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HEALTH DEPARTMENT.

REPORT

ON THE HEALTH OF THE

CITY OF LIVERPOOL

DURING THE YEAR

1920

WITH OBSERVATIONS UP TO JUNE 30TH, 1921.

BY

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LIVERPOOL.


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1921.

HEALTH DEPARTMENT
REPORT
CITY OF LIVERPOOL
1920



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Deaths of Soldiers and Sailors of H.M. Forces
Total Deaths registered in the City.



PREFACE.

During the year 1920, to which in the main the present Report relates, two statistical facts stand out prominently. The first is that the actual number of births registered has been the highest ever recorded in the City, and although the *birth rate* of 32 per thousand of population is by no means the highest, yet it shows that the decline in the rate during the later years of the war has been followed by a return to more normal conditions. The second outstanding fact is that the death rate, namely 16·4, is the lowest ever recorded in the City. These figures are based on an estimated population which has not been varied during the last four years, and the probability is that the census of 1921 will show that the population is under-estimated. Should this be the case, the actual death rate will be even lower than the figure given. As would naturally be inferred from the lowered rates of mortality, the returns relating to sickness, more especially the prevalence of notifiable diseases, exhibit a decline in almost every instance. The table on page 60 is particularly instructive, showing as it does at a glance the decline of the forms of notifiable disease *pari passu* with the more precise application of preventive measures. It is noteworthy that the decline is most marked in what were once regarded as the more formidable forms of disease, and is least pronounced in those forms of disease which, unhappily, many who ought to know better, still regard as trifling, such, for example, as measles and whooping cough, yet measles and whooping cough have in recent years in Liverpool destroyed more than twice as many lives as all of the other forms of infectious disease, excluding phthisis, put together. In the Parliamentary Bill now introduced into Parliament, clauses are inserted which, if approved, will strengthen the measures available for the prevention of these two forms of illness.

The progressive decline of recent years in infant mortality is another encouraging feature. Many sanitary measures have contributed to it, and references will be found to these measures in the section of the Report relating to the subject. It is quite true that they are costly, and difficult of application, and to a large extent dependent upon

educational methods conducted at the various ante-natal and post-natal clinics. It is hardly necessary to point out that the immediate saving of life is not the only reward for the efforts put forward. There is coincidently an immense saving of avoidable sickness and suffering, a saving which does not lend itself either to diagrammatical or statistical demonstration; nor must the effect upon the future life of the community be lost sight of. The scheme embraces not only the amelioration of motherhood and infancy, but the whole of child life up to school age; a systematic inspection of school children does, as a matter of fact, form part of it.

To say that the position in regard to the prevention of venereal disease is not satisfactory would be to gravely understate the position. This form of disease alone amongst all the infections is the only one which is unfettered, and against which no really effective measures have been applied, yet it is most destructive to life and health, and is transmissible to a future generation, a characteristic which is shared by no other infectious disease, excepting perhaps smallpox, and by it only to a very limited extent. The fringe of prevention has been touched by the provision at great expenditure of public funds, and under the most skilled guidance, of free treatment at each of the leading hospitals in the City. The diseased person may attend if he chooses, and for as long as he chooses. The skill and the money expended do unquestionably result in alleviating a great deal of suffering, and may to a small extent limit the spread of the disease. But the failure of the system is manifest: 60 per cent. of the patients cease to attend as soon as the grosser symptoms disappear, but long before they are free from infection. The fatuousness of expecting that any measure so crippled in its application can be successful, will be realised by visualizing a similar state of affairs in regard to smallpox or scarlet fever. Patients flock to the treatment centres for the relief of physical suffering, and leave them as soon as that condition is over. The interests of the public and the sufferer alike call for a graver consideration of the subject than it has hitherto had. The various Committees of the Council dealing with health matters have expressed their views on the subject in no uncertain terms, but opposition to the application of preventive measures in the case of this disease still lingers, and many still think that the problem will be solved by cinema shows and ablution centres.

But it is not only in the case of the ordinary infectious diseases that the exceptional necessities of Liverpool receive recognition. Even in the case of tuberculosis, when the condition and conduct of a tuberculous patient render him a menace to his associates, Parliament has, so far as Liverpool is concerned, sanctioned segregation and control—compulsory segregation and control if need be—notwithstanding the possible or probable duration of the illness. In the case of venereal infection such measures are additionally necessary since, as is too often the case, the infected person is deliberately pursuing a course of life which must render the infection of others inevitable.

The suggestion that the value of moral teaching may be disparaged by legislative proposals, can be dismissed. There is nothing in the proposals to hamper or restrict moral teaching. The proposal that special legislation should apply to the whole of the Port is a wise one, but it must be borne in mind that areas merely abutting on the Port area, and not sharing any of the conditions and liabilities of a Port, cannot be expected to take the same active interest in the question as the rest; just as industrial legislation whilst always possessing great significance in the great industrial centres, can excite only a reflected or sympathetic interest in areas where no industrial enterprises are carried on.

It must be borne in mind in scanning a report upon the health of a great city, that the progress made can only be adequately realised by comparisons with the records of the same city in past years. It is only by this means that the conditions under which large numbers of the population have lived, and the heavy toll which those conditions exacted in sickness and death, can be understood, and the progress now being made can be adequately realised.

E. W. HOPE,

MEDICAL OFFICER OF HEALTH.

PUBLIC HEALTH DEPARTMENT,

MUNICIPAL BUILDINGS,

LIVERPOOL, *1st July*, 1921.

STATISTICS

RELATING TO

BIRTHS, DEATHS, AND CAUSES OF DEATH, &c.,

ZYMOTIC DISEASES AND THEIR INCIDENCE.

SUMMARY

OF

VITAL STATISTICS FOR 1920.

Area of City	21,219	Acres.
		(33 square miles)
Population (estimated to the middle of the year)	781,948	
Births	25,039,	Birth-rate 32.0.
Deaths	12,852,	Death-rate 16.4.
Infantile Mortality	2,826	Deaths under one year.
Infant Mortality Rate	113	per 1,000 Births.
Zymotic Death-rate (7 principal Zymotic Diseases)	1.4	per 1,000.
All forms of Tuberculosis (including Phthisis)	1.7	per 1,000.
Phthisis Death-rate	1.4	per 1,000.

BIRTHS.

The number of births recorded during the year 1920 within the City was 25,039, equal to a rate of 32·0 per 1,000 of the population, the average of the previous five years (1915-1919) being 24·6. The rates are calculated upon an estimated population of 781,948, which is somewhat below the estimate made by the Registrar General, viz., 803,452. The coming Census will enable a correct population figure to be given in the next Report. Of the total births, 12,811 were males and 12,228 were females. The number of illegitimate births was 1,019, or 4·1 per cent. of the total births, 508 being males and 511 females.

The Registrar General intimated that 131 of the births registered in the City should be deducted as non-resident, and this has accordingly been done, the above figures being the net numbers after the deduction has been made.

The birth-rate in the City of Liverpool is considerably above the average of the great towns, which is 26·3 per 1,000 of the population, as well as of England and Wales taken as a whole, where the rate is 25·4 per 1,000 for the year 1920.

The rise in the birth-rate, which began to be so noticeable during the latter part of the year 1919, continued until about the middle of the third quarter of the year, when the weekly figures then showed a tendency to return to the normal rate of pre-war years.

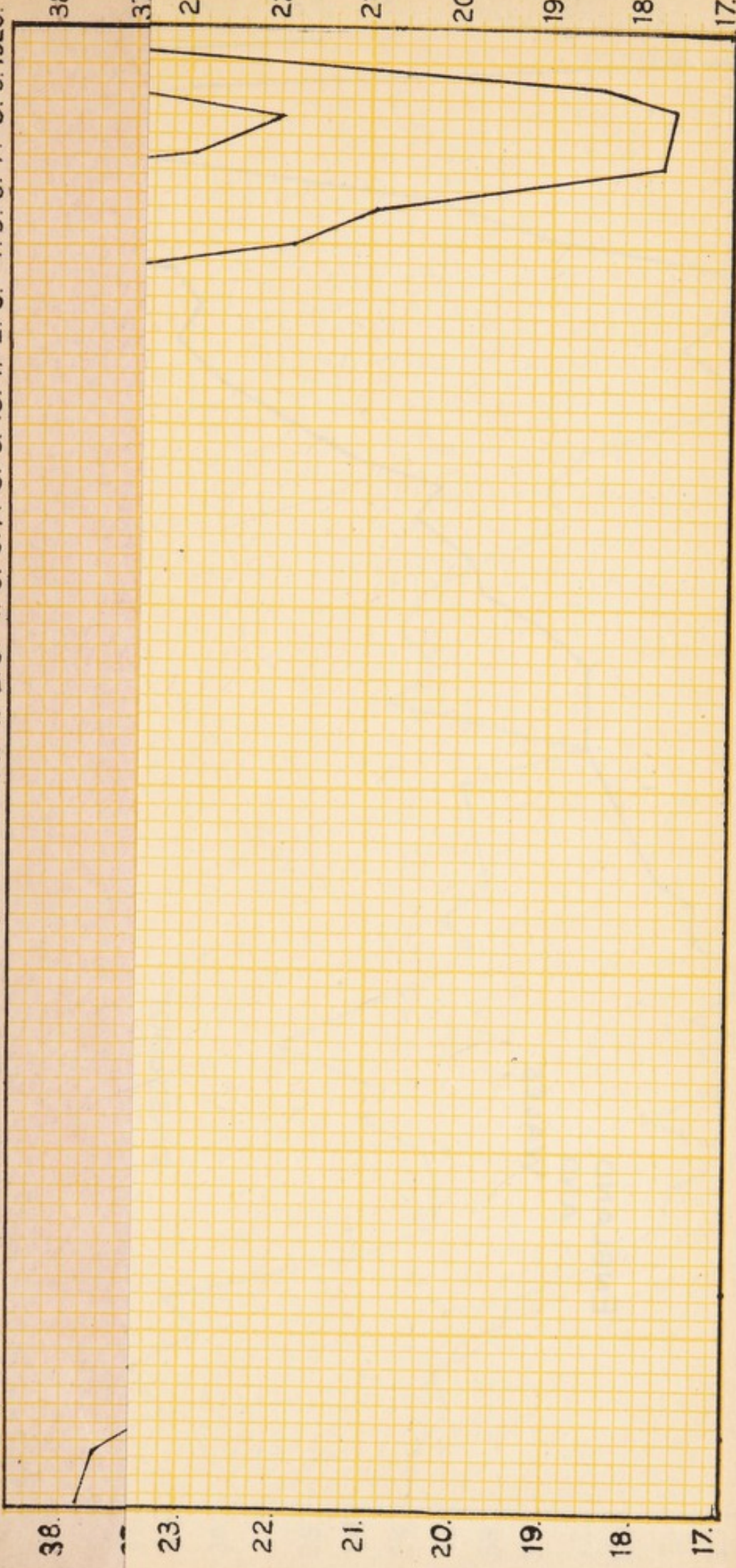
The following statement will show the increase in the birth-rate and the number of births registered in the City for the last two years:—

