..     | ..     | ..       | ..     | 1      | ..       | 1      | ..     | ..       | ..     |
| Total ..   | 10,508 | 8,862    | 19,370 | 9,060  | 7,772    | 16,832 | 8,662  | 7,503    | 16,165 |

Of the 52,367 persons who died in Victoria during the last three years, 6,478 were aged 80 years and upwards, and 15—eight males and seven females—had attained or passed the age of 100 years

The highest age at death recorded in the period 1919-21 was 105 years, which was attained by one man. To every 100 female deaths there were 115 male deaths in 1921 as against 117 in the previous year, 119 in 1919, and 114 in 1918.

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

## DEATHS PER MILLION FROM CERTAIN CAUSES.

| Cause of Death.   | Deaths per Million of the Population. |       |       |       |       |       |
|---|---------------------------------------|-------|-------|-------|-------|-------|
|   | 1908-1912.                            | 1917. | 1918. | 1919. | 1920. | 1921. |
| Typhoid Fever .. .. .   | 98                                    | 45    | 32    | 21    | 37    | 46    |
| Scarlet Fever .. .. .   | 16                                    | 23    | 28    | 24    | 24    | 12    |
| Measles .. .. .   | 33                                    | 11    | 5     | 17    | 146   | 4     |
| Whooping Cough .. .. .  | 77                                    | 51    | 47    | 24    | 125   | 63    |
| Diphtheria and Croup .. .. .  | 122                                   | 110   | 149   | 144   | 183   | 179   |
| Influenza .. .. .   | 109                                   | 47    | 148   | 2,407 | 52    | 88    |
| Hydatids .. .. .  | 22                                    | 14    | 21    | 18    | 13    | 14    |
| Cancer .. .. .  | 833                                   | 925   | 942   | 870   | 908   | 954   |
| Phthisis .. .. .  | 855                                   | 677   | 701   | 739   | 658   | 667   |
| Other Tubercular Diseases .. .. .   | 182                                   | 163   | 144   | 126   | 145   | 137   |
| Syphilis .. .. .  | 51                                    | 48    | 42    | 40    | 46    | 36    |
| Diabetes .. .. .  | 107                                   | 120   | 146   | 134   | 126   | 136   |
| Anæmia, Chlorosis, Leucæmia .. .. .   | 81                                    | 97    | 90    | 93    | 90    | 104   |
| Simple Meningitis .. .. .   | 133                                   | 51    | 52    | 42    | 54    | 64    |
| Cerebro-Spinal Meningitis .. .. .   | ..                                    | 53    | 26    | 10    | 10    | 11    |
| Infantile Paralysis .. .. .   | ..                                    | 4     | 15    | 2     | 3     | 3     |
| Locomotor Ataxia and other diseases of Spinal Cord .. .. .                        | 71                                    | 58    | 88    | 78    | 45    | 52    |
| Congestion and Hæmorrhage of the Brain .. .. .                                    | 449                                   | 437   | 427   | 438   | 472   | 472   |
| Epilepsy .. .. .  | 35                                    | 42    | 40    | 38    | 31    | 34    |
| Convulsions .. .. .   | 76                                    | 43    | 49    | 55    | 45    | 47    |
| Heart Disease (including Endocarditis, Pericarditis, and Angina Pectoris) .. .. . | 1,441                                 | 1,442 | 1,400 | 1,402 | 1,287 | 1,267 |
| Acute and Chronic Bronchitis .. .. .  | 348                                   | 201   | 233   | 284   | 273   | 222   |
| Pneumonia and Broncho-pneumonia .. .. .   | 834                                   | 656   | 694   | 904   | 801   | 676   |
| Pleurisy .. .. .  | 45                                    | 40    | 32    | 42    | 23    | 35    |
| Congestion of Lungs and Pulmonary Apoplexy .. .. .                                | 63                                    | 57    | 56    | 51    | 84    | 59    |
| Asthma and Pulmonary Emphysema .. .. .  | 60                                    | 48    | 51    | 49    | 41    | 22    |
| Enteritis, Gastro-enteritis, and Diarrhoeal Diseases .. .. .                      | 833                                   | 408   | 504   | 501   | 639   | 657   |
| Hernia, Intestinal Obstruction .. .. .  | 113                                   | 104   | 115   | 111   | 118   | 100   |
| Diseases of the Stomach (Cancer excepted) .. .. .                                 | 99                                    | 83    | 83    | 98    | 106   | 79    |

DEATHS PER MILLION FROM CERTAIN CAUSES—*continued.*

| Cause of Death.  | Deaths per Million of the Population. |       |       |       |       |       |
|--|---------------------------------------|-------|-------|-------|-------|-------|
|  | 1908-1912.                            | 1917. | 1918. | 1919. | 1920. | 1921. |
| Cirrhosis and other diseases of the Liver (Cancer excepted) .. | 158                                   | 110   | 112   | 91    | 96    | 99    |
| Biliary Calculi .. .. .  | 27                                    | 27    | 32    | 27    | 31    | 25    |
| Appendicitis .. .. .   | 81                                    | 62    | 66    | 61    | 63    | 57    |
| Simple Peritonitis (non-puerperal)..                           | 35                                    | 30    | 35    | 31    | 28    | 24    |
| Acute and Chronic Nephritis, Uræmia, Bright's Disease .. ..    | 576                                   | 568   | 586   | 510   | 540   | 516   |
| Diseases of the Bladder and Prostate                           | 94                                    | 94    | 97    | 88    | 82    | 57    |
| Calculi of the Urinary System ..                               | 7                                     | 5     | 6     | 6     | 6     | 8     |
| Old Age .. .. .  | 1,030                                 | 1,056 | 1,002 | 1,082 | 1,019 | 873   |
| Suicide .. .. .  | 102                                   | 88    | 72    | 89    | 95    | 95    |
| Accidental Violence .. .. .                                    | 531                                   | 417   | 408   | 424   | 451   | 452   |
| Homicide .. .. .   | 19                                    | 13    | 13    | 18    | 12    | 14    |

The above and other causes of death are fully dealt with in subsequent paragraphs.

**Vaccinations.** The proportion of successful vaccinations to every 100 births for the period 1876-1899, and for each year since, is given in the following table. A great reduction in the percentage of vaccinations to births is shown for the year 1921. This is due to a large number of persons having taken advantage of the "Conscience Clause" of the Health Act of 1919 which came into operation on 24th March, 1920.

## SUCCESSFUL VACCINATIONS PER 100 BIRTHS.

| Period.       | Vaccinations per 100 births. | Period.  | Vaccinations per 100 births. |
|---------------|------------------------------|----------|------------------------------|
| 1876-1899 ... | 72                           | 1911 ... | 62                           |
| 1900 ...      | 67                           | 1912 ... | 60                           |
| 1901 ...      | 62                           | 1913 ... | 69                           |
| 1902 ...      | 53                           | 1914 ... | 65                           |
| 1903 ...      | 71                           | 1915 ... | 69                           |
| 1904 ...      | 69                           | 1916 ... | 61                           |
| 1905 ...      | 67                           | 1917 ... | 60                           |
| 1906 ...      | 67                           | 1918 ... | 48                           |
| 1907 ...      | 67                           | 1919 ... | 44                           |
| 1908 ...      | 67                           | 1920 ... | 12                           |
| 1909 ...      | 68                           | 1921 ... | 11                           |
| 1910 ...      | 69                           |          |                              |

In 1921 the vaccinations of children were equal to 11 per cent. of the births, as compared with 12 per cent. in the preceding year, 44

per cent. in 1919, 64 per cent. in the period 1900-1918, and 72 per cent. in the period 1876-1899.

**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 1921 only 31 deaths occurred from this cause, and of that number only 8 took place in the last thirty-seven years of the period.

**Typhoid  
fever.**

The reported cases of typhoid fever for the whole State declined from 288 per 100,000 of population in 1895-9 to 53 per 100,000 in 1914-18, and 27 per 100,000 in 1919-21, or by 91 per cent. in the intervening years. The death rate from the disease decreased by 90 per cent. during the same period. The deaths per 100 cases in 1921 were 13·3 as compared with 10·7 in 1914-18. The reported cases of, and deaths from typhoid fever and their proportions to the population, also the percentage of cases that ended fatally, are given in the next table for periods back to 1890 :—

TYPHOID FEVER IN VICTORIA, 1890 TO 1921.

| Period.      | Annual Cases Reported. |                            | Annual Deaths. |                            | Deaths per 100 reported Cases. |
|--------------|------------------------|----------------------------|----------------|----------------------------|--------------------------------|
|              | Number.                | Per 100,000 of Population. | Number.        | Per 100,000 of Population. |                                |
| 1890-4 .. .. | 2,932                  | 253·9                      | 381            | 33·0                       | 13·0                           |
| 1895-9 .. .. | 3,397                  | 288·4                      | 355            | 30·1                       | 10·4                           |
| 1900-4 .. .. | 2,152                  | 178·1                      | 213            | 17·6                       | 9·9                            |
| 1905-9 .. .. | 1,569                  | 125·4                      | 135            | 10·8                       | 8·6                            |
| 1910 .. ..   | 2,124                  | 163·5                      | 139            | 10·7                       | 6·5                            |
| 1911 .. ..   | 1,303                  | 98·6                       | 95             | 7·2                        | 7·3                            |
| 1912 .. ..   | 1,122                  | 82·8                       | 98             | 7·2                        | 8·7                            |
| 1913 .. ..   | 1,127                  | 80·9                       | 95             | 6·8                        | 8·4                            |
| 1914 .. ..   | 1,195                  | 84·0                       | 106            | 7·4                        | 8·9                            |
| 1915 .. ..   | 958                    | 67·2                       | 86             | 6·0                        | 9·0                            |
| 1916 .. ..   | 727                    | 51·6                       | 72             | 5·1                        | 9·9                            |
| 1917 .. ..   | 511                    | 36·4                       | 64             | 4·5                        | 12·5                           |
| 1918 .. ..   | 354                    | 25·0                       | 46             | 3·2                        | 13·0                           |
| 1919 .. ..   | 263                    | 17·9                       | 31             | 2·1                        | 11·8                           |
| 1920 .. ..   | 433                    | 28·8                       | 55             | 3·7                        | 12·7                           |
| 1921 .. ..   | 532                    | 34·6                       | 71             | 4·6                        | 13·3                           |

The death rate from typhoid fever for Victoria is only about one-half of that for the Commonwealth.