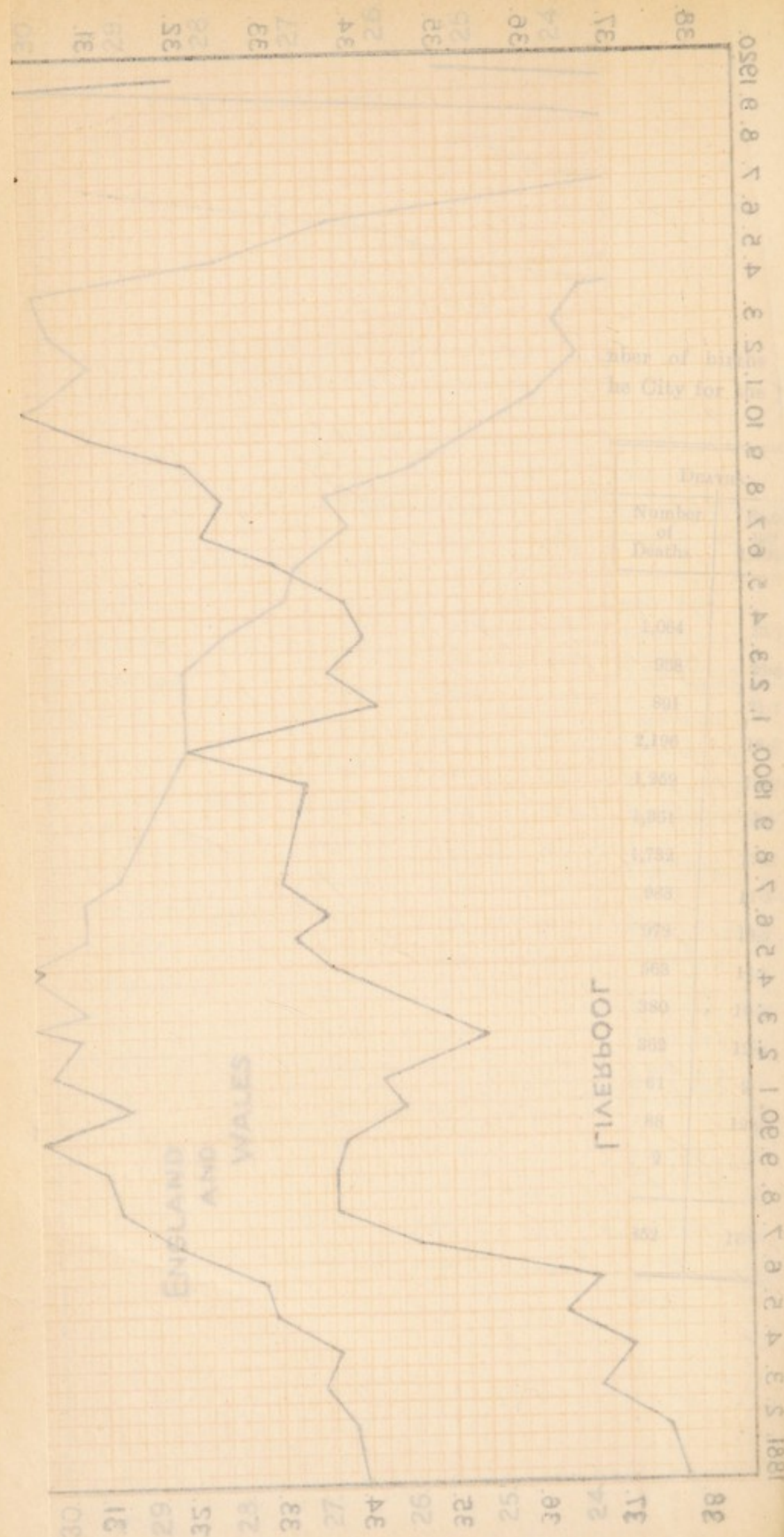
		Actual Births.		Rate.		Actual Increase
1919	...	18,694	...	23·9	...	1,561
1920	...	25,039	...	32·0	...	6,345

The following table shows the population, number of births and deaths, and the rates per 1,000 in each district of the City for the year 1920:—

Districts.	Estimated Population	BIRTHS.		DEATHS.	
		Number of Births.	Rate per 1,000.	Number of Deaths.	Rate per 1,000.
SCOTLAND	44,542	1,889	42.4	1,064	23.7
EXCHANGE	35,573	1,235	34.7	938	26.4
ABERCROMBY	42,219	1,281	30.3	891	21.1
EVERTON	120,150	4,540	37.8	2,196	18.3
KIRKDALE	66,933	2,307	34.5	1,259	18.8
WEST DERBY (WEST) ...	85,077	3,014	35.4	1,361	16.0
TOXTETH	100,259	3,664	36.5	1,732	17.3
WALTON	86,824	2,119	24.4	983	11.3
WEST DERBY (EAST) ...	73,101	2,088	28.6	972	13.3
WAVERTREE	48,445	1,090	22.5	563	11.6
TOXTETH (EAST)... ..	36,611	771	21.0	380	10.4
GARSTON	28,764	766	26.6	362	12.5
FAZAKERLEY	6,482	107	16.5	61	9.4
WOOLTON	6,968	168	24.1	88	12.6
NO ADDRESS ... ..	...	...	...	2	...
	781,948	25,039	32.0	12,852	16.4

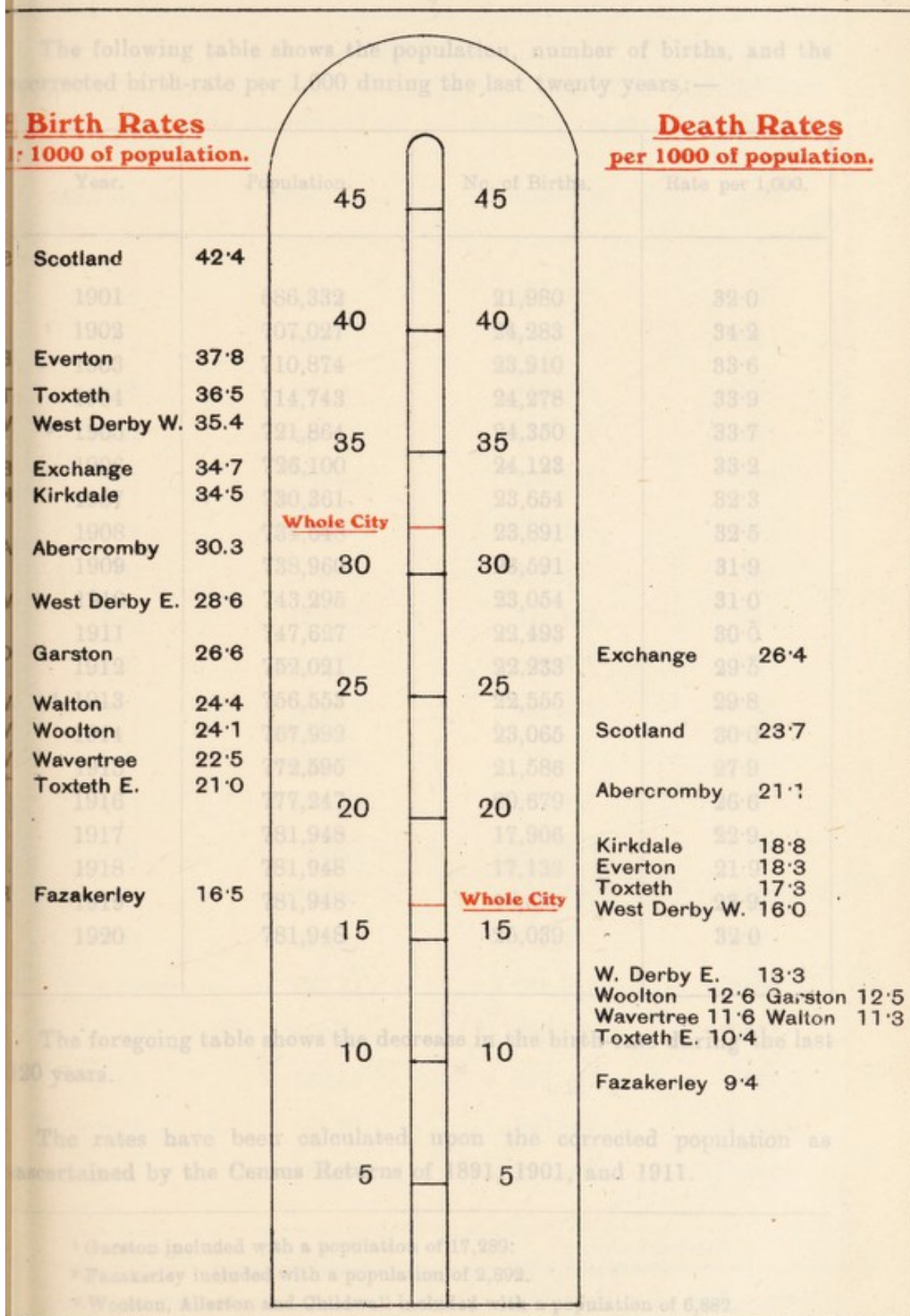
1881. 2. 3. 4. 5. 6. 7. 8. 9. 90. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 1. 2. 3. 4. 5. 6. 7. 8. 9. 1920.





CITY OF LIVERPOOL.

Comparative view of the Birth and Death Rates per 1,000 in the different districts of the City during the year 1920.



Deaths in Public Institutions are transferred to the Districts from whence the Patients came.

DEATHS.