The cases of, and deaths from typhoid fever in proportion to population, in Greater Melbourne, are given in the subjoined table for different periods during the past thirty-two years:—

**TYPHOID FEVER IN THE METROPOLIS, 1890 TO 1921.**

| Period.      | Annual Cases Reported. |                            | Annual Deaths. |                            |
|--------------|------------------------|----------------------------|----------------|----------------------------|
|              | Number.                | Per 100,000 of Population. | Number.        | Per 100,000 of Population. |
| 1890-4 .. .. | 1,645                  | 349.3                      | 205            | 43.5                       |
| 1895-9 .. .. | 1,510                  | 327.6                      | 156            | 33.8                       |
| 1900-4 .. .. | 701                    | 140.0                      | 74             | 14.8                       |
| 1905-9 .. .. | 466                    | 86.7                       | 49             | 9.1                        |
| 1910 .. ..   | 689                    | 118.5                      | 52             | 8.9                        |
| 1911 .. ..   | 368                    | 61.9                       | 34             | 5.7                        |
| 1912 .. ..   | 272                    | 44.3                       | 29             | 4.7                        |
| 1913 .. ..   | 282                    | 44.1                       | 29             | 4.5                        |
| 1914 .. ..   | 312                    | 47.1                       | 38             | 5.7                        |
| 1915 .. ..   | 197                    | 29.0                       | 27             | 4.0                        |
| 1916 .. ..   | 162                    | 23.5                       | 23             | 3.3                        |
| 1917 .. ..   | 130                    | 18.5                       | 17             | 2.4                        |
| 1918 .. ..   | 87                     | 12.2                       | 16             | 2.2                        |
| 1919 .. ..   | 64                     | 8.7                        | 12             | 1.6                        |
| 1920 .. ..   | 128                    | 17.0                       | 13             | 1.7                        |
| 1921 .. ..   | 119                    | 15.1                       | 29             | 3.7                        |

The cases of, and deaths from typhoid fever in proportion to population declined by 96 and 90 per cent. respectively in Greater Melbourne between 1890-9 and 1921. The introduction and extension of the sewerage system coincide closely with, and in a large measure account for this great improvement.

The number of cases of typhoid fever during each of the last five years in five divisions of the State, and their proportions to the respective populations for the period 1910-19 and the years 1920 and 1921, are given in the following table:—

**PREVALENCE OF TYPHOID FEVER.**

| Area.                | Reported Cases of Typhoid Fever. |       |       |       |       | Annual Cases per 10 000 of Population. |       |       |
|----------------------|----------------------------------|-------|-------|-------|-------|--|-------|-------|
|                      | 1917.                            | 1918. | 1919. | 1920. | 1921. | 1910-19.                               | 1920. | 1921. |
| Greater Melbourne .. | 130                              | 87    | 64    | 128   | 119   | 4.1                                    | 1.7   | 1.5   |
| Ballarat and Suburbs | 5                                | 11    | 16    | 12    | 52    | 13.4                                   | 3.0   | 13.5  |
| Bendigo and Suburbs  | 31                               | 21    | 11    | 9     | 24    | 18.2                                   | 2.6   | 7.2   |
| Geelong and Suburbs  | 8                                | 3     | 5     | 10    | 35    | 9.0                                    | 2.9   | 9.7   |
| Rest of the State .. | 337                              | 232   | 167   | 274   | 302   | 8.9                                    | 4.3   | 4.7   |

Prevalence of typhoid fever in the Metropolis.

Prevalence of typhoid fever in different areas.

The cases in proportion to population were fewer by 63 per cent. in Greater Melbourne, 60 per cent. in Bendigo, and 47 per cent. in the rest of the State, and greater by 7 per cent. in Ballarat and 8 per cent. in Geelong in 1921 than in the period 1910-19.

Death rates  
from typhoid  
fever at  
different ages.

The mortality from typhoid fever is higher at early adult and middle ages than at other periods of life, and higher among males than females. This is shown in the next table, which gives the death rates in age groups for each sex in the years 1900-2, 1910-12, and 1919-21, being the years adjoining the censuses of 1901, 1911, and 1921 :—

DEATH RATES FROM TYPHOID FEVER, 1900-2, 1910-12,  
AND 1919-21.

| Age Group.        | Deaths per 10,000 of each Sex. |          |          |          |          |          |
|-------------------|--------------------------------|----------|----------|----------|----------|----------|
|                   | Males.                         |          |          | Females. |          |          |
|                   | 1900-2.                        | 1910-12. | 1919-21. | 1900-2.  | 1910-12. | 1919-21. |
| 0-15 .. ..        | 0·97                           | 0·38     | 0·09     | 1·46     | 0·44     | 0·27     |
| 15-20 .. ..       | 2·65                           | 1·76     | 0·45     | 2·23     | 1·22     | 0·46     |
| 20-25 .. ..       | 4·39                           | 1·82     | 0·80     | 1·84     | 1·32     | 0·59     |
| 25-35 .. ..       | 3·28                           | 1·71     | 0·41     | 2·04     | 0·82     | 0·38     |
| 35-45 .. ..       | 2·25                           | 1·26     | 0·52     | 1·21     | 0·68     | 0·39     |
| 45-55 .. ..       | 1·95                           | 0·82     | 0·63     | 0·93     | 0·39     | 0·12     |
| 55-65 .. ..       | 0·66                           | 0·20     | 0·48     | 0·34     | 0·50     | 0·16     |
| 65 and over .. .. | ..                             | 0·10     | ..       | 0·23     | 0·19     | ..       |
| All ages .. ..    | 1·95                           | 1·00     | 0·37     | 1·49     | 0·69     | 0·31     |

The experience of the three census periods mentioned shows that the rate for males exceeds that for females by 33 per cent., and that the heaviest mortality occurs between the ages 15 and 35. It is notable that at each census period there were proportionately fewer deaths of boys than of girls under the age of 15.

**Scarlet fever.** In 1921 the deaths from scarlet fever numbered 19, which corresponded to a rate of 12 per million of the population, as compared with rates of 24 in 1920 and 1919, 28 in 1918, 23 in 1917, 21 in 1916, 8 in 1915, slightly over 1 in 1914, and 34 in 1890-2. During 1921 there were 2,816 cases reported as against 2,259 in the previous year, 1,763 in 1919, 2,572 in 1918, and 1,994 in

1917. For the five years mentioned the deaths were equal to 1·3 per cent. of the cases. According to the experience of the past ten years the chance of dying from the disease is 89 per cent. greater for females than for males

**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 1921 there were 6 deaths attributed to this cause, representing a rate of 4 per million of the population, as compared with rates of 146 in the previous year, 17 in 1919, 5 in 1918, 11 in 1917, 13 in 1916, 22 in 1915, 74 in 1914, 32 in 1913, and 64 in 1912.

On the average of the five years 1910 to 1914, 47 per cent. of those who died from the disease were under 2 years of age and 75 per cent. were under 5 years. The incidence of mortality at various ages for each sex for the period 1910-14 was as follows:—

| Sex.    | Annual Deaths from Measles per 10,000 of each Sex aged— |         |         |         |         |          |           |           |              |           |
|---------|---|---------|---------|---------|---------|----------|-----------|-----------|--------------|-----------|
|         | 0 to 1.   | 1 to 2. | 2 to 3. | 3 to 4. | 4 to 5. | 5 to 10. | 10 to 15. | 15 to 20. | 20 and over. | All Ages. |
| Males   | 4·02  | 7·41    | 4·39    | 2·04    | 0·97    | 0·73     | 0·06      | 0·03      | 0·06         | 0·55      |
| Females | 4·34  | 4·92    | 2·44    | 1·96    | 1·00    | 0·72     | 0·06      | 0·06      | 0·10         | 0·46      |

**Whooping cough.** There were 97 deaths referred to whooping cough in 1921, which equalled a rate of 63 per million of the population at all ages, as compared with rates of 125 in the previous year, 24 in 1919, 47 in 1918, 51 in 1917, 84 in 1916, 68 in 1915, 69 in 1914, 71 in 1913, and 115 in 1912. 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 68 of the deaths were of infants under 1 year, and, with the exception of 5, all the deaths were of children less than 5 years of age. On the average of the past ten years the mortality rate from the disease was 28 per cent. higher among girls than boys.

**Diphtheria.** The prevalence of diphtheria throughout the State during the past ten years was the most unsatisfactory feature of the statistics of sickness relating to that period. For the year 1921 the number of cases was 9,458 as against a yearly average

of 5,161 in 1911-20, 1,410 in 1905-9, 1,680 in 1900-4, and 1,584 in 1895-9. On the other hand, a very great reduction took place from period to period in the proportion of cases which ended fatally. The case mortality rate was 4·3 per cent. in 1920 as compared with 4·6 per cent. in 1912-16, 6·3 per cent. in 1905-9, 9·5 per cent. in 1900-4, and 13·9 per cent. in 1895-9.

The appended table shows for the whole State and the metropolis 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 1921.

| Period.            | Annual Cases Reported. |                                  | Annual Deaths. |                                  | Deaths per<br>100 Cases<br>Reported. |
|--------------------|------------------------|----------------------------------|----------------|----------------------------------|--------------------------------------|
|                    | Number.                | Per 100,000<br>of<br>Population. | Number.        | Per 100,000<br>of<br>Population. |                                      |
| VICTORIA.          |                        |                                  |                |                                  |                                      |
| 1895-9 .. ..       | 1,584                  | 134·6                            | 221            | 18·8                             | 13·9                                 |
| 1900-4 .. ..       | 1,680                  | 139·0                            | 159            | 13·2                             | 9·5                                  |
| 1905-9 .. ..       | 1,410                  | 112·6                            | 89             | 7·1                              | 6·3                                  |
| 1910 .. ..         | 2,415                  | 185·9                            | 112            | 8·6                              | 4·6                                  |
| 1911 .. ..         | 5,120                  | 387·5                            | 237            | 17·9                             | 4·6                                  |
| 1912 .. ..         | 5,289                  | 390·5                            | 257            | 19·0                             | 4·9                                  |
| 1913 .. ..         | 5,367                  | 385·2                            | 245            | 17·6                             | 4·6                                  |
| 1914 .. ..         | 4,868                  | 342·3                            | 211            | 14·8                             | 4·3                                  |
| 1915 .. ..         | 4,463                  | 313·0                            | 203            | 14·2                             | 4·5                                  |
| 1916 .. ..         | 5,377                  | 381·5                            | 266            | 18·9                             | 4·9                                  |
| 1917 .. ..         | 4,092                  | 291·1                            | 154            | 11·0                             | 3·8                                  |
| 1918 .. ..         | 6,568                  | 463·3                            | 211            | 14·9                             | 3·2                                  |
| 1919 .. ..         | 4,007                  | 273·3                            | 211            | 14·4                             | 5·3                                  |
| 1920 .. ..         | 6,458                  | 429·2                            | 276            | 18·3                             | 4·3                                  |
| 1921 .. ..         | 9,458                  | 615·2                            | 275            | 17·9                             | 2·9                                  |
| GREATER MELBOURNE. |                        |                                  |                |                                  |                                      |
| 1895-9 .. ..       | 748                    | 162·1                            | 113            | 24·6                             | 15·1                                 |
| 1900-4 .. ..       | 686                    | 136·9                            | 58             | 11·6                             | 8·5                                  |
| 1905-9 .. ..       | 758                    | 140·8                            | 46             | 8·5                              | 6·1                                  |
| 1910 .. ..         | 1,655                  | 284·6                            | 74             | 12·7                             | 4·5                                  |
| 1911 .. ..         | 3,035                  | 510·7                            | 130            | 21·9                             | 4·3                                  |
| 1912 .. ..         | 2,451                  | 399·0                            | 130            | 21·2                             | 5·3                                  |
| 1913 .. ..         | 2,412                  | 377·1                            | 122            | 19·1                             | 5·1                                  |
| 1914 .. ..         | 2,164                  | 326·6                            | 116            | 17·5                             | 5·4                                  |
| 1915 .. ..         | 2,527                  | 372·2                            | 134            | 19·7                             | 5·3                                  |
| 1916 .. ..         | 3,214                  | 465·9                            | 173            | 25·1                             | 5·4                                  |
| 1917 .. ..         | 2,424                  | 344·8                            | 92             | 13·1                             | 3·8                                  |
| 1918 .. ..         | 3,807                  | 531·8                            | 125            | 17·5                             | 3·3                                  |
| 1919 .. ..         | 2,350                  | 320·5                            | 112            | 15·3                             | 4·8                                  |
| 1920 .. ..         | 2,698                  | 357·5                            | 117            | 15·5                             | 4·3                                  |
| 1921 .. ..         | 3,724                  | 473·2                            | 104            | 13·2                             | 2·8                                  |