The following table shows the population, number of deaths, and the corrected death-rate per 1,000 during the last twenty years:—

| Year. | Population. | No. of Deaths. | Rate per 1,000. |
|-------------------|-------------|----------------|-----------------|
| 1901 | 686,332 | 14,879 | 21·6 |
| ¹ 1902 | 707,027 | 15,396 | 21·7 |
| 1903 | 710,874 | 14,240 | 20·0 |
| 1904 | 714,743 | 15,851 | 22·1 |
| ² 1905 | 721,864 | 14,103 | 19·5 |
| 1906 | 726,100 | 15,001 | 20·6 |
| 1907 | 730,361 | 13,676 | 18·7 |
| 1908 | 734,648 | 13,930 | 18·9 |
| 1909 | 738,960 | 13,945 | 18·8 |
| 1910 | 743,295 | 13,343 | 17·9 |
| 1911 | 747,627 | 14,607 | 19·5 |
| 1912 | 752,021 | 13,364 | 17·7 |
| ³ 1913 | 756,553 | 13,658 | 18·0 |
| 1914 | 767,992 | 15,046 | 19·5 |
| 1915 | 772,595 | 14,478 | 18·7 |
| 1916 | 777,247 | 13,943 | 17·9 |
| 1917 | 781,948 | 13,093 | 16·7 |
| 1918 | 781,948 | 15,267 | 19·5 |
| 1919 | 781,948 | 13,283 | 17·0 |
| 1920 | 781,948 | 12,852 | 16·4 |

¹ Garston included.

² Fazakerley included.

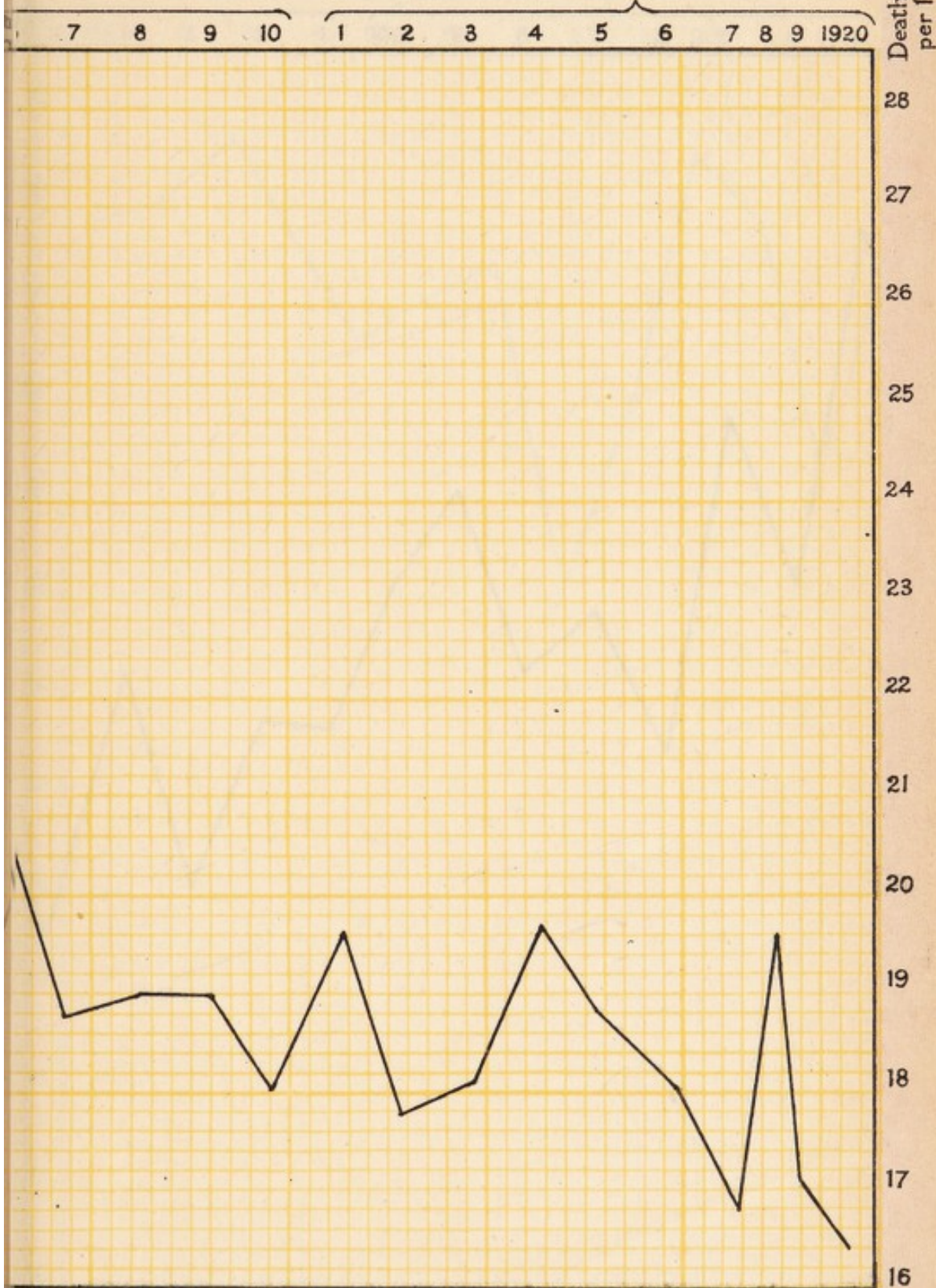
³ Woolton, Allerton and Childwall included.

NOTE.—The rates have been calculated upon the corrected population as ascertained by the Census Returns of 1891, 1901, and 1911.

-1920.

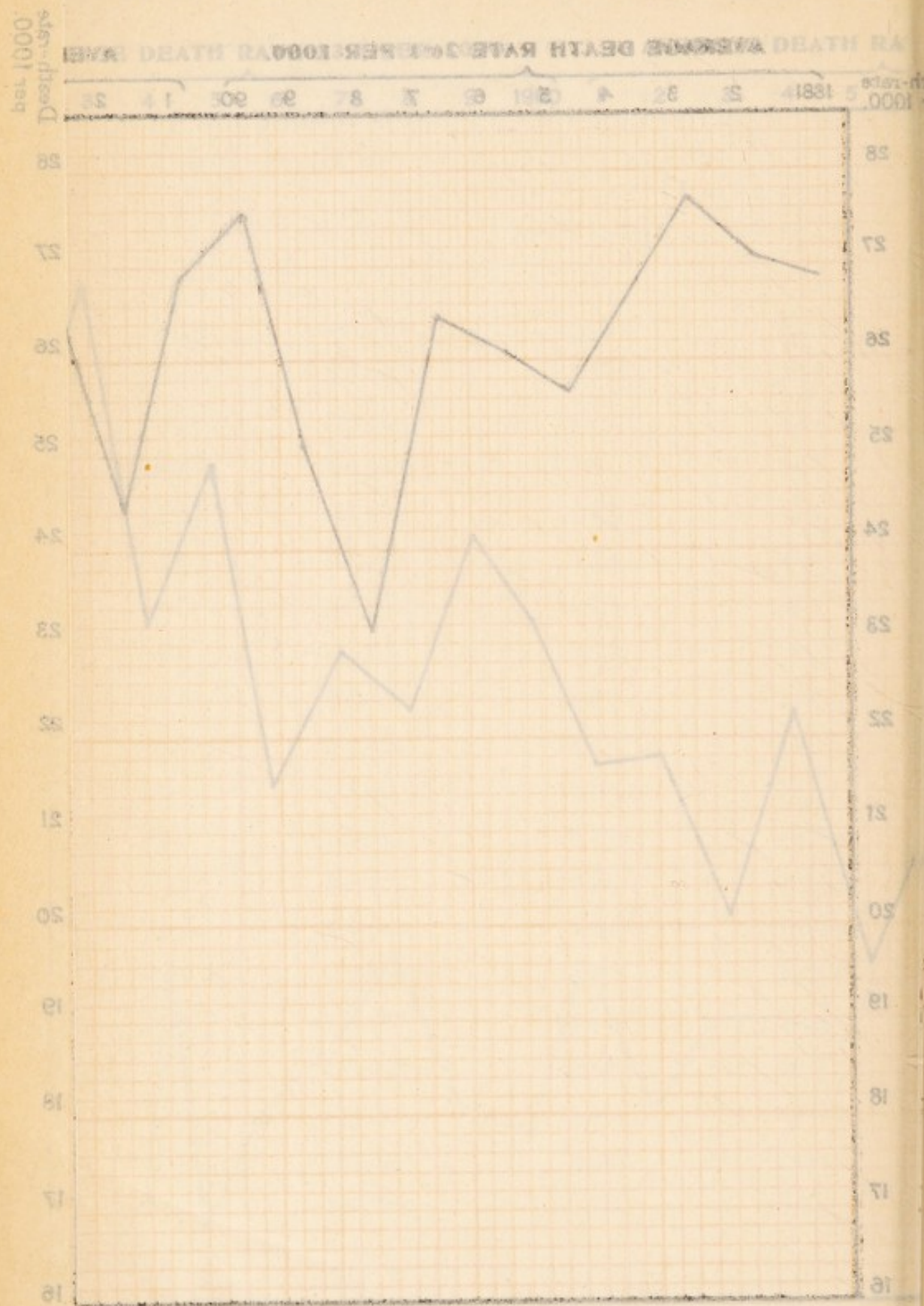
E 20.0 PER 1000.

AVERAGE DEATH RATE 18.1 PER 1000.



CITY OF LIVERPOOL.

DEATH RATE, 1881



The accompanying table (pages 8 and 9) shows the deaths that have occurred in the City of Liverpool during the past 50 years. These have been separated into five principal classes of disease that are likely to be affected by the activities of the Health and other Municipal departments, namely: "Infective" Diseases, Tubercular Diseases, Respiratory Diseases (including Influenza), and Digestive Diseases (including Diarrhœa and Enteritis). These classes include practically all diseases of infective origin. The deaths from Cancer are placed in a separate column.

Despite the very great increase in population since 1871, the present population being approximately nearly double the 1871 population, the actual numbers of deaths per annum has fallen from an average of 14,700 in the decennium 1871-1880 to 12,852 in the year 1920. The death-rate has fallen from 28·5 to 16·4 per thousand, a fall of 39 per cent.

The greatest proportional decline has been experienced in the group of Infective Diseases, which includes all the infectious diseases with the exception of Influenza; the decline has been steady and uniform, and the deaths now registered in this group exhibit a decline of no less than 79 per cent. during the 50 years.

A similarly steady decline has been shown by the Tubercular Diseases, which have fallen to 47 per cent. of the earlier figure.

In the group of Respiratory Diseases, although a decline has occurred, it has not been continuous, rises occurring in 1881-90 and in 1911-20, due in both cases to the prevalence of Influenza. Although an actual decline in Respiratory deaths has occurred this decline is not commensurate with that recorded in deaths from all causes, and the proportion of respiratory to total deaths has risen from 20·2 to 28·1 per cent. during the period under review.

Digestive Diseases, of which the Diarrhœa and other Digestive Diseases of infants form by far the most important section, showed at first a slight decline from 1871 to 1890; in 1891-1900 there was a rise to 107 per cent. of the rate experienced in 1871-80. From that time on there has been a most marked and rapid decline from 107 to 37 per cent. of the 1871-80 mortality; this decline coincides in time with the great efforts that have been put forward in this City for the prevention of Infantile mortality.

In marked contrast with the decline in these preventable diseases is the rise in Cancer mortality. As little is known of its causation it is not amenable to preventive measures.

CITY OF LIVERPOOL.

DEATHS FROM CERTAIN GROUPS OF DISEASES IN EACH DECADE FROM 1871 to 1920.

| Years. | (a)
Infective
diseases
(less Diarrhoea
and Influenza). | (b)
Tubercular
diseases. | (c)
Respiratory
diseases
(including
Influenza). | (d)
Digestive
diseases
(including
Diarrhoea). | Total Deaths
from Classes
(a),(b), (c) & (d) | (e)
Cancer. | Total Deaths
from all causes. |
|-----------------|--|--------------------------------|---|---|--|----------------|----------------------------------|
| 1871-1880 | 27,205 | 19,869 | 29,763 | 14,747 | 91,584 | 2,015 | 147,005 |
| 1881-1890 | 19,748 | 17,870 | 32,507 | 13,186 | 86,311 | 2,820 | 146,195 |
| 1891-1900 | 13,515 | 16,714 | 35,819 | 18,491 | 84,539 | 4,223 | 145,522 |
| 1901-1910 | 13,967 | 16,054 | 32,995 | 18,163 | 81,179 | 6,480 | 150,962 |
| 1911-1920 | 10,417 | 14,946 | 36,480 | 12,282 | 74,125 | 7,603 | 137,223 |
| 1920 | 895 | 1,268 | 3,570 | 821 | 6,554 | 846 | 12,852 |

∞

DEATHS EXPRESSED AS A PERCENTAGE OF TOTAL DEATHS FROM ALL CAUSES (Proportionate Mortality).

| | | | | | | | |
|-----------------|------|------|------|------|------|-----|-------|
| 1871-1880 | 19.2 | 13.5 | 20.2 | 10.0 | 62.3 | 1.4 | 100.0 |
| 1881-1890 | 14.1 | 12.7 | 23.2 | 9.4 | 59.4 | 2.0 | 100.0 |
| 1891-1900 | 9.3 | 10.8 | 24.6 | 12.7 | 57.4 | 2.9 | 100.0 |
| 1901-1910 | 8.6 | 10.6 | 21.8 | 12.0 | 53.0 | 4.3 | 100.0 |
| 1911-1920 | 7.9 | 10.9 | 27.3 | 8.9 | 55.0 | 5.5 | 100.0 |
| 1920 | 6.9 | 9.9 | 28.1 | 6.4 | 51.3 | 6.6 | 100.0 |

DEATH RATES PER 1000 POPULATION.

| Years. | (a)
Infective
diseases
(less Diarrhoea
and Influenza). | (b)
Tubercular
diseases | (c)
Respiratory
diseases
(including
Influenza). | (d)
Digestive
diseases
(including
Diarrhoea). | Total Deaths
from Classes
(a), (b), (c) & (d) | (e)
Cancer. | Total Deaths
from all causes. |
|-----------------|--|-------------------------------|---|---|---|----------------|----------------------------------|
| 1871-1880 | 5.2 | 3.6 | 5.7 | 2.8 | 17.4 | 0.4 | 28.5 |
| 1881-1890 | 3.6 | 3.2 | 5.9 | 2.4 | 15.6 | 0.5 | 26.1 |
| 1891-1900 | 2.2 | 2.7 | 5.9 | 3.0 | 13.8 | 0.7 | 23.9 |
| 1901-1910 | 1.9 | 2.2 | 4.5 | 2.5 | 11.1 | 0.9 | 20.0 |
| 1911-1920 | 1.35 | 1.9 | 4.76 | 1.6 | 9.8 | 1.0 | 18.1 |
| 1920 | 1.1 | 1.7 | 4.6 | 1.05 | 8.4 | 1.2 | 16.4 |

DEATH-RATES EXPRESSED AS A PERCENTAGE OF THE RATES EXPERIENCED IN 1871-1880 (Index Numbers).

| | | | | | | | |
|-----------------|-------|-------|-------|-------|-------|-------|-------|
| 1871-1880 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1881-1890 | 69.0 | 88.0 | 104.0 | 85.7 | 89.1 | 125.0 | 91.0 |
| 1891-1900 | 42.0 | 75.0 | 104.0 | 107.2 | 79.3 | 175.0 | 84.0 |
| 1901-1910 | 36.0 | 61.0 | 79.0 | 89.3 | 64.3 | 225.0 | 70.0 |
| 1911-1920 | 26.0 | 50.0 | 83.0 | 56.7 | 56.0 | 250.0 | 67.0 |
| 1920 | 21.0 | 47.0 | 79.0 | 37.5 | 48.3 | 300.0 | 61.0 |

THE FOLLOWING TABLE SHOWS THE ANNUAL RATE OF MORTALITY PER 1,000 AS WELL AS THE TOTAL NUMBER OF DEATHS AT EACH OF TWELVE AGE-PERIODS DURING THE YEAR 1920 IN LIVERPOOL.

THE DIFFERENCES WHICH THE FIGURES SHOW ARE VERY STRIKING:—

| 1920. | *
Under
1
year. | 1
to
2 | 2
to
5 | 5
to
10 | 10
to
20 | 20
to
30 | 30
to
40 | 40
to
50 | 50
to
60 | 60
to
70 | 70
to
80 | 80
and
up-
wards. | Total
at
all
Ages. |
|---|--------------------------|--------------|--------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------------------|-----------------------------|
| Rate of Mortality per
1,000 living at ages
indicated. | 113.0 | 47.0 | 10.9 | 3.7 | 3.3 | 5.0 | 6.8 | 13.2 | 25.4 | 47.0 | 95.8 | 215.0 | 16.4 |
| Total Number of
Deaths at each
Age-Period. | 2826 | 847 | 625 | 324 | 488 | 642 | 851 | 1152 | 1451 | 1644 | 1471 | 531 | 12852 |
| Approximate
Population | 19738 | 18008 | 57315 | 87265 | 147528 | 130667 | 123870 | 87562 | 57141 | 35039 | 15346 | 2469 | 781948 |

* Column I. indicates the rate of mortality under one year per 1,000 births during the year.

The total death-rate of the City during the year was 16·4 per 1,000 of the estimated population, the average rate of the preceding five years (1915-1919) being 17·6. Full statistical details in regard to the various causes of death are set out in the tables to be found in the Appendix.

The deaths in public institutions numbered 5,500, and included 650 persons who were either non-residents in the City area or non-civilians. The number of deaths in the various institutions are shown in the following table:—

| | | | | | Total
Deaths. | Non-resident
or non-civilian. |
|------------------------------------|-----|-----|-----|-----|------------------|----------------------------------|
| Parish Institution (Brownlow Hill) | ... | ... | ... | ... | 1,028 | 11 |
| Royal Infirmary | ... | ... | ... | ... | 288 | 107 |
| Children's Infirmary | ... | ... | ... | ... | 269 | 43 |
| Maternity Hospital | ... | ... | ... | ... | 58 | 14 |
| Consumption Hospital | ... | ... | ... | ... | 15 | 4 |
| Hahnemann Hospital | ... | ... | ... | ... | 12 | 1 |
| Samaritan Hospital | ... | ... | ... | ... | 8 | 3 |
| Eye and Ear Infirmary | ... | ... | ... | ... | 14 | 11 |
| David Lewis Northern Hospital | ... | ... | ... | ... | 224 | 54 |
| Stanley Hospital | ... | ... | ... | ... | 115 | 32 |
| Royal Southern Hospital | ... | ... | ... | ... | 195 | 43 |
| Mill Road Infirmary | ... | ... | ... | ... | 775 | 48 |
| Hospital for Women | ... | ... | ... | ... | 13 | 10 |
| City Hospital North | ... | ... | ... | ... | 33 | 3 |
| Do. South | ... | ... | ... | ... | 19 | — |
| Do. East, Mill Lane | ... | ... | ... | ... | 140 | 2 |
| Do. Fazakerley | ... | ... | ... | ... | 99 | 10 |
| Do. Sparrow Hall | ... | ... | ... | ... | — | — |
| Do. Garston | ... | ... | ... | ... | 24 | — |
| Sanatorium Fazakerley | ... | ... | ... | ... | 54 | — |
| Do. Parkbill | ... | ... | ... | ... | 122 | 2 |
| Carried forward | ... | ... | ... | ... | 3,505 | 398 |

| | | | | |
|--------------------------------------|-----|-----|-------|-----|
| Brought forward | ... | ... | 3,505 | 398 |
| Walton Institution (Rice Lane) | ... | ... | 988 | 174 |
| Belmont Road Institution | ... | ... | 118 | 16 |
| Cottage Homes, Wavertree | ... | ... | 24 | — |
| Highfield Infirmary | ... | ... | 2 | — |
| St. Joseph's Home | ... | ... | 27 | 8 |
| Toxteth Institution (Smithdown Road) | ... | ... | 455 | 6 |
| Home for Incurables | ... | ... | 7 | 2 |
| House of Providence | ... | ... | 8 | 5 |
| Tuebrook Villa Asylum | ... | ... | 3 | — |
| Turner Memorial Home | ... | ... | 10 | 1 |
| St. Augustine's Home | ... | ... | 16 | 4 |
| Kirkdale Homes | ... | ... | 2 | — |
| Alder Hey Hospital | ... | ... | 268 | 16 |
| H.M. Prison, Walton | ... | ... | 8 | 4 |
| Other Institutions | ... | ... | 59 | 16 |
| | | | 5,500 | 650 |

INFECTIOUS SICKNESS.