**Prevalence of diphtheria in different areas.** The cases of diphtheria which occurred in five divisions of the State in each of the past five years and their proportions to the respective populations, for the period 1910-19 and the years 1920 and 1921, are given in the subjoined table :—

CASES OF DIPHTHERIA IN DIFFERENT AREAS.

| Area.                | Reported Cases of Diphtheria. |       |       |       |       | Annual Cases per 10,000 of Population. |       |       |
|----------------------|-------------------------------|-------|-------|-------|-------|--|-------|-------|
|                      | 1917.                         | 1918. | 1919. | 1920. | 1921. | 1910-19.                               | 1920. | 1921. |
| Greater Melbourne .. | 2,424                         | 3,807 | 2,350 | 2,698 | 3,724 | 39·3                                   | 35·8  | 47·3  |
| Ballarat and Suburbs | 31                            | 73    | 63    | 330   | 307   | 24·3                                   | 83·0  | 79·7  |
| Bendigo and Suburbs  | 134                           | 299   | 136   | 428   | 521   | 84·6                                   | 124·0 | 157·1 |
| Geelong and Suburbs  | 148                           | 314   | 165   | 369   | 405   | 43·4                                   | 107·0 | 112·0 |
| Rest of the State .. | 1,355                         | 2,075 | 1,293 | 2,633 | 4,501 | 25·7                                   | 41·1  | 71·6  |

The cases in all divisions of the State, with the exception of Ballarat and suburbs, were much more numerous in 1921 than in the preceding year.

**Death rates from diphtheria at various ages.** Of the 533 males and 529 females who died from diphtheria during the five years 1910-14, 883, or 83 per cent., were under 10 years of age. The incidence of mortality for each sex at different ages, for the period mentioned, was as follows :—

DEATH RATES FROM DIPHTHERIA AT DIFFERENT AGES, 1910-14.

| Sex.    | Annual Deaths from Diphtheria per 10,000 of each Sex aged— |         |         |         |         |          |           |           |              |           |
|---------|--|---------|---------|---------|---------|----------|-----------|-----------|--------------|-----------|
|         | 0 to 1.  | 1 to 2. | 2 to 3. | 3 to 4. | 4 to 5. | 5 to 10. | 10 to 15. | 15 to 20. | 20 and over. | All Ages. |
| Males.. | 2·92   | 6·30    | 5·56    | 9·90    | 7·50    | 5·91     | 1·76      | 0·36      | 0·09         | 1·57      |
| Females | 2·68   | 5·16    | 6·27    | 6·43    | 8·14    | 6·84     | 1·68      | 0·39      | 0·11         | 1·54      |

**Hydatids.** The deaths attributed to hydatids in 1921 numbered 21, being equivalent to a rate of 14 per million of the population, as compared with rates of 13 in the preceding year, 18 in 1919, 21 in 1918, 14 in 1917, 21 in 1916, 18 in 1915, 22 in 1908-12, and 51 in 1890-2. According to the experience of the past ten years the death rate from this disease is 30 per cent. higher among males than females. Hospital returns for the period 1914-21 show that 567 cases

of hydatids were treated therein and that 81, or 1 in every 7, ended fatally.

**Anæmia,  
chlorosis,  
leucæmia.**

Anæmia, chlorosis, and leucæmia were responsible for 160 deaths in 1921, which corresponded to a rate of 104 per million of the population, as against rates of 90 in the previous year, 93 in 1919, 90 in 1918, 97 in 1917, 94 in 1916, 83 in 1915, 100 in 1914, 76 in 1913 and 81 in 1908-12. Of the 47 persons who died from leucæmia in 1921, 22 were males.

**Diabetes.**

During 1921 diabetes was responsible for 81 male and 128 female deaths, representing a rate of 136 per million of the population, as compared with rates of 126 in the preceding year, 134 in 1919, 146 in 1918, 120 in 1917, 128 in 1916, 114 in 1915, 119 in 1914, 91 in 1913, and 107 in 1908-12. The deaths from diabetes per 10,000 of each sex in nine age groups for the periods 1900-2, 1910-12, and 1919-21, are shown in the subjoined table:—

DEATHS FROM DIABETES PER 10,000 OF  
EACH SEX.

| Age Group.  | Deaths per 10,000 of each Sex. |          |          |          |          |          |
|-------------|--------------------------------|----------|----------|----------|----------|----------|
|             | Males.                         |          |          | Females. |          |          |
|             | 1900-2.                        | 1910-12. | 1919-21. | 1900-2.  | 1910-12. | 1919-21. |
| 0-10        | ·09                            | ·10      | ·13      | ·05      | ·15      | ·26      |
| 10-20       | ·24                            | ·20      | ·36      | ·26      | ·36      | ·29      |
| 20-30       | ·17                            | ·64      | ·48      | ·36      | ·30      | ·51      |
| 30-40       | ·32                            | ·58      | ·54      | ·51      | ·53      | ·43      |
| 40-50       | ·49                            | 1·11     | 1·06     | ·42      | ·78      | 1·22     |
| 50-60       | 1·38                           | 1·80     | 2·23     | 1·42     | 3·18     | 2·92     |
| 60-70       | 2·67                           | 5·63     | 4·79     | 3·19     | 8·47     | 7·94     |
| 70-80       | 4·36                           | 7·34     | 8·98     | 5·01     | 11·54    | 13·49    |
| 80 and over | 4·11                           | 7·43     | 12·64    | 3·54     | 6·83     | 6·58     |
| All Ages    | ·56                            | 1·00     | 1·11     | ·60      | 1·26     | 1·47     |

In 1919-21 the female exceeded the male rate for each age group between 40 and 80, the excess for the twenty years of life 60 to 80 amounting to 56 per cent. For all ages combined the rate for females was 32 per cent. higher than that for males.

In the next table are shown the number of deaths and the death rate from influenza in Victoria for each year from 1895 to 1921 :—

## DEATHS AND DEATH RATES FROM INFLUENZA.

| Year. | Males. | Females. | Persons. | Deaths per 100,000 of Population. |
|-------|--------|----------|----------|-----------------------------------|
| 1895  | 223    | 199      | 422      | 35·8                              |
| 1896  | 124    | 81       | 205      | 17·4                              |
| 1897  | 103    | 63       | 166      | 14·2                              |
| 1898  | 130    | 131      | 261      | 22·3                              |
| 1899  | 528    | 435      | 963      | 81·2                              |
| 1900  | 99     | 89       | 188      | 15·8                              |
| 1901  | 150    | 145      | 295      | 24·5                              |
| 1902  | 167    | 147      | 314      | 25·9                              |
| 1903  | 68     | 61       | 129      | 10·7                              |
| 1904  | 128    | 129      | 257      | 21·3                              |
| 1905  | 71     | 62       | 133      | 11·0                              |
| 1906  | 121    | 122      | 243      | 19·8                              |
| 1907  | 149    | 127      | 276      | 22·1                              |
| 1908  | 90     | 76       | 166      | 13·1                              |
| 1909  | 61     | 49       | 110      | 8·6                               |
| 1910  | 67     | 52       | 119      | 9·2                               |
| 1911  | 70     | 80       | 150      | 11·4                              |
| 1912  | 80     | 85       | 165      | 12·2                              |
| 1913  | 56     | 38       | 94       | 6·7                               |
| 1914  | 67     | 84       | 151      | 10·6                              |
| 1915  | 45     | 50       | 95       | 6·7                               |
| 1916  | 47     | 51       | 98       | 7·0                               |
| 1917  | 39     | 27       | 66       | 4·7                               |
| 1918  | 98     | 112      | 210      | 14·8                              |
| 1919  | 1,969  | 1,561    | 3,530    | 240·7                             |
| 1920  | 37     | 41       | 78       | 5·2                               |
| 1921  | 70     | 66       | 136      | 8·8                               |

Towards the end of January, 1919, an outbreak of influenza occurred in Melbourne and it rapidly spread throughout the whole metropolitan area. The first wave, which was the most virulent one, reached its greatest height in the second week of February and receded slowly during the subsequent six weeks. It was followed by a second wave of greater magnitude which commenced in the last week of March and attained its maximum height about one month later, after which it receded, though more slowly than the preceding wave. A recrudescence of the disease in a milder form occurred about the middle of July, but it had abated to very small dimensions by the end of September. The disease spread gradually throughout the State and accounted for 3,530 deaths, of which 2,391 occurred in Greater Melbourne, 91 in Ballarat, 87 in Bendigo, 65 in Geelong, and 896 in the rest of the State. To every 10,000 of population the deaths from this cause were 24·1 for the State

as a whole, 32·6 in Greater Melbourne, 22·8 in Ballarat, 25·0 in Bendigo, 19·0 in Geelong, and 14·4 in the rest of the State. The mortality rate from the disease was considerably higher in the industrial than in the residential areas of the metropolis. Further information in regard to the epidemic of 1919 is given in the *Year-Book* for 1918-19, pages 214 to 216.