The close association of Liverpool with all parts of the world, by reason of the large volume of shipping continually arriving in the port, renders the City peculiarly liable to the importation of various forms of infectious disease. The measures which have been adopted have been successful in preventing any outbreaks of a serious nature obtaining a footing in the City.

The following table shows the number of cases of Infectious Disease notified during 1920, the number of deaths registered from these diseases, the death rates per 100,000 of the population, and the percentage proportion of deaths to cases.

| | Smallpox. | Enteric. | Scarlet Fever. | Measles. | Diphtheria. | Puerperal Fever. | Erysipelas. | Cerebro-spinal Meningitis. | Polio-Myelitis. | Encephalitis Lethargica. | Anthrax. | Whooping Cough. |
|-------------|-----------|----------|----------------|----------|-------------|------------------|-------------|----------------------------|-----------------|--------------------------|----------|-----------------|
| ..... | 9 | 58 | 3,230 | 11,448 | 1,654 | 69 | 505 | 27 | 6 | 17 | 4 | 2,804 |
| ..... | 2 | 8 | 70 | 387 | 188 | 37 | 26 | 18 | — | 2 | 1 | 228 |
| per 100,000 | 0.25 | 1.0 | 8.9 | 49.5 | 24.0 | 147* | 3.3 | 2.0 | — | 0.25 | 0.1 | 29.2 |
| of Deaths | 22.2 | 13.8 | 2.1 | 3.4 | 11.4 | 53.6 | 5.1 | 66.6 | — | 11.7 | 25.0 | — |

* Death rate per 100,000 Births.

It is of interest to compare these figures with the maximum numbers of deaths and death-rates recorded in previous years from some of the epidemic diseases.

| Disease. | Year in which greatest Number of Deaths occurred. | Number of Deaths. | Death rate per 100,000 population. | 1920. | |
|----------------------------|---|-------------------|------------------------------------|---------|-------------|
| | | | | Deaths. | Death rate. |
| Smallpox | 1871 | 1,919 | 387 | 2 | 0.25 |
| Typhus | 1866 | 1,474 | 314 | Nil | Nil |
| Cholera | 1866 | 1,782 | 381 | Nil | Nil |
| Enteric Fever | (and 1,145 deaths from diarrhoea).
1894 | 248 | 46 | 8 | 1.0 |
| Relapsing Fever | 1870 | 155 | 30 | Nil | Nil |
| Scarlet Fever | 1874 | 1,911 | 375 | 70 | 8.9 |
| Measles | 1854 | 725 | 176 | 387 | 49.5 |
| Whooping Cough | 1866 | 991 | 212 | 228 | 29.2 |
| Diphtheria and Croup | 1872 | 647 | 130 | 188 | 24.0 |
| Influenza | 1918 | 1,388 | 177 | 191 | 24.4 |

PLAGUE.

A case of Plague occurred in the City in June. The patient was a female bagmender in a warehouse near the docks, where damaged grain, etc., was stored.

On June 13th the patient complained of illness and was removed to hospital on June 15th, suffering from cerebral and other symptoms. Subsequently the patient developed a bubo. As plague was suspected material was examined by the City Bacteriologist and the Ministry of Health was notified.

The diagnosis was subsequently confirmed, but in spite of every effort as regards treatment the patient died on June 23rd. The usual examination of the premises where the patient worked was made for evidences of dead rats or of rat infestation. The walls, floors and staircases of the warehouse were treated with an insecticide solution, with subsequent cleansing and limewashing of the walls.

Several dead rats found in the warehouse were submitted to bacteriological examination and reported to be plague infected. The complete examination of the premises for evidences of dead rats was carried out, but no further evidences of plague infection were found except in one mouse on July 7th. Since that date regular inspections of the premises and trapping of rats have been carried out with negative results as regards plague. Large numbers of contacts were kept under observation by the medical staff, but no further cases of plague or suspected plague occurred.

SMALLPOX.

This disease was very prevalent in Portugal in the year 1919, and no less than 13 cases occurred in Liverpool in that year, the majority of these being contacts with ship-borne cases, had been under observation, and were promptly isolated on the first development of symptoms. In January, 1920, a vessel arrived in Liverpool from Las Palmas and Lisbon, having on board an apprentice who had gone ashore at Lisbon, and who later developed a rash. The ship's surgeon treated the case as one of chickenpox, and he was subsequently released without reference to the Port Medical Officer, as the former considered him free from infection. It was not until his father and mother both developed smallpox that the true nature of the disease was discovered.

On February 2nd a vessel reached London from Valencia; a seaman proceeded to his home at Garston by rail. He was taken ill on the journey, and the rash of smallpox appeared a few days later. Similarly a vessel reached London from Alexandria and landed a case of smallpox. Later the vessel proceeded to Hull, where certain members of the crew landed and proceeded to Liverpool by train. Two of these men were subsequently removed to Hospital suffering from smallpox.

Three other cases of smallpox were reported during the year, namely, on April 2nd, 19th and 28th. The prompt vaccination and supervision of contacts gave splendid results, the disease being checked in its initial stages.

Vaccinations have been carried out under the Public Health (Smallpox Prevention) Regulations, 1917, by the Assistant Medical Officers. These have been done promptly, and nearly all contacts with cases of smallpox have been vaccinated. There were 179 vaccinations and re-vaccinations performed.

TYPHUS FEVER.—No cases of Typhus Fever occurred during the year.

RELAPSING FEVER.—Two cases of Relapsing Fever occurred in the month of December in the persons of two Roumanian boys, en route to America; they were removed to hospital. The diagnosis was confirmed by the finding of the causative organism, the *Spirochæta recurrentis*, in the blood in both cases. Measures were at once taken to have the other members of the family freed from lice, by whose agency the disease is spread, and no further case arose. It is many years since a case of Relapsing Fever confirmed by bacteriological examination has occurred in the City, although in 1870 some 355 deaths were attributed to this cause.

ENTERIC FEVER.

The decline in the prevalence of this disease, which has been continuous during the past 25 years, has now almost led to its extinction. The death-rate has fallen since 1894 from 46 to 1.0 per 100,000; of the eight deaths which occurred during the year, four were those of sailors infected abroad—two being of foreign nationality, and two were Liverpool residents, who died in other parts of the British Isles, and whose deaths were transferred to Liverpool; only two of the eight deaths were of persons infected in Liverpool, or a mortality of 0.25 per 100,000.

Only 58 cases of Enteric Fever (including five cases of Paratyphoid B.) were reported during 1920 in the City and Port of Liverpool, this being the lowest figure as yet recorded. Of these cases 21 were imported by sea and a further three cases were infected whilst resident in other parts of the British Isles, leaving 34 cases of indigenous origin. In the case of four of the latter, infection followed the consumption of shellfish, oysters being implicated in two cases and mussels in the other two.

Another case was discovered to be due to infection from a chronic carrier—a woman who had typhoid fever some 14 years ago; since then a son, two daughters, and two grand-daughters had been attacked, the attacks coinciding with the residence of the chronic carrier in the respective houses. A sample of fæces was obtained and bacteriological examination showed the presence of an organism which closely corresponded to the *B. typhosus* in all other respects, but failed to be agglutinated by a standard anti-typhoid serum. The organism was

further tested by the City Bacteriologist, and an agglutinating serum prepared from it which agglutinated a standard organism and the suspected organism in almost equal dilutions, thus proving that the organism isolated from the woman was the typhoid bacillus. The chronic carrier was given instructions how to avoid infecting others, and it is to be hoped that no further cases will arise in her family.

A group of cases occurred in two streets in the North end of the City; two children aged 4 and 6 years were taken ill with symptoms indicative of Pneumonia, and were removed to a general hospital early in September, where one of the children died. Late in September two other children of the same family, aged 9 and 11 years, were removed to the same hospital suffering from similar symptoms, and one of these cases proved fatal. A post-mortem examination was made, and the case was shown by Professor E. Glynn to be one of Typhoid Septicæmia. At the same time information was received from Ormskirk that a man who had lived next door to this family had proceeded there, and he also had been taken ill with typhoid. By a coincidence two cases of Typhoid were removed to hospital during September from the next street, the sufferers being marine firemen who had been taken ill at their houses shortly after arriving in Liverpool, but too late to have been possible sources of infection to the above-mentioned group of cases. As the street was mainly occupied by a seafaring population it is probable that the outbreak was due to a similar importation.

Another and similar outbreak occurred in July in a street in the Central part of the City, a child aged 10 years was taken to a general hospital in May with symptoms of Pneumonia, returning home in June. During July her mother and three sisters, aged 2, 5, and 6 years, were removed to hospital, two to the Northern Hospital and two to the City Hospital, Fazakerley; they were found, by bacteriological examination, to be suffering from Typhoid Fever, although the symptoms in the children were largely those of Pneumonia. The original case was then removed to Fazakerley and was found to be recovering from typhoid fever. No further cases occurred.

These outbreaks show the value of bacteriological examinations in anomalous febrile diseases.

All other cases of Typhoid occurring during 1920 were isolated and sporadic in nature, and no source of infection was discoverable.

The results of inquiry into the probable causation of the reported cases is shown in the following table, the figures for the years 1912-14 and 1919 being shown for the purpose of comparison:—

CITY AND PORT OF LIVERPOOL. ENTERIC FEVER, 1912-1920 (OMITTING 1915, 1916, 1917, 1918.

| | CASES. | | | | | PERCENTAGE. | | | | |
|---|--------|-------|-------|-------|-------|-------------|-------|-------|-------|-------|
| | 1912. | 1913. | 1914. | 1919. | 1920. | 1912. | 1913. | 1914. | 1919. | 1920. |
| Imported by sea | 36 | 38 | 62 | 27 | 21 | 29.0 | 24.8 | 35.0 | 42.2 | 31.1 |
| Imported by land | 11 | 13 | 11 | 6 | 3 | 8.8 | 8.5 | 6.2 | 9.5 | 3.3 |
| Shell-fish | 9 | 15 | 9 | 2 | 4 | 7.2 | 9.8 | 5.0 | 3.1 | 1.3 |
| Direct infection | 9 | 24 | 9 | 5 | 2 | 7.2 | 15.6 | 5.0 | 7.8 | 0.8 |
| Direct infection from missed cases | — | 7 | 3 | 1 | 6 | — | 4.5 | 1.6 | 1.6 | 1.3 |
| Chronic carrier | 1 | — | — | — | 1 | 0.8 | — | — | — | 0.1 |
| Probably not Typhoid ... | 6 | 5 | 9 | 2 | — | 4.8 | 3.2 | 5.0 | 3.1 | — |
| Total ascertained causes ... | 72 | 102 | 103 | 43 | 37 | 55.8 | 66.4 | 57.8 | 67.2 | 46.5 |
| Central area | 20 | 16 | 50 | 12 | 4 | 16.0 | 10.4 | 23.3 | 18.8 | 3.3 |
| Outer area | 32 | 35 | 24 | 9 | 17 | 24.3 | 22.9 | 13.5 | 14.0 | 10.8 |
| Total not accounted for ... | 52 | 51 | 74 | 21 | 21 | 40.3 | 33.3 | 41.8 | 32.8 | 17.5 |
| Total for City and Port ... | 124 | 153 | 177 | 64 | 58 | | | | | |

DIPHtheria.