The next table gives the death rate from influenza per 10,000 of each sex in age groups for five census periods, these periods being selected because the age distribution of the people was then accurately known:—

DEATHS FROM INFLUENZA IN VICTORIA PER 10,000 OF EACH SEX.

| Age Group.      |     |     |     | 1880-2. | 1890-2. | 1900-2. | 1910-12. | 1919-21. |
|-----------------|-----|-----|-----|---------|---------|---------|----------|----------|
| <i>Males.</i>   |     |     |     |         |         |         |          |          |
| 0-15            | ... | ... | ... | ·34     | 2·50    | 1·10    | ·40      | 1·90     |
| 15-20           | ... | ... | ... | ·07     | ·64     | ·34     | ·24      | 3·93     |
| 20-25           | ... | ... | ... | ...     | 1·20    | ·59     | ·21      | 8·20     |
| 25-35           | ... | ... | ... | ·07     | 1·50    | ·79     | ·17      | 19·06    |
| 35-45           | ... | ... | ... | ...     | 3·04    | 1·31    | ·59      | 16·61    |
| 45-55           | ... | ... | ... | ·24     | 5·12    | 3·20    | ·73      | 13·15    |
| 55-65           | ... | ... | ... | ·24     | 12·65   | 5·25    | 2·38     | 7·02     |
| 65 and upwards  | ... | ... | ... | 2·36    | 27·13   | 17·02   | 12·27    | 8·75     |
| All ages        | ... | ... | ... | ·25     | 3·94    | 2·30    | 1·10     | 9·17     |
| <i>Females.</i> |     |     |     |         |         |         |          |          |
| 0-15            | ... | ... | ... | ·34     | 1·86    | 1·15    | ·42      | 1·60     |
| 15-20           | ... | ... | ... | ...     | ·92     | ·83     | ·34      | 3·71     |
| 20-25           | ... | ... | ... | ...     | 1·28    | ·69     | ·35      | 7·98     |
| 25-35           | ... | ... | ... | ·07     | 2·35    | ·89     | ·22      | 12·76    |
| 35-45           | ... | ... | ... | ·08     | 4·11    | 1·86    | ·30      | 10·30    |
| 45-55           | ... | ... | ... | ...     | 5·39    | 2·02    | ·68      | 8·80     |
| 55-65           | ... | ... | ... | ·62     | 11·46   | 5·53    | 1·61     | 8·71     |
| 65 and upwards  | ... | ... | ... | 3·18    | 35·22   | 16·02   | 12·80    | 10·29    |
| All ages        | ... | ... | ... | ·24     | 3·72    | 2·13    | 1·10     | 7·16     |

The death rate for the period 1919-21 showed a substantial increase as compared with that for each of the four preceding periods, owing to an epidemic which occurred in 1919.

In 1921 the deaths from respiratory diseases numbered 1,754, which represented a rate of 1,141 per million of the population, as compared with rates of 1,329 in the previous year, 1,430 in 1919, 1,160 in 1918, 1,094 in 1917, 1,336 in 1916, 1,368 in 1915, 1,397 in 1914, and 1,279 in 1913. Of the deaths from complaints of this nature in the year under review, 107 were referred to acute bronchitis, 235 to chronic bronchitis, 368 to broncho-pneumonia, 671 to pneumonia,

53 to pleurisy, and 30 to asthma. These six diseases accounted for 83 per cent. of the total respiratory mortality. The seasonal incidence of the maladies is evidenced by the deaths in June, July, August, and September, which represented nearly 46 per cent. of the total for the whole year. Respiratory diseases are much more fatal at the extremes of life than at middle ages, and among males than females. This is shown in the appended table, which gives for each sex the death rates relating to groups of ages at five census periods:—

DEATHS FROM RESPIRATORY DISEASES PER 10,000 OF EACH SEX.

| Age Group.            | 1880-2. | 1890-2. | 1900-2. | 1910-12. | 1919-21 |
|-----------------------|---------|---------|---------|----------|---------|
| <i>Males.</i>         |         |         |         |          |         |
| 0-15 ... ..           | 29.02   | 28.52   | 16.53   | 12.94    | 10.97   |
| 15-20 ... ..          | 3.30    | 2.92    | 2.70    | 1.66     | 2.27    |
| 20-25 ... ..          | 5.34    | 4.88    | 4.85    | 2.35     | 3.86    |
| 25-35 ... ..          | 8.31    | 6.85    | 5.94    | 3.86     | 5.15    |
| 35-45 ... ..          | 15.80   | 13.55   | 9.49    | 10.50    | 9.19    |
| 45-55 ... ..          | 26.59   | 25.18   | 18.04   | 18.25    | 15.65   |
| 55-65 ... ..          | 51.65   | 56.51   | 38.37   | 32.68    | 27.12   |
| 65 and upwards ... .. | 136.54  | 141.07  | 112.38  | 138.87   | 110.80  |
| All ages ... ..       | 24.48   | 24.30   | 18.66   | 17.17    | 14.83   |
| <i>Females.</i>       |         |         |         |          |         |
| 0-15 ... ..           | 24.18   | 24.13   | 13.85   | 10.50    | 9.28    |
| 15-20 ... ..          | 2.02    | 3.52    | 2.34    | 1.56     | 2.32    |
| 20-25 ... ..          | 4.23    | 3.05    | 3.34    | 2.48     | 2.22    |
| 25-35 ... ..          | 5.72    | 5.65    | 3.75    | 3.55     | 4.13    |
| 35-45 ... ..          | 12.53   | 11.55   | 7.68    | 5.85     | 5.69    |
| 45-55 ... ..          | 13.63   | 17.01   | 11.80   | 8.28     | 8.32    |
| 55-65 ... ..          | 29.15   | 32.10   | 27.42   | 16.64    | 15.98   |
| 65 and upwards ... .. | 116.12  | 112.38  | 86.78   | 99.81    | 79.73   |
| All ages ... ..       | 17.08   | 17.62   | 13.28   | 11.81    | 10.69   |

The mortality from respiratory diseases at all ages combined was less in the period 1919-21 than in any of the four previous census periods. At each census date the male exceeded the female rate, the average excess for the five census periods being 41 per cent.

Cerebro-spinal meningitis was responsible for 17 deaths in 1921, 15 in 1920, 14 in 1919, 37 in 1918, 75 in 1917, 326 in 1916, and 338 in 1915. The cases reported to the Public Health Department in those years numbered 1,668, and the proportion of these that ended fatally was 49 per cent. The numbers

Cerebro-spinal,  
tubercular,  
and simple  
meningitis.

of deaths from cerebro-spinal, tubercular, and simple meningitis during the last ten years were as follows:—

### DEATHS FROM DIFFERENT FORMS OF MENINGITIS, 1912-21.

| Year.   | Cerebro-spinal Meningitis. |          | Tubercular Meningitis. |          | Simple Meningitis. |          | Total—All Forms of Meningitis. |          |
|---------|----------------------------|----------|------------------------|----------|--------------------|----------|--------------------------------|----------|
|         | Males.                     | Females. | Males.                 | Females. | Males.             | Females. | Males.                         | Females. |
| 1912 .. | 4                          | 3        | 26                     | 44       | 63                 | 76       | 93                             | 123      |
| 1913 .. | 8                          | 4        | 25                     | 41       | 85                 | 65       | 118                            | 110      |
| 1914 .. | 12                         | 5        | 42                     | 30       | 89                 | 63       | 143                            | 98       |
| 1915 .. | 239                        | 99       | 35                     | 35       | 74                 | 46       | 348                            | 180      |
| 1916 .. | 191                        | 135      | 29                     | 40       | 56                 | 39       | 276                            | 214      |
| 1917 .. | 48                         | 27       | 56                     | 41       | 37                 | 35       | 141                            | 103      |
| 1918 .. | 28                         | 9        | 55                     | 40       | 39                 | 35       | 122                            | 84       |
| 1919 .. | 7                          | 7        | 38                     | 24       | 33                 | 29       | 78                             | 60       |
| 1920 .. | 12                         | 3        | 49                     | 34       | 46                 | 35       | 107                            | 72       |
| 1921 .. | 8                          | 9        | 42                     | 44       | 62                 | 37       | 112                            | 90       |

Age incidence of different forms of meningitis.

The next table shows the incidence of mortality at various ages from different forms of meningitis for the period 1912-21:—

### DEATHS AT DIFFERENT AGES FROM MENINGITIS, 1912-21.

| Age Group.    | Cerebro-spinal Meningitis. |          | Tubercular Meningitis. |          | Simple Meningitis. |          | Total—All Forms of Meningitis. |          |
|---------------|----------------------------|----------|------------------------|----------|--------------------|----------|--------------------------------|----------|
|               | Males.                     | Females. | Males.                 | Females. | Males.             | Females. | Males.                         | Females. |
| Under 5 ..    | 129                        | 97       | 221                    | 193      | 334                | 268      | 684                            | 558      |
| 5 to 15 ..    | 71                         | 56       | 88                     | 89       | 72                 | 51       | 231                            | 196      |
| 15 „ 25 ..    | 159                        | 52       | 32                     | 48       | 33                 | 50       | 224                            | 150      |
| 25 „ 35 ..    | 78                         | 26       | 28                     | 22       | 28                 | 18       | 134                            | 66       |
| 35 „ 45 ..    | 50                         | 24       | 19                     | 10       | 39                 | 26       | 108                            | 60       |
| 45 „ 55 ..    | 47                         | 27       | 5                      | 9        | 44                 | 22       | 96                             | 58       |
| 55 „ 65 ..    | 16                         | 12       | 2                      | 1        | 14                 | 9        | 32                             | 22       |
| 65 and over   | 7                          | 7        | 2                      | 1        | 20                 | 16       | 29                             | 24       |
| Total 1912-21 | 557                        | 301      | 397                    | 373      | 584                | 460      | 1,538                          | 1,134    |

On the average of the last ten years the deaths of children under 5 years of age from cerebro-spinal, tubercular, and simple meningitis represented 26, 54, and 58 per cent. respectively of the total deaths from these diseases. Of the 17 persons who succumbed to cerebro-spinal meningitis in 1921, 8 were under 5 and 11 were under 15 years of age. Up to the age of 15 years the incidence of the mortality from this disease in the period 1912-21 was 31 per cent. higher for males than

females, while for the age group 15 to 45 the rate for the former was about three times that for the latter.

**Diseases of the spine.** In 1921 locomotor ataxia and other diseases of the spine, excluding infantile paralysis, accounted for 57 male and 23 female deaths, representing a death rate of 52 per million of the population, as compared with rates of 45 in the previous year, 78 in 1919, 88 in 1918, 58 in 1917, 70 in 1916, 58 in 1915, 75 in 1914, 62 in 1913, and 71 in 1908-12. Of the 23 persons who died from locomotor ataxia 22 were males.

**Infantile paralysis.** Mortality returns show that infantile paralysis was responsible for 4 deaths in 1921 as against 4 in the previous year, 3 in 1919, 21 in 1918, 6 in 1917, 4 in 1916, 2 in 1915, 9 in 1914, 3 in 1913, and 6 in 1912. Of the 62 persons who died during these ten years 36 were boys. Six of the victims were under 1 year of age, and 32 were under 5 years. The cases reported to the Public Health Department in 1921 numbered 27, as compared with 5 in the preceding year, 2 in 1919, 303 in 1918, and 32 in 1917.

**Heart disease.** During 1921 there were 1,661 deaths ascribed to organic heart disease, 47 to pericarditis, 194 to acute endocarditis, and 45 to angina pectoris. The total—1,947—from these causes represented a rate of 1,267 per million of the population, as compared with 1,287 in the previous year, 1,402 in 1919, 1,400 in 1918, 1,442 in 1917, 1,287 in 1916, 1,134 in 1915, 1,278 in 1914, 1,294 in 1913, and 1,441 in 1908-12. Of the 1,947 persons who died from these diseases in 1921, only 74, or 3.7 per cent., were under 15 years of age. On the average of the three years 1919 to 1921 the deaths from all forms of heart disease per 10,000 of each sex, in age groups, were as follows:—

DEATH RATES FROM HEART DISEASE AT VARIOUS AGES.

| Sex.       | Deaths per 10,000 Persons aged— |        |        |        |        |        |        |        |                 |           |
|------------|---------------------------------|--------|--------|--------|--------|--------|--------|--------|-----------------|-----------|
|            | 0-15.                           | 15-20. | 20-25. | 25-35. | 35-45. | 45-55. | 55-65. | 65-75. | 75 and upwards. | All Ages. |
| Males ..   | 1.12                            | 2.12   | 1.93   | 2.78   | 5.43   | 15.15  | 41.95  | 113.17 | 253.64          | 13.95     |
| Females .. | 1.02                            | 1.70   | 1.77   | 2.93   | 6.28   | 12.30  | 29.21  | 81.29  | 218.23          | 11.91     |

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 75 and upwards, approximately 1 in 6 is due to some form of this disease.

**Diseases of the digestive system.** In 1921 there were 908 male and 775 female deaths from digestive ailments, representing a proportion of 1,095 per million of the population, as against rates of

1,147 in the previous year, 978 in 1919, 1,030 in 1918, 884 in 1917, 1,206 in 1916, 1,098 in 1915, 1,504 in 1914, 1,220 in 1913, 1,345 in 1912, 1,233 in 1911, and 2,382 in 1890-2. Diarrhœal diseases were responsible for 1,010 deaths, which were equivalent to a rate of 657 per million of population, the corresponding rates in previous periods being 639 in 1920, 501 in 1919, 504 in 1918, 408 in 1917, 731 in 1916, 590 in 1915, 941 in 1914, 709 in 1913, 833 in 1908-12, and 1,342 in 1890-2. The age incidence of these diseases shows that they are heaviest at the extremes of life. Of the 1,010 deaths from diarrhœal diseases in the year under review, 727, or 72 per cent., were of children under 2 years of age, and 127, or about 13 per cent., were of persons over 65 years of age. There were 49 male and 34 female deaths from cirrhosis of the liver, 53 male and 76 female deaths from other affections of that organ, and 83 male and 71 female deaths from hernia and intestinal obstruction.

**Appendicitis.** The deaths from appendicitis numbered 88 in 1921, 95 in the previous year, 89 in 1919, 94 in 1918, 87 in 1917, 78 in 1916, 102 in 1915, and 103 in 1914, and corresponded to rates of 57, 63, 61, 66, 62, 55, 72, and 72 per million of the population respectively. Hospital records show that during 1921 there were 1,834 cases treated, and that 40, or 2·2 per cent., ended fatally, as compared with fatality rates of 2·7 per cent. in 1920, 3·3 per cent. in 1919, 3·0 per cent. in 1918, 2·5 per cent. in 1917, 4·1 per cent. in 1916, 5·3 per cent. in 1915, and 6 per cent. in the period 1908-12. According to the experience of the three years, 1919 to 1921, the death rate from appendicitis is approximately 59 per cent. higher among males than females. The mortality rates at various ages for that period were as follows:—

#### DEATH RATES FROM APPENDICITIS, 1919-21.

| Sex.    | Deaths from Appendicitis per 10,000 of each Sex aged— |           |           |           |           |           |           |           |              |           |
|---------|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------------|-----------|
|         | Under 10.   | 10 to 15. | 15 to 20. | 20 to 25. | 25 to 35. | 35 to 45. | 45 to 55. | 55 to 65. | 65 and over. | All Ages. |
| Males.. | 0·31  | 0·69      | 1·21      | 0·80      | 0·65      | 0·84      | 1·00      | 0·64      | 1·17         | 0·73      |
| Females | 0·26  | 0·71      | 0·93      | 0·30      | 0·45      | 0·49      | 0·36      | 0·32      | 0·77         | 0·46      |

**Diseases of urinary system.** In 1921 there were 987 deaths attributed to diseases of the urinary system, which corresponded to a rate of 643 per million of the population, as against rates of 697 in the previous year, 645 in 1919, 741 in 1918, 710 in 1917, 705 in 1916, 712 in 1915, 670 in 1914, 724 in 1913, and 700 in 1909-12. Bright's disease, uræmia, and acute nephritis were responsible for 794 deaths, or 80 per cent., and complaints of the bladder and prostate for 87 deaths, or 9 per cent. of the total referred to maladies of the urinary system.

The deaths per 10,000 of each sex, in age groups, for the periods 1900-2, 1910-12, and 1919-21 are shown in the following table :—

DEATH RATES FROM DISEASES OF URINARY SYSTEM.

| Age Group.      | Deaths per 10,000 of each Sex. |          |          |          |          |          |
|-----------------|--------------------------------|----------|----------|----------|----------|----------|
|                 | Males.                         |          |          | Females. |          |          |
|                 | 1900-2.                        | 1910-12. | 1919-21. | 1900-2.  | 1910-12. | 1919-21. |
| 0-10 ... ..     | ·93                            | ·67      | ·76      | ·59      | ·79      | ·65      |
| 10-20 ... ..    | ·45                            | ·73      | ·36      | ·82      | ·71      | ·66      |
| 20-30 ... ..    | 1·83                           | 1·72     | 1·44     | 1·59     | 1·61     | 1·82     |
| 30-40 ... ..    | 3·55                           | 3·03     | 2·72     | 4·21     | 3·76     | 2·72     |
| 40-50 ... ..    | 8·12                           | 9·03     | 6·03     | 7·26     | 7·07     | 5·53     |
| 50-60 ... ..    | 17·43                          | 18·95    | 15·61    | 11·36    | 13·81    | 9·95     |
| 60-70 ... ..    | 39·62                          | 46·63    | 36·38    | 21·49    | 24·44    | 19·62    |
| 70-80 ... ..    | 80·68                          | 96·18    | 99·50    | 27·70    | 38·53    | 39·29    |
| 80 and over ... | 128·48                         | 153·04   | 166·39   | 27·15    | 43·70    | 52·58    |
| All Ages ... .. | 8·05                           | 9·18     | 8·08     | 4·28     | 5·34     | 4·94     |

The figures for the latest period show that there is scarcely any difference between the rates for males and females under 50 years of age. For older ages, however, the excess of the male over the female rate is very pronounced, especially at ages 70 and upwards. For all ages the rate for males exceeds that for females by 64 per cent.

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

DEATHS FROM PULMONARY TUBERCULOSIS AT VARIOUS AGES.

| Ages.           | Males. |       |       |       |       | Females. |       |       |       |       |
|-----------------|--------|-------|-------|-------|-------|----------|-------|-------|-------|-------|
|                 | Year.  |       |       |       |       | Year.    |       |       |       |       |
|                 | 1917.  | 1918. | 1919. | 1920. | 1921. | 1917.    | 1918. | 1919. | 1920. | 1921. |
| 0-10 ... ..     | 2      | 2     | 5     | 12    | 3     | 4        | 7     | 3     | 6     | 2     |
| 10-15 ... ..    | 2      | 2     | 2     | 3     | 3     | 6        | 7     | 4     | 6     | 3     |
| 15-20 ... ..    | 21     | 18    | 22    | 17    | 16    | 38       | 38    | 43    | 33    | 27    |
| 20-25 ... ..    | 51     | 47    | 58    | 47    | 56    | 67       | 83    | 83    | 67    | 71    |
| 25-30 ... ..    | 41     | 39    | 77    | 64    | 64    | 74       | 86    | 75    | 76    | 79    |
| 30-35 ... ..    | 58     | 55    | 80    | 65    | 51    | 66       | 51    | 54    | 55    | 62    |
| 35-40 ... ..    | 70     | 67    | 72    | 57    | 68    | 50       | 50    | 54    | 45    | 54    |
| 40-45 ... ..    | 60     | 56    | 65    | 60    | 70    | 27       | 41    | 32    | 42    | 53    |
| 45-50 ... ..    | 63     | 58    | 68    | 70    | 69    | 29       | 30    | 35    | 26    | 34    |
| 50-55 ... ..    | 58     | 72    | 65    | 58    | 46    | 14       | 24    | 20    | 21    | 22    |
| 55-60 ... ..    | 50     | 54    | 67    | 46    | 42    | 13       | 16    | 16    | 15    | 20    |
| 60-65 ... ..    | 40     | 41    | 31    | 39    | 40    | 4        | 14    | 11    | 13    | 22    |
| 65-70 ... ..    | 16     | 19    | 17    | 16    | 18    | 5        | 2     | 6     | 6     | 8     |
| 70 and over ... | 17     | 12    | 10    | 16    | 13    | 6        | 3     | 9     | 9     | 9     |
| Total ... ..    | 549    | 542   | 639   | 570   | 559   | 403      | 452   | 445   | 420   | 466   |

The deaths from phthisis in 1921 numbered 1,025—559 being of males and 466 of females—and equalled a rate of 667 per million of the population, as compared with rates of 658 in the previous year, 739 in 1919, 701 in 1918, 677 in 1917, 743 in 1916, 661 in 1915, 724 in 1914, 755 in 1913, 855 in 1908-12, and 1,365 in 1890-2. In England and Scotland in 1919, and in Ireland in 1920, the deaths from this cause were 996, 877 and 1,318 per million of their respective populations. The rates for Victoria are more fully shown in the following table, which gives the mortality per 10,000 of each sex, in age groups, at six census periods :—