During the past sixty years the mortality from Diphtheria has shown considerable fluctuations, but the general tendency has been for the mortality to decline. The accompanying diagram exhibits the mortality from Diphtheria (including deaths registered under the now obsolete heading "Croup") since 1859. No definite periodicity can be observed; the high peak which occurred in 1872 was part of a pandemic which appeared to begin in Central Europe in the early years of the decade.

8.1920.

1905



1905

130
120
110
100
90
80
70
60
50
40
30
20
10

1905

1915

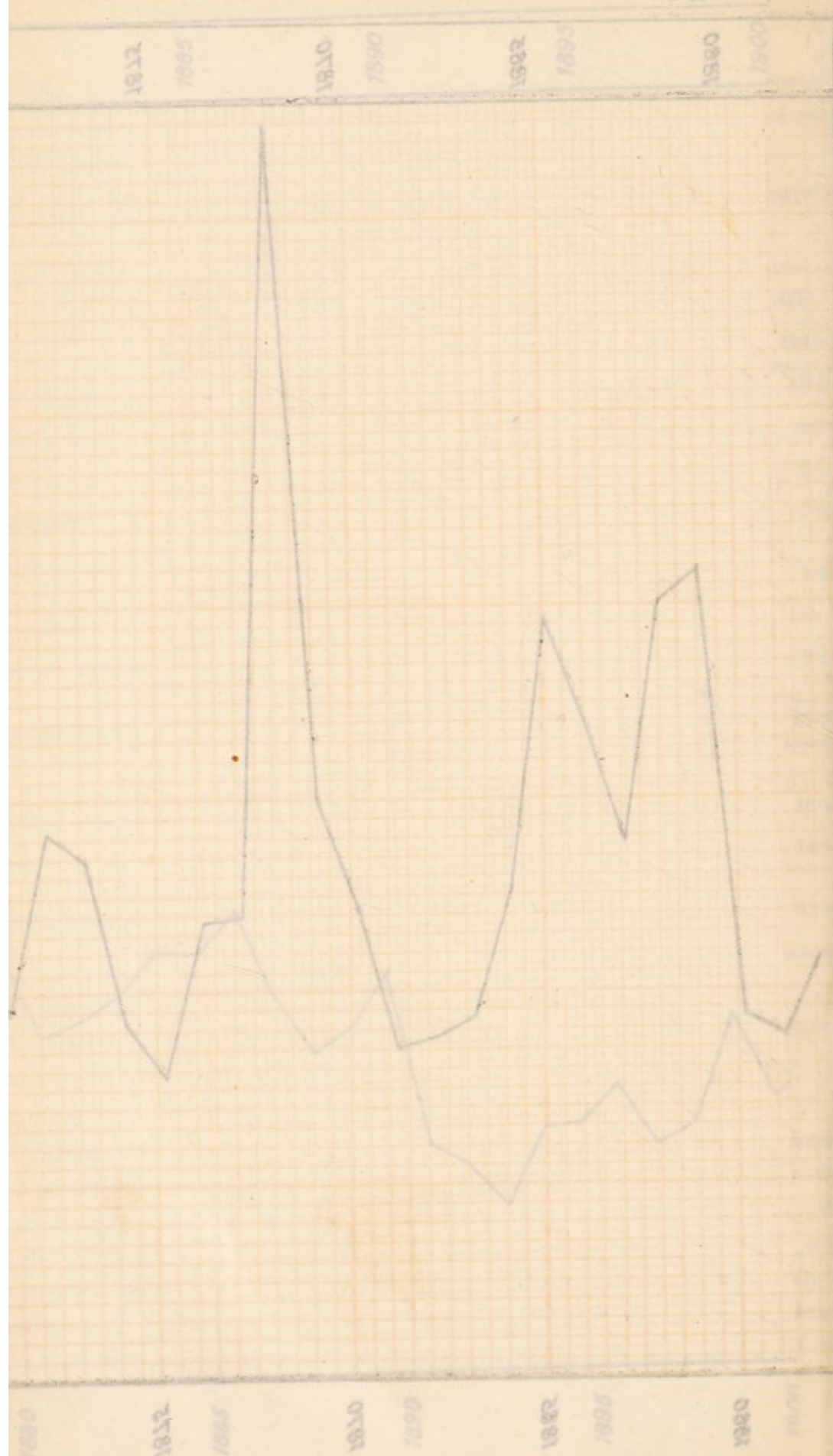
1905

1915

CITY OF LIVERPOOL.

Death rate from Croup (quor) per 100,000 Population, 185

1850-1851



Since 1872 three minima, separated by irregular waves of increase, occurred in 1875, 1893, and 1913, in which last year the death-rate from Diphtheria and Membranous Croup was 10·0 per 100,000 population, the lowest figure so far recorded.

From 1913 to 1918 there was a steady increase in the mortality, the rate rising as shown in the accompanying table to 29·2 per 100,000. This rise was fairly general in the Merseyside area, similar or larger increases being observed in neighbouring boroughs.

Table 1.

DIPHTHERIA IN THE CITY OF LIVERPOOL, 1911-1920.

| | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. | 1917. | 1918. | 1919. | 1920. |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Cases | 1,334 | 1,110 | 1,085 | 1,377 | 1,247 | 1,114 | 1,022 | 1,302 | 1,959 | 1,654 |
| Deaths | 125 | 111 | 76 | 110 | 136 | 137 | 143 | 228 | 212 | 188 |
| Case rate per 1,000 population | 1·7 | 1·7 | 1·4 | 1·8 | 1·6 | 1·4 | 1·3 | 1·6 | 2·5 | 2·1 |
| Death rate per 100,000 population | 16·8 | 14·8 | 10·0 | 14·3 | 17·6 | 17·6 | 18·3 | 29·2 | 27·1 | 24·0 |
| Fatality rate per 100 cases | 9·6 | 10·0 | 7·2 | 7·8 | 11·0 | 12·2 | 13·9 | 17·5 | 10·8 | 11·4 |

An examination of the two lower lines in the above Table reveals the fact that Diphtheria was becoming progressively more fatal from 1913 to 1918, but that the incidence of the disease upon the population did not show any notable increase until 1919. In other words, an increase in the virulence of Diphtheria was the principal cause of the rise in the death-rate, and was succeeded during the last two years by increased prevalence.

These statistical results are amply borne out by the clinical observations in the two hospitals to which cases of Diphtheria are removed, thus the Medical Superintendent of the City Hospital, Fazakerley, says:—

"A comparison between the clinical progress and behaviour of Diphtheria admitted into hospital during the year under review (1920) and those dealt with prior to the War, brings out certain points which attract serious attention.

"The amelioration of local symptoms, i.e., the arresting of the spread, and the ultimate disappearance of the membrane, after a given dose of anti-diphtheretic serum, is noticeably less prompt at the present time than was experienced before the War. As a direct result of the delayed clinical response to curative serum the outlook in the case is less satisfactory. It was found that death in the first phase of toxæmia occurred more rapidly, whilst in those patients who successfully overcame this earlier period of depression a higher incidence of post-diphtheritic paralysis, severe in extent, as well as in degree, was noticed."

The statement by the Visiting Physician to the City Hospital, Mill Lane, points in the same direction. "Twice during the year a series of cases occurred in which antitoxin even in very large doses produced very little effect. Clinical observation alone could not decide whether the Diphtheria organism was more virulent or of a different type from the ordinary, or whether the serum used was at fault."

The experience of the years prior to the general introduction of the use of anti-toxin appears to provide an answer to these questions. In the years 1892 to 1896 the fatality rate rose from 24·1 to 32·2, whilst from 1913 to 1918 it rose from 7·2 to 17·5; these are comparable phenomena. The value of anti-diphtheritic serum may be estimated from the difference between the highest fatality rate experienced then, namely, 32·2 in 1896 and the highest fatality rate experienced recently, namely, 17·5 in 1918, a difference that may be expressed as the saving of some 15 lives in every 100 cases of Diphtheria.

Table No. 2.
DEATHS FROM DIPHTHERIA.

| DISTRICTS. | QUARTERS. | | | | | | | | YEAR. | | |
|-------------------------|-----------|-----|-------|-----|-------|-----|------|-----|-------|-----|--------|
| | March. | | June. | | Sept. | | Dec. | | | | |
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | Total. |
| Scotland | ... | 1 | ... | 2 | 2 | ... | 1 | 1 | 3 | 4 | 7 |
| Exchange | 1 | 1 | 1 | 1 | ... | ... | ... | 1 | 2 | 3 | 5 |
| Abercromby | 4 | 1 | 3 | ... | ... | ... | ... | 1 | 7 | 2 | 9 |
| Everton | 5 | 3 | 3 | 1 | 1 | 4 | 3 | 2 | 12 | 10 | 22 |
| Kirkdale | ... | 3 | 1 | 2 | 1 | 3 | 3 | ... | 5 | 8 | 13 |
| West Derby (West) | 3 | 5 | 3 | 2 | 3 | 1 | 2 | 2 | 11 | 10 | 21 |
| Toxteth | 7 | 5 | 3 | 4 | 4 | 6 | 5 | 3 | 19 | 18 | 37 |
| Walton | 2 | 4 | ... | 1 | 3 | 1 | 2 | 5 | 7 | 11 | 18 |
| West Derby (East) | 5 | 4 | 1 | 3 | 4 | ... | ... | 1 | 10 | 8 | 18 |
| Wavertree | 9 | 6 | 5 | 2 | 2 | ... | 1 | ... | 17 | 8 | 25 |
| Toxteth (East) | 2 | 1 | 1 | ... | ... | ... | ... | ... | 3 | 1 | 4 |
| Garston | 1 | 1 | 1 | ... | ... | 1 | 2 | ... | 4 | 2 | 6 |
| Fazakerley | ... | ... | 1 | 2 | ... | ... | ... | ... | 1 | 2 | 3 |
| Woolton..... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| City..... | 39 | 35 | 23 | 20 | 20 | 16 | 19 | 16 | 101 | 87 | 188 |

| AGES AT DEATH. | | | | | | | | | | | | | |
|----------------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----------|
| Under 1 year. | 1— | 2— | 3— | 4— | 5— | 10— | 15— | 20— | 30— | 40— | 50— | 60— | All Ages. |
| 24 | 42 | 23 | 21 | 23 | 39 | 8 | 3 | ... | ... | 2 | 2 | 1 | 188 |

| AGES OF NOTIFIED CASES. | | | | | | | | | | | |
|-------------------------|-----|--|-----|-----|-----|-----|-----|-----|----|--|------|
| 41 | 137 | | 134 | 145 | 600 | 254 | 114 | 105 | 59 | | 1589 |

| PERCENTAGE FATALITY AT EACH AGE. | | | | | | | | | | |
|----------------------------------|----|----|----|-----|-----|-----|-----|-----|--|------|
| 58 | 47 | 15 | 15 | 6·5 | 3·1 | 2·6 | ... | 8·4 | | 11·4 |