### DEATH RATES IN VICTORIA FROM PHTHISIS IN AGE GROUPS AT SIX CENSUS PERIODS.

| Age Group.         | Annual Mortality from Phthisis per 10,000 of each Sex. |         |         |         |          |          |
|--------------------|--|---------|---------|---------|----------|----------|
|                    | 1870-2.  | 1880-2. | 1890-2. | 1900-2. | 1910-12. | 1919-21. |
| <i>Males.</i>      |  |         |         |         |          |          |
| 0 to 15 ...        | 1·22   | 1·74    | ·90     | ·38     | ·46      | ·39      |
| 15 " 20 ...        | 5·71   | 6·88    | 5·41    | 5·06    | 3·71     | 2·72     |
| 20 " 25 ...        | 18·75  | 21·19   | 18·29   | 14·35   | 8·45     | 8·63     |
| 25 " 35 ...        | 22·21  | 30·33   | 23·70   | 20·31   | 13·11    | 10·96    |
| 35 " 45 ...        | 21·83  | 25·11   | 23·28   | 22·07   | 15·63    | 13·68    |
| 45 " 55 ...        | 22·24  | 28·65   | 31·17   | 25·05   | 18·07    | 15·65    |
| 55 " 65 ...        | 27·86  | 31·41   | 36·48   | 35·75   | 18·88    | 14·04    |
| 65 and upwards ... | 19·56  | 18·08   | 25·40   | 31·07   | 13·55    | 8·75     |
| All Ages ...       | 12·89  | 15·33   | 15·73   | 13·51   | 8·98     | 7·80     |
| <i>Females.</i>    |  |         |         |         |          |          |
| 0 to 15 ...        | ·98  | 1·76    | 1·43    | ·93     | ·97      | ·36      |
| 15 " 20 ...        | 12·37  | 12·50   | 9·51    | 8·18    | 7·62     | 5·26     |
| 20 " 25 ...        | 19·28  | 21·00   | 18·49   | 12·79   | 12·68    | 10·94    |
| 25 " 35 ...        | 22·02  | 26·56   | 21·77   | 18·15   | 14·03    | 9·98     |
| 35 " 45 ...        | 21·65  | 24·06   | 22·53   | 17·74   | 11·51    | 9·12     |
| 45 " 55 ...        | 19·60  | 20·72   | 16·13   | 14·41   | 8·18     | 6·39     |
| 55 " 65 ...        | 10·51  | 14·26   | 12·35   | 12·52   | 7·47     | 5·16     |
| 65 and upwards ... | 12·61  | 13·12   | 8·25    | 8·18    | 5·29     | 4·12     |
| All Ages ...       | 10·62  | 12·75   | 11·51   | 9·72    | 7·61     | 5·70     |

A comparison of the mortalities from pulmonary tuberculosis at the census periods 1910-12 and 1919-21 shows that, except among males between 20 and 25, lower death rates obtained in each age group in 1919-21 than in 1910-12, and that the improvement was greater among females than males. By combining the death rates from pulmonary tuberculosis, as shown above, with those from other forms of tubercular disease, given in a subsequent page, it appears that the

section of the community represented by males aged 20 to 25 was the only one which experienced no relief from tubercular diseases in 1919-21 as compared with the preceding census period.

The distribution of tuberculous mortality shows that certain urban centres—particularly Bendigo and suburbs—furnish considerably higher death rates than the rural portions of the State. The tubercular death rate amongst miners is very considerably in excess of that among farmers and graziers, and, as mining occupations predominate in Bendigo and suburbs and farming and grazing occupations in the rural districts, the distribution of callings accounts in a large measure for the disparity in the mortality rates from this cause in the divisions of the State referred to. On the average of the past five years the tubercular death rate of Bendigo exceeded the rates of Ballarat and Melbourne by 63 and 80 per cent. respectively. The rates in these localities from phthisis and other tubercular diseases are given in the appended table for the periods 1891-1900, 1901-5, and 1906-10, and for each of the last eleven years :—

DEATH RATES FROM TUBERCULAR DISEASES IN MELBOURNE, BALLARAT, AND BENDIGO, 1891 TO 1921.

| Period.      | Deaths per 10,000 of the Population. |                       |                      |                            |                       |                      |                          |                       |                      |
|--------------|--------------------------------------|-----------------------|----------------------|----------------------------|-----------------------|----------------------|--------------------------|-----------------------|----------------------|
|              | Phthisis.                            |                       |                      | Other Tubercular Diseases. |                       |                      | All Tubercular Diseases. |                       |                      |
|              | Melbourne and Suburbs.               | Ballarat and Suburbs. | Bendigo and Suburbs. | Melbourne and Suburbs.     | Ballarat and Suburbs. | Bendigo and Suburbs. | Melbourne and Suburbs.   | Ballarat and Suburbs. | Bendigo and Suburbs. |
| 1891-1900 .. | 16.7                                 | 17.1                  | 24.1                 | 4.7                        | 3.5                   | 4.0                  | 21.4                     | 20.6                  | 28.1                 |
| 1901-1905 .. | 13.9                                 | 15.3                  | 22.7                 | 4.2                        | 4.0                   | 4.7                  | 18.1                     | 19.3                  | 27.4                 |
| 1906-1910 .. | 10.8                                 | 11.5                  | 21.2                 | 3.0                        | 2.1                   | 2.0                  | 13.8                     | 13.6                  | 23.2                 |
| 1911 ..      | 9.9                                  | 9.4                   | 19.5                 | 2.6                        | 3.3                   | 2.5                  | 12.5                     | 12.7                  | 22.0                 |
| 1912 ..      | 10.0                                 | 10.0                  | 17.7                 | 2.0                        | 1.7                   | 2.1                  | 12.0                     | 11.7                  | 19.8                 |
| 1913 ..      | 8.8                                  | 10.9                  | 20.0                 | 2.2                        | 2.8                   | 2.3                  | 11.0                     | 13.7                  | 22.3                 |
| 1914 ..      | 8.9                                  | 11.2                  | 11.8                 | 2.0                        | .9                    | 1.0                  | 10.9                     | 12.1                  | 12.8                 |
| 1915 ..      | 7.7                                  | 10.2                  | 13.6                 | 1.7                        | 2.1                   | 2.4                  | 9.4                      | 12.3                  | 16.0                 |
| 1916 ..      | 8.6                                  | 14.3                  | 14.2                 | 1.8                        | 1.5                   | 1.4                  | 10.4                     | 15.8                  | 15.6                 |
| 1917 ..      | 7.9                                  | 10.9                  | 16.8                 | 2.2                        | 1.7                   | 2.2                  | 10.1                     | 12.6                  | 19.0                 |
| 1918 ..      | 8.3                                  | 9.2                   | 17.4                 | 1.8                        | 1.3                   | 3.1                  | 10.1                     | 10.5                  | 20.5                 |
| 1919 ..      | 8.7                                  | 10.8                  | 14.7                 | 1.7                        | 1.0                   | 2.0                  | 10.4                     | 11.8                  | 16.7                 |
| 1920 ..      | 7.9                                  | 10.6                  | 17.1                 | 1.9                        | 2.0                   | 1.2                  | 9.8                      | 12.6                  | 18.3                 |
| 1921 ..      | 8.1                                  | 7.0                   | 14.2                 | 1.9                        | 1.3                   | 2.1                  | 10.0                     | 8.3                   | 16.3                 |

Prevalence of phthisis in different areas. Relatively to population cases of pulmonary tuberculosis are fewer in country districts than in urban areas. The cases reported during each of the past five years in five divisions of the State, and their proportions to the populations of these divisions for the period 1910-19 and the years 1920 and 1921 are given in the subjoined table:—

#### PHTHISIS IN DIFFERENT AREAS.

| Area.                | Reported Cases of Pulmonary Tuberculosis. |       |       |       |       | Annual Cases per 10,000 of Population. |       |       |
|----------------------|---|-------|-------|-------|-------|--|-------|-------|
|                      | 1917.                                     | 1918. | 1919. | 1920. | 1921. | 1910-19.                               | 1920. | 1921. |
| Greater Melbourne .. | 1,052                                     | 982   | 889   | 653   | 878   | 13·9                                   | 8·7   | 11·2  |
| Ballarat and Suburbs | 43  | 40    | 28    | 21    | 36    | 12·8                                   | 5·3   | 9·4   |
| Bendigo and Suburbs  | 53  | 56    | 31    | 21    | 45    | 18·0                                   | 6·1   | 13·6  |
| Geelong and Suburbs  | 14  | 22    | 24    | 16    | 19    | 7·9                                    | 4·6   | 5·2   |
| Rest of the State .. | 400                                       | 380   | 213   | 211   | 324   | 5·8                                    | 3·3   | 5·0   |
| Whole State ..       | 1,562                                     | 1,480 | 1,185 | 922   | 1,302 | 10·4                                   | 6·2   | 8·5   |

Phthisis in metropolitan municipalities. In the *Year-Book* for 1918-19, page 226, a table is given showing the reported cases of phthisis to every 10,000 of population of each metropolitan municipality. The rates are based on the reports received by the Public Health Department for the two and one-half years ended 30th June, 1911.

Other phases of phthisis. The results of an investigation of 3,198 cases of pulmonary tuberculosis which occurred in the State during the two and a half years ended June, 1911, are given in the 1913-14 edition of this work. The matters dealt with were the sex and age of the patients, their usual place of residence, the chances of metropolitan and extra metropolitan residents contracting the disease at different ages, the time elapsing from the commencement of the complaint to the date on which medical advice is obtained, and the probability of recovering from the disease. In the issue referred to the medical and economic results of sanatorium treatment of tuberculosis of the lungs in Germany are shown for a series of years.

Tubercular diseases (phthisis excepted). In 1921 there were in Victoria 210 deaths from tubercular diseases (excluding phthisis), which corresponded to a rate of 137 per million, as compared with rates of 145 in the previous year, 126 in 1919, 144 in 1918, 163 in 1917, 136 in 1916, 135 in 1915, 140 in 1914, 156 in 1913, 182 in 1908-12, and 379 in

1890-2. The death rates in various age groups are shown in the following table for five census periods :—

DEATH RATES FROM TUBERCULAR DISEASES (PHTHISIS EXCEPTED) IN AGE GROUPS.

| Age Group.      | Deaths per 10,000 of each Sex. |         |         |          |          |
|-----------------|--------------------------------|---------|---------|----------|----------|
|                 | 1880-2.                        | 1890-2. | 1900-2. | 1910-12. | 1919-21. |
| <i>Males.</i>   |                                |         |         |          |          |
| 0—15 ...        | 7.98                           | 10.36   | 5.64    | 2.75     | 2.03     |
| 15—20 ...       | .81                            | 1.17    | 1.12    | 1.12     | .76      |
| 20—25 ...       | 1.23                           | .89     | 1.77    | 1.23     | 1.61     |
| 25—35 ...       | .66                            | .84     | 1.91    | 1.71     | 1.72     |
| 35—45 ...       | .88                            | .77     | 1.39    | 1.38     | 1.15     |
| 45—55 ..        | .85                            | .67     | 1.64    | .82      | 1.13     |
| 55—65 ...       | 1.07                           | .78     | 2.40    | 1.29     | .96      |
| 65 and over     | 2.36                           | .56     | 1.17    | .59      | 1.17     |
| All ages        | 3.55                           | 4.02    | 2.99    | 1.70     | 1.50     |
| <i>Females.</i> |                                |         |         |          |          |
| 0—15 ..         | 7.28                           | 8.43    | 5.33    | 2.12     | 1.64     |
| 15—20 ...       | 1.30                           | 1.27    | 1.95    | 2.34     | 1.08     |
| 20—25 ...       | .69                            | 1.23    | 2.09    | 2.59     | 1.18     |
| 25—35 ..        | .41                            | .88     | 1.98    | 1.81     | 1.28     |
| 35—45 ..        | .70                            | .42     | 1.77    | 1.33     | .78      |
| 45—55 ..        | .67                            | .34     | 1.01    | .93      | .84      |
| 55—65 ..        | .62                            | .69     | .71     | 1.11     | .81      |
| 65 and over     | 1.19                           | .64     | .71     | .29      | .51      |
| All ages        | 3.39                           | 3.58    | 2.91    | 1.76     | 1.17     |

As compared with the period 1910-12 the proportion of persons under 15 years of age who died from tubercular diseases (excluding

phthisis) during 1919-21 represented a decline of 26 per cent. for males and of 23 per cent. for females.

The experience of recent years shows that the tubercular death rate in Victoria is but slightly affected by the arrival from beyond Australia of persons suffering from tubercular diseases. Only seven of those who died in 1921 had been born outside and resident less than one year in Australia, and 19 had resided in the continent for a shorter period than five years.

**Tubercular diseases—Deaths of recent arrivals from.**

**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. |       |       |       |       |
|----------------|--------|-------|-------|-------|-------|----------|-------|-------|-------|-------|
|                | 1917.  | 1918. | 1919. | 1920. | 1921. | 1917.    | 1918. | 1919. | 1920. | 1921. |
| 0-15 ..        | 6      | 2     | 6     | 4     | 7     | 10       | 4     | 4     | 7     | 5     |
| 15-25 ..       | 2      | ..    | 5     | 4     | 7     | 6        | 3     | 4     | 3     | 3     |
| 25-35 ..       | 8      | 7     | 8     | 9     | 7     | 24       | 16    | 13    | 16    | 21    |
| 35-45 ..       | 24     | 35    | 31    | 31    | 33    | 84       | 68    | 42    | 62    | 65    |
| 45-55 ..       | 116    | 108   | 106   | 118   | 111   | 121      | 145   | 160   | 139   | 164   |
| 55-65 ..       | 204    | 240   | 182   | 240   | 243   | 168      | 190   | 202   | 194   | 223   |
| 65-75 ..       | 140    | 159   | 173   | 162   | 185   | 154      | 130   | 134   | 159   | 168   |
| 75-85 ..       | 94     | 91    | 79    | 83    | 84    | 101      | 93    | 84    | 83    | 103   |
| 85 and over .. | 15     | 23    | 18    | 27    | 18    | 23       | 22    | 24    | 25    | 20    |
| Total ..       | 609    | 665   | 608   | 678   | 695   | 691      | 671   | 667   | 688   | 772   |

The widely different social and economic effects produced by the prevalence of and deaths from the two important diseases—cancer and phthisis—are evidenced by the ages of their victims. For the year 1921 the average age of those who died from cancer was 62·1 years for males and 60·7 years for females, whilst the corresponding averages for phthisis were 41·7 years for males and 36·7 years for females.

**Cancer—Death rates at different ages.**

Deaths from cancer in 1921 numbered 1,467, and represented a death rate of 954 per million of the whole population, as compared with rates of 908 in the previous year, 870 in 1919, 942 in 1918, 925 in 1917, 921 in 1916, 812 in 1915, 830 in 1914, 838 in 1913, 833 in 1908-12, and 584 in 1890-2.

In England, Scotland, and Ireland in 1919 the deaths per million of population from this cause were 1,145, 1,156, and 852 respectively. Cancer death rates, computed in relation to the general population in earlier and later periods, are not fairly comparable owing to the changed age distribution of the people. A more accurate mortality rate is obtained by comparing the deaths with the number of persons in the community of the same sex, in age groups. This has been done for four census periods, when the numbers of the people in age groups were accurately known, and the results are given in the appended table:—

## DEATH RATES FROM CANCER IN AGE GROUPS.

| Age Group.      | Deaths from Cancer per 10,000 of each Sex. |         |          |          |
|-----------------|--|---------|----------|----------|
|                 | 1890-2.                                    | 1900-2. | 1910-12. | 1919-21. |
| <i>Males.</i>   |  |         |          |          |
| Under 5 ...     | ·18  | ·30     | ·73      | ·38      |
| 5 to 10 ...     | ·10  | ·42     | ·25      | ·13      |
| 10 " 15 ...     | ·11  | ·20     | ·16      | ·14      |
| 15 " 20 ...     | ·17  | ·22     | ·15      | ·30      |
| 20 " 25 ...     | ·32  | ·33     | ·71      | ·64      |
| 25 " 35 ...     | ·81  | 1·26    | ·96      | ·65      |
| 35 " 45 ...     | 4·29                                       | 3·69    | 3·16     | 3·34     |
| 45 " 55 ...     | 14·83                                      | 14·14   | 16·03    | 14·02    |
| 55 " 65 ...     | 31·92                                      | 36·00   | 36·36    | 35·25    |
| 65 " 75 ...     | 52·75                                      | 59·04   | 74·15    | 71·72    |
| 75 and over     | 53·55                                      | 74·04   | 88·40    | 101·25   |
| All ages        | 6·16                                       | 7·52    | 8·50     | 8·74     |
| <i>Females.</i> |  |         |          |          |
| Under 5 ...     | ·09  | ·26     | ·19      | ·39      |
| 5 to 10 ...     | ·10  | ·04     | ·10      | ·26      |
| 10 " 15 ...     | ·06  | ..      | ·27      | ...      |
| 15 " 20 ...     | ·12  | ·28     | ·44      | ·31      |
| 20 " 25 ...     | ·22  | ·23     | ·41      | ·15      |
| 25 " 35 ...     | 1·68                                       | 1·61    | 1·39     | 1·28     |
| 35 " 45 ...     | 7·43                                       | 6·05    | 7·26     | 5·50     |
| 45 " 55 ...     | 18·00                                      | 18·13   | 17·87    | 18·69    |
| 55 " 65 ...     | 31·79                                      | 33·05   | 38·03    | 33·25    |
| 65 " 75 ...     | 53·96                                      | 51·18   | 61·66    | 59·33    |
| 75 and over     | 49·55                                      | 62·70   | 86·19    | 87·45    |
| All ages        | 5·57                                       | 6·64    | 8·76     | 9·13     |

Deaths from cancer occur at all age periods, but the rates in the foregoing table show that it is essentially a disease of later life, increasing rapidly in the groups past middle age, and reaching a maximum

mortality rate in the oldest age group. From the figures for the periods 1910-12 and 1919-21 it will be seen that there was in the second period an increase in the death rate from cancer, and, further, the increase was greater among females than males.

**Seat of cancer.**

The following table shows the seat of cancer in persons who died from this disease in 1921 :—

### SEAT OF CANCER.

| Seat of Disease.  | Males. | Females. | Total. |
|---|--------|----------|--------|
| Cancer of the buccal cavity (mouth, &c.) ..             | 81     | 13       | 94     |
| „ the stomach and liver ...                             | 292    | 227      | 519    |
| „ the peritoneum, the intestines,<br>and the rectum ... | 88     | 108      | 196    |
| „ the female genital organs ...                         | ...    | 139      | 139    |
| „ the breast ...  | ...    | 115      | 115    |
| „ the skin ...  | 26     | 19       | 45     |
| „ other and unspecified organs ...                      | 208    | 151      | 359    |
| Total Deaths ...  | 695    | 772      | 1,467  |

Thirty-five per cent. of the persons who died from cancer were affected in the stomach or liver. Of the females who died from the disease one-third were affected in the genital organs or the breast.

**Senile decay.** During the year 1921, the deaths of 638 men and 704 women were ascribed to senile decay. The deaths at ages 65 and over from all causes during the year numbered 5,415—2,764 of men and 2,651 of women.

**Accidental violence.** Death rates from accidental violence have been lower in late years than in earlier periods, a result that is chiefly due to the lighter mortality rate from accidental drowning, the smaller proportion of the population engaged in country occupations, which are generally of a more hazardous nature than those in

towns, and the increasing proportion of females in the community. In 1921 there were 511 male and 184 female deaths attributed to accidents and negligence, which represented a rate of 452 per million of the population. This proportion was 3·0 per cent. above the average rate—439—for the previous five years, but 44 per cent. below the rate—811—for 1890-2. The numbers of deaths from various accidents in 1921 are given in the appended table :—

DEATHS FROM ACCIDENTAL VIOLENCE, 1921.

| Nature or Place of Accident.             | Males. | Females. | Total. |
|--|--------|----------|--------|
| Poisoning by Food .. .. .                | 9      | 3        | 12     |
| Snake Bite .. .. .                       | 3      | 3        | 6      |
| Other Acute Poisonings .. .. .           | 8      | 7        | 15     |
| Burns (including Conflagrations) .. .. . | 31     | 33       | 64     |
| Absorption of Poisonous Gases .. .. .    | 12     | 7        | 19     |
| Suffocation in bed (infants) .. .. .     | 8      | 12       | 20     |
| Drowning .. .. .                         | 133    | 39       | 172    |
| Firearms .. .. .                         | 18     | 1        | 19     |
| Falls .. .. .                            | 47     | 8        | 55     |
| In Mines and Quarries .. .. .            | 10     | ..       | 10     |
| Machines .. .. .                         | 8      | ..       | 8      |
| Vehicular Accidents—                     |        |          |        |
| On Railways .. .. .                      | 48     | 7        | 55     |
| Motor Car .. .. .                        | 24     | 9        | 33     |
| Motor Cycle .. .. .                      | 5      | ..       | 5      |
| Motor Lorry .. .. .                      | ..     | ..       | ..     |
| Aeroplane .. .. .                        | 3      | 1        | 4      |
| Bicycle .. .. .                          | 2      | 2        | 4      |
| Tram Car .. .. .                         | 19     | 4        | 23     |
| Vehicle drawn by Horses .. .. .          | 39     | 8        | 47     |
| Vehicle, Undefined .. .. .               | 7      | ..       | 7      |
| Injuries by Animals .. .. .              | 4      | ..       | 4      |
| Effects of Heat .. .. .                  | 12     | 19       | 31     |
| Excessive Cold .. .. .                   | 2      | 1        | 3      |
| Electricity .. .. .                      | 1      | ..       | 1      |
| Lightning .. .. .                        | ..     | 2        | 2      |
| Fractures, Unspecified .. .. .           | 13     | 9        | 22     |
| Other Violence .. .. .                   | 45     | 9        | 54     |
| Total .. .. .                            | 511    | 184      | 695    |

On the average of the past three years the female mortality rate from accidents was 32 per cent. of the rate for males.