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

Table No. 3.
DIPHTHERIA DEATHS BY REGISTRATION DISTRICTS, 1907-1920.
 Deaths from Membranous Group are shown in brackets.

| District. | Population,
1911. | 1907. | 1908. | 1909. | 1910. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. | 1917. | 1918. | 1919. | 1920. |
|----------------------------|----------------------|---------|----------|----------------------|----------|---------|---------|--------|---------|---------|---------|---------|---------|---------|---------|
| 1. Scotland | 46,576 | 7 [2] | 4 [2] | 10 | 3 | 5 | 2 | 3 | 6 | 9 [1] | 2 | 5 | 28 | 13 [2] | 7 |
| 2. Exchange | 37,370 | 5 | 7 [1] | 2 [1] | 5 | 3 [1] | 3 | 3 | 3 | 4 | 9 | 5 | 8 | 7 | 5 |
| 3. Abercromby | 44,727 | 4 [1] | 6 [1] | 5 [2] | 5 | 6 | 3 | 3 | 11 | 4 | 7 | 9 | 1 | 13 | 9 |
| 4. Everton | 120,865 | 9 [4] | 28 [5] | 17 [3] | 7 [5] | 17 | 19 | 6 | 14 | 19 [1] | 27 | 27 | 35 | 32 | 22 |
| 5. Kirkdale | 67,463 | 11 [4] | 17 [3] | 10 [1] | 7 [1] | 7 [1] | 11 | 6 | 6 | 6 [2] | 7 | 20 | 26 | 9 | 13 |
| 6. West Derby West | 85,483 | 8 [2] | 10 [3] | 20 [1] | 5 [2] | 10 | 14 | 20 | 17 | 22 | 14 | 17 | 23 [1] | 11 | 21 |
| 7. Toxteth | 101,642 | 17 [3] | 14 [4] | 14 [1] | 15 [1] | 24 [2] | 21 | 13 | 19 | 13 | 20 [1] | 17 | 40 [2] | 53 | 37 |
| 8. Walton | 75,591 | 10 [2] | 8 [1] | 9 | 14 [2] | 13 | 10 | 6 | 10 | 10 | 11 | 11 | 23 | 22 [1] | 18 |
| 9. West Derby East... | 63,209 | 11 [2] | 9 [1] | 11 | 12 | 15 [2] | 3 | 4 | 8 | 10 | 12 | 12 | 21 | 16 | 18 |
| 10. Wavertree | 39,990 | 5 [2] | 2 | 5 [1] | 3 | 12 | 11 | 7 | 10 | 10 | 16 | 8 | 5 | 6 | 25 |
| 11. Toxteth E. (Sefton P.) | 34,498 | 2 | 10 | 3 | 7 [1] | 7 | ... | 2 | 1 | 8 | 8 | 5 | 8 | 10 | 4 |
| 12. Garston | 23,852 | 4 | 3 | 6 | 2 | 1 | 5 | 3 | 5 | 2 | 3 | 2 [1] | 10 | 4 | 6 |
| 13. Fazakerley | 5,155 | ... | ... | ... | 1 | ... | 2 | ... | ... | 1 | 2 | ... | ... | 2 | 3 |
| 14. Woolton..... | 6,932 | ... | ... | Incorporated in 1913 | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 3 | ... |
| 15. Emigrants, etc..... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 | ... | 3 | 1 | 8 | ... |
| Whole City | 753,353 | 95 [22] | 124 [22] | 112 [10] | 100 [12] | 125 [6] | 108 [3] | 76 [0] | 110 [0] | 132 [4] | 138 [1] | 142 [1] | 228 [3] | 209 [3] | 188 [0] |
| Central Districts (1 to 3) | 128,673 | 19 | 21 | 20 | 13 | 15 | 8 | 9 | 20 | 18 | 18 | 19 | 37 | 35 | 21 |
| Middle Districts (4 to 8) | 451,044 | 70 | 93 | 76 | 69 | 72 | 75 | 51 | 66 | 73 | 80 | 92 | 150 | 127 | 111 |
| Outer Districts (9 to 14) | 173,636 | 26 | 25 | 26 | 26 | 37 | 21 | 16 | 24 | 31 | 41 | 29 | 44 | 41 | 56 |

Table No. 4.

DIPHTHERIA, YEAR 1920.

| District. | Population,
1911. | Cases. | Deaths. | Case
Rate
per
1,000. | Death
Rate
per
100,000. | Case
Fatality
Rate
%. | Percentage
of
Secondary
to Primary
Cases. | Proportion
of
Children
0-2 years
to Total
Cases. | Proportion
of
Children
0-5 years
to Total
Cases. |
|----------------------------------|----------------------|--------|---------|-------------------------------|----------------------------------|--------------------------------|---|---|---|
| 1. Scotland | 46,576 | 49 | 7 | 1.0 | 14.9 | 14 | 2.4 | 10 | 43 |
| 2. Exchange | 37,370 | 32 | 5 | 0.9 | 13.5 | 15 | 10 | 25 | 50 |
| 3. Abercromby | 44,727 | 67 | 9 | 1.5 | 20.5 | 13 | 8.1 | 9 | 26 |
| 4. Everton | 120,865 | 167 | 22 | 1.4 | 10.8 | 13 | 5 | 8 | 36 |
| 5. Kirkdale | 67,463 | 86 | 13 | 1.3 | 19.3 | 15 | 3.7 | 14 | 49 |
| 6. West Derby West | 85,483 | 157 | 21 | 1.8 | 24.7 | 13 | 10.3 | 11 | 28 |
| 7. Toxteth | 101,642 | 302 | 37 | 3.0 | 36.6 | 12 | 11.1 | 13 | 41 |
| 8. Walton..... | 75,591 | 247 | 18 | 3.2 | 23.8 | 7 | 11.6 | 4 | 26 |
| 9. West Derby East | 63,209 | 215 | 18 | 3.2 | 28.4 | 9 | 6.4 | 3 | 23 |
| 10. Wavertree | 39,990 | 125 | 25 | 3.1 | 62.5 | 20 | 9.2 | 5 | 29 |
| 11. Toxteth E. (Sefton P.) | 34,498 | 69 | 4 | 2.0 | 11.6 | 6 | 3.1 | 4 | 33 |
| 12. Garston | 23,852 | 55 | 6 | 2.3 | 25.2 | 11 | 5.2 | 4 | 22 |
| 13. Fazakerley | 5,155 | 13 | 3 | 2.5 | 58.8 | 23 | 9.1 | ... | 23 |
| 14. Woolton | 6,932 | 11 | ... | 1.6 | ... | ... | 12.5 | ... | 9 |
| Institutions | ... | 19 | ... | ... | ... | ... | ... | ... | ... |
| Central Districts (1 to 3) .. | 128,673 | 148 | 21 | 1.1 | 16.4 | ... | 5.9 | 13 | 36 |
| Middle Districts (4 to 8) .. | 451,044 | 959 | 111 | 2.1 | 24.6 | 11.7 | 9.2 | 9 | 34 |
| Outer Districts (9 to 14) .. | 173,636 | 488 | 56 | 2.8 | 32.2 | 11.5 | 8.3 | 4 | 26 |
| Whole City | 753,353 | 1,614 | 188 | 2.1 | 24.0 | 11.8 | 8.1 | 8 | 31 |

These facts are expressed graphically in the second chart, from which it will be seen that a very similar wave of increased fatality was observed in 1896, the maximum death-rate being reached three years later in 1899. No figures are available as to the fatality of Diphtheria prior to the adoption of the Infectious Diseases Notification Act in Liverpool in 1890.

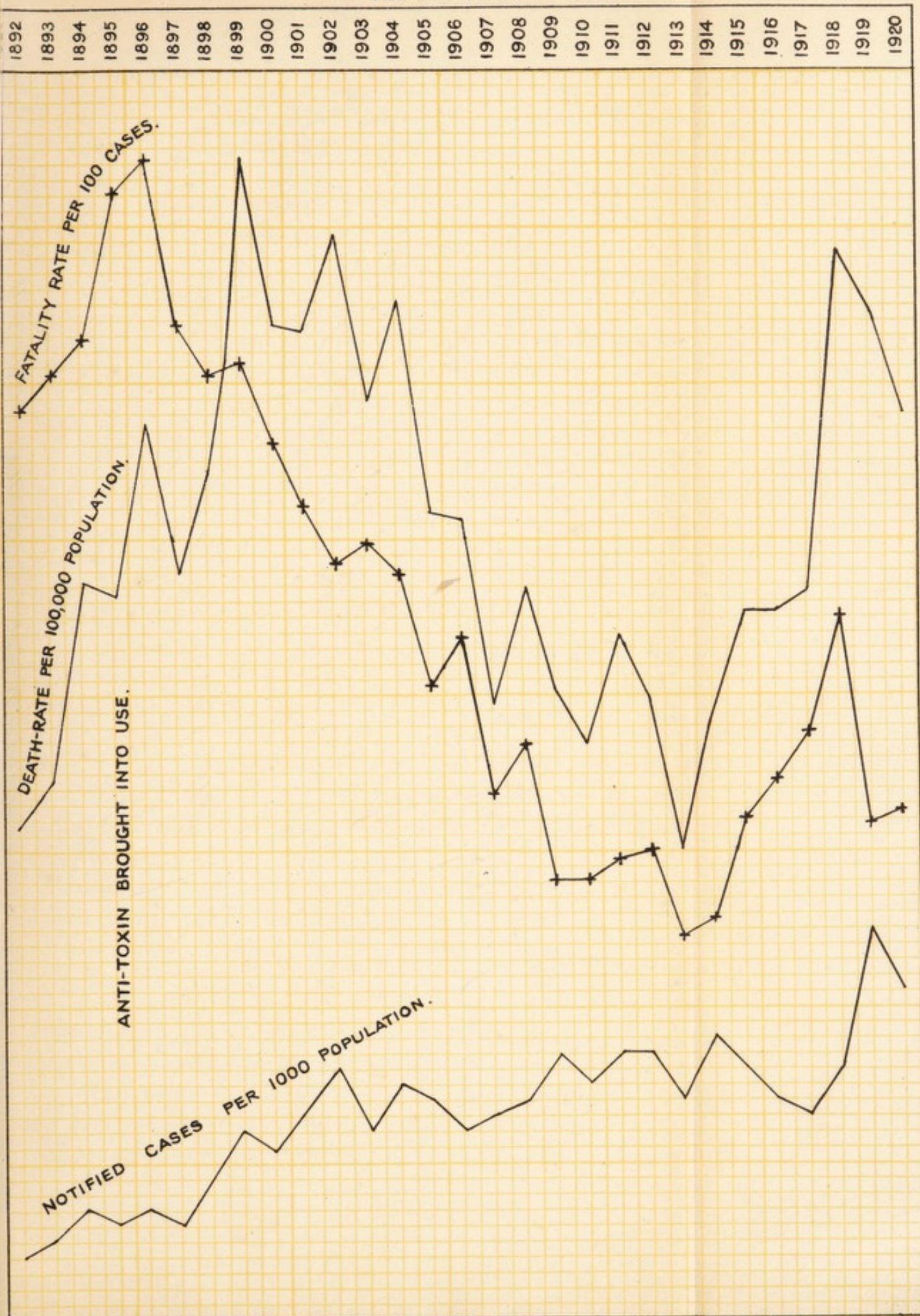
The mortality in Diphtheria, which is very low in cases treated with antitoxin on the first day of illness, rapidly rises with every day that elapses without this treatment. In this connection the Visiting Physician to the City Hospital East says:—"The statistics are noteworthy because so many deaths (38·7 per cent.) occurred within 48 hours of admission. Additional experience confirms what has so often been emphasised—the importance of the early recognition and the prompt treatment of cases of Diphtheria."

The second Table shows the deaths from Diphtheria distributed by Registration Districts for each quarter of the year, and also shows the ages at death, the ages of notified cases and the percentage fatality at each age period. From this it will be observed that the disease is most prevalent between the fifth and tenth years of life; but the disease is far more fatal in the first three years succeeding birth, more than half the cases occurring under one year of age proving fatal.

The third Table shows the deaths in each Registration District in the years from 1907 till 1920, and also in these districts combined in three zones, the Central zone comprising districts 1 to 3, the Middle zone districts 4 to 8, and the Outer zone districts 9 to 14. It will be noticed that the maximum mortality was reached in the Central and Middle zones in 1918, but in the Outer zone not until 1920. Wavertree was the district in the Outer zone more particularly affected in 1920, and it may be of interest to note that during 1919, as stated in the Annual Report for that year, in an unusual number of houses in Wavertree two or more cases—multiple cases—were observed to be occurring. The fatality rate—20 per cent.—was also unusually high in Wavertree in 1920. The tendency during the last few years therefore has been for the disease to

DIPHTHERIA (& MEMBRANOUS CROUP) IN CITY OF LIVERPOOL DURING 1892--1920.

DEATH RATE PER 100,000 POPULATION, NOTIFIED CASES PER 1,000 POPULATION AND FATALITY RATE PER 100 CASES NOTIFIED.



spread from the Centre to the periphery of the town, but no particular district can be picked out as being first affected.

In the final Table there are shown for each district, and also for three zones of districts, the population in 1911, the numbers of cases and of deaths from Diphtheria, the case-rate per 1,000 inhabitants, the death-rate per 100,000 inhabitants, and the fatality rate per 100 cases. There are also shown the percentage of secondary or multiple cases—two or more in one house—to primary cases and the proportion of cases among children under two years and under five years of age, among whom, as shown above, the highest mortality occurs. The *case rates* and *mortality rates* increase as we proceed outwards from the Centre of the City to the Outer areas. This is in accord with the facts exhibited in the third Table. The *fatality-rate* is highest in the Central Districts, and this corresponds with a greater proportion of cases in children under two years of age. The proportion of secondary cases is highest in Walton, Toxteth and West Derby West in the Middle zone, and in Woolton, Wavertree and Fazakerley in the Outer zone.

The experience of the past six years may be epitomised as follows:—

(a) The mortality from Diphtheria rose from 1913 to 1918, and has since begun to decline.

(b) The increased mortality from 1913 to 1918 was due to increased fatality and not to increased incidence; this increased fatality being probably due to increased virulence of the Diphtheria organism.

(c) From 1914 to 1917 the incidence of Diphtheria was declining, but has since then again risen considerably.

(d) The wave of increased mortality has apparently passed from the Centre towards the periphery of the City.

There has been little evidence to point to the schools as greatly influencing the spread of the disease; as in previous years when there was evidence pointing to any school being a possible focus of the disease, swabs have been taken from children in contact with cases, and these have been examined bacteriologically; in a few cases this has resulted

in the discovery of temporary carriers of the Diphtheria bacillus, who have then been excluded from school until found free from the bacillus by further examination. Conditions that are favourable to the spread of Diphtheria—and other infections—and are not infrequently found in schools are the use of cups at drinking fountains; these should be replaced by bubbling fountains to which the children cannot apply their lips, and secondly the use of pens, pencils, etc., in common among the members of a class; every child should possess one of these for its own personal use.

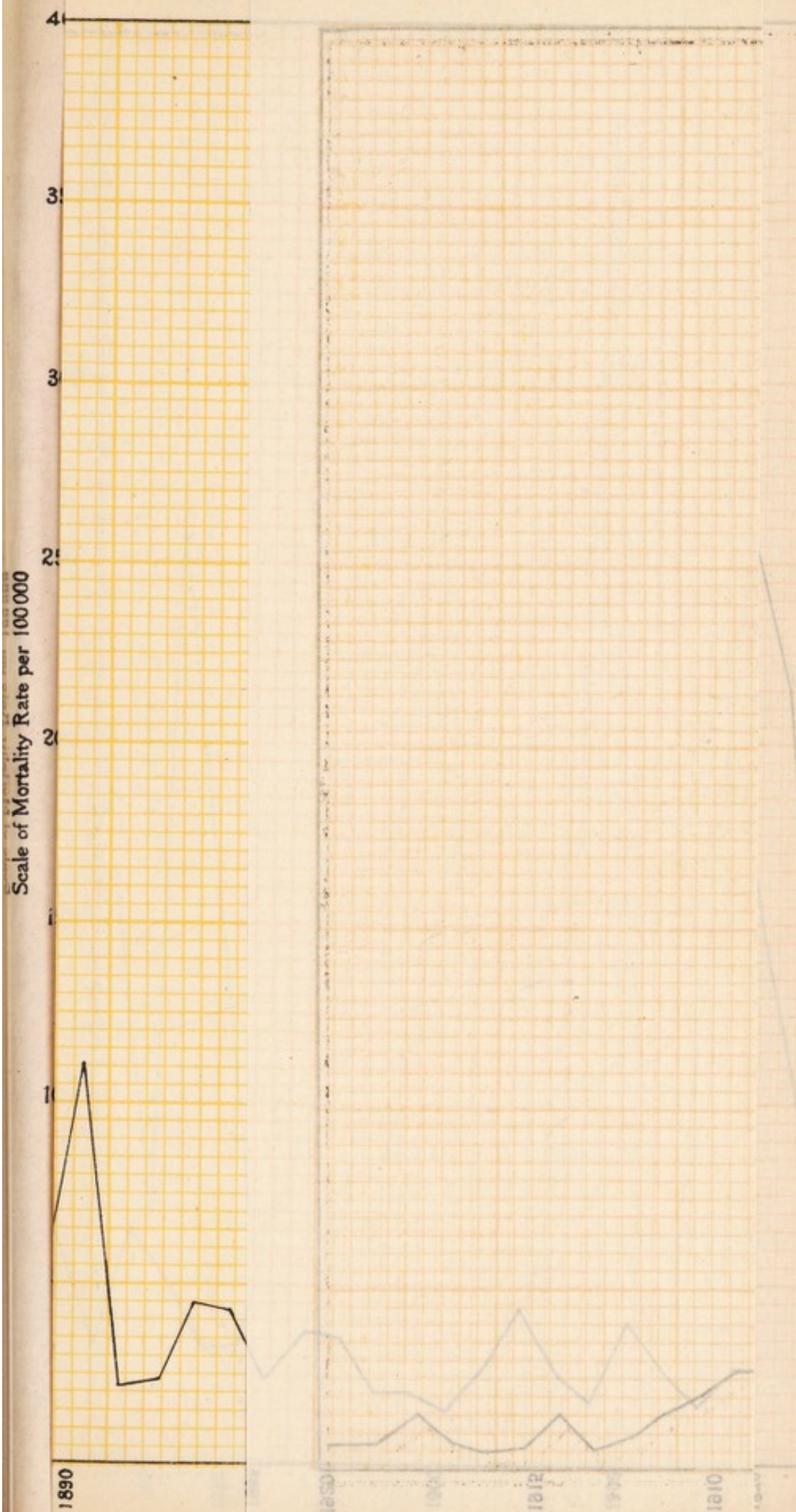
SCARLET FEVER.

The great decline in the mortality from Scarlet Fever which has taken place since the middle of last century is exhibited in the accompanying chart. In the middle of the century, as will be seen, waves of considerable severity were experienced at intervals of three or four years. At that time the disease was accompanied by a high fatality, and was rightly dreaded by parents. Whole families of children were at times swept off by this fever; this is now an event of rare occurrence, but occasionally examples of a family susceptibility are encountered