**Fatal accidents among males at different ages.**

The mortality rate from accidents is only one-half as great among males aged 15 to 45 as among men over that age. The deaths per 10,000 males at certain ages from drowning, and other accidents for the period 1919-21 were as follows :—

### DEATH RATES FROM ACCIDENTS—MALES, 1919-21.

|                    | Accidental Deaths per 10,000 Males Aged— |        |        |        |        |        |              |                 |
|--------------------|--|--------|--------|--------|--------|--------|--------------|-----------------|
|                    | 15-20.                                   | 20-25. | 25-35. | 35-45. | 45-55. | 55-65. | 65 and over. | 15 and upwards. |
| Drowning ..        | 2·27                                     | 1·29   | 1·07   | 1·15   | 1·25   | 1·76   | 2·04         | 1·43            |
| Other Accidents .. | 4·08                                     | 4·98   | 4·49   | 5·22   | 6·01   | 8·29   | 14·87        | 6·00            |
| Total Accidents .. | 6·35                                     | 6·27   | 5·56   | 6·37   | 7·26   | 10·05  | 16·91        | 7·43            |

For men aged 20 to 35 the death rate from accidental violence is about one-third of that for men over age 65 and slightly more than one-half of the rate for those aged 55 to 65.

**Occupations of men dying from accidents.**

During the year 1921, 378 males aged seventeen years and upwards died from the results of accidents. The numbers for the different occupations were as follows :—

| Occupation.                  | Deaths from Accidents, 1921. | Occupation.            | Deaths from Accidents, 1921. |
|------------------------------|------------------------------|------------------------|------------------------------|
| Labourer (undefined) ..      | 76                           | Engineer .. ..         | 3                            |
| Farmer, grazier .. ..        | 40                           | Manager .. ..          | 3                            |
| Carter, carrier, driver ..   | 17                           | Market gardener ..     | 3                            |
| Railway employee .. ..       | 14                           | Traveller .. ..        | 3                            |
| Clerk .. ..                  | 14                           | Seaman .. ..           | 2                            |
| Carpenter .. ..              | 10                           | Soldier .. ..          | 2                            |
| Miner .. ..                  | 8                            | Builder, contractor .. | 2                            |
| Sawyer, timber-worker ..     | 6                            | Electrician .. ..      | 2                            |
| Wharf labourer, stevedore .. | 5                            | Clergyman .. ..        | 2                            |
| Painter .. ..                | 5                            | Salesman .. ..         | 2                            |
| Engine-driver .. ..          | 5                            | Wool worker .. ..      | 2                            |
| Blacksmith .. ..             | 4                            | Others (specified) ..  | 109                          |
| Horse-trainer, jockey ..     | 4                            | Unspecified .. ..      | 27                           |
| Storeman .. ..               | 4                            |                        |                              |
| Agent .. ..                  | 4                            | Total .. ..            | 378                          |

Of the above 378 deaths 84 were due to drowning.

**Suicide.** In the year 1921, 129 males and 23 females took their own lives. The deaths represented a rate of 99 per million of the population, as compared with rates of 95 in the preceding year, 89 in 1919, 72 in 1918, 88 in 1917, 83 in 1916, 105 in 1915, 90 in 1914, 103 in 1913, 102 in 1908-12, and 109 in 1890-2. A much lower rate from suicide obtains among females than males, the rate for the former being one-fourth of that for the latter on the average of the past five years.

**Homicide.** The deaths ascribed to homicide in 1921 numbered 22, of which 11 were of males and 11 of females. These represented a rate of 14 per million of the population, as against rates of 12 in 1920, 18 in 1919, 13 in 1918 and 1917, 14 in 1916, 17 in 1915, 16 in 1914, 18 in 1913, and 19 in 1908-12.

**Deaths of married women in childbed.** The death rate of women in childbed varies considerably at different ages, and is less at younger than at older age periods. The number of deaths of married mothers in childbed, and the death rates in various age groups are shown for the decade 1906-15 and the year 1921 in the following table:—

DEATH RATES OF MARRIED MOTHERS IN CHILDBED IN AGE GROUPS, 1906-1915 AND 1921.

| Age Group.              | Married Mothers. |       |                                |       |
|-------------------------|------------------|-------|--------------------------------|-------|
|                         | Deaths.          |       | Deaths per 1,000 Confinements. |       |
|                         | 1906-15.         | 1921. | 1906-15.                       | 1921. |
| Under 20 years .. ..    | 23               | 5     | 2·71                           | 5·32  |
| 20 to 25 " .. ..        | 184              | 34    | 2·85                           | 4·94  |
| 25 " 30 " .. ..         | 326              | 48    | 3·60                           | 4·61  |
| 30 " 35 " .. ..         | 334              | 31    | 4·59                           | 3·72  |
| 35 " 40 " .. ..         | 346              | 29    | 6·86                           | 5·92  |
| 40 years and over .. .. | 156              | 16    | 6·90                           | 8·02  |

The experience of the ten years 1906-15 shows that for the age period 35 years and upwards the deaths of mothers in childbed were 69 per 10,000 as against 37 per 10,000 for those under 35 years of age. For the same term of years the number of deaths per 1,000 married women of all ages in first confinements was 5·57, as against an average of 4·04 for other confinements.

The death rate of women in childbed is usually ascertained by comparing the number of deaths of parturient women with the total number of births. The proportions 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.

| Period.      | Number of Mothers who Died Annually of—                  |                       |        | Deaths of Mothers to every 10,000 Children Born Alive. |
|--------------|--|-----------------------|--------|--|
|              | Puerperal Diseases or Accidents. (Excluding Septicæmia.) | Puerperal Septicæmia. | Total. |  |
| 1871-1880 .. | 127  | 46                    | 173    | 64·38  |
| 1881-1890 .. | 121  | 64                    | 185    | 59·19  |
| 1891-1900 .. | 117  | 66                    | 183    | 56·01  |
| 1901-1905 .. | 126  | 58                    | 184    | 60·92  |
| 1906-1910 .. | 101  | 46                    | 147    | 47·17  |
| 1911-1915 .. | 96   | 58                    | 154    | 43·55  |
| 1916 ..      | 75   | 55                    | 130    | 37·97  |
| 1917 ..      | 89   | 45                    | 134    | 40·56  |
| 1918 ..      | 64   | 43                    | 107    | 33·86  |
| 1919 ..      | 95   | 39                    | 134    | 42·38  |
| 1920 ..      | 132  | 62                    | 194    | 53·57  |
| 1921 ..      | 105  | 58                    | 163    | 45·80  |

In recent periods a marked reduction has taken place in the death rate of women in childbed. The deaths of mothers per 10,000 children born alive were 43·23 in 1917-21, as compared with 43·5 in 1911-15, 47·2 in 1906-10, and 60·9 in 1901-5.

In 1921 there were 58 deaths of married and unmarried mothers from puerperal septicæmia, which corresponded to a death rate of 16·3 per 10,000 births, as against 17·1 in 1920, 12·3 in 1919, 13·6 in 1918 and 1917, 16·1 in 1916, 11·4 in 1915, 16·8 in 1914, 18·1 in 1913, 16·0 in 1908-12, and 18·1 in 1901-7.

## NATURAL INCREASE.

The natural increase, *i.e.*, the excess of births over deaths, per 1,000 of the population, in the various Australian States and New Zealand, for the periods 1902-6, 1907-11, and 1912-16, and for each of the last five years, is shown in the following table :—

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

| Period.      | Victoria. | New South Wales. | Queensland. | South Australia. | Western Australia. | Tasmania. | Australia. | New Zealand. |
|--------------|-----------|------------------|-------------|------------------|--------------------|-----------|------------|--------------|
| 1902-6       | 12·30     | 15·76            | 15·41       | 13·28            | 18·04              | 18·12     | 14·68      | 16·94        |
| 1907-11      | 13·05     | 17·45            | 17·03       | 15·54            | 18·13              | 18·85     | 16·01      | 17·07        |
| 1912-16      | 13·72     | 18·04            | 18·51       | 17·21            | 18·65              | 19·62     | 16·82      | 16·70        |
| 1917         | 13·09     | 18·13            | 19·37       | 15·74            | 16·71              | 18·57     | 16·56      | 16·08        |
| 1918         | 11·53     | 16·42            | 17·72       | 15·43            | 13·88              | 17·54     | 15·01      | 8·60         |
| 1919         | 8·31      | 11·10            | 13·58       | 11·92            | 10·47              | 15·21     | 10·84      | 12·03        |
| 1920         | 12·82     | 15·97            | 16·47       | 14·27            | 14·45              | 17·60     | 14·95      | 15·10        |
| 1921         | 12·64     | 16·43            | 17·25       | 14·05            | 12·99              | 16·67     | 15·04      | 14·61        |
| Mean 1917-21 | 11·68     | 15·61            | 16·88       | 14·28            | 13·70              | 17·12     | 14·48      | 13·28        |

The smallness of the natural increase in 1919 was very largely due to a heavy mortality rate from influenza in that year. The mean increase in the Australian States for the period 1917-21 was 14·48 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. It has been shown in a previous paragraph that the Victorian death rates at nearly all periods of life are below those of England and Wales. The Australian annual rate of increase due to excess of births over deaths—14·48—would enable a population to double itself in slightly more than 48 years, whilst at the Victorian rate of 11·68 per 1,000 of population a period of 60 years would be required. In England and Wales in 1921 the excess of births over deaths was 10·3 per 1,000 of population.

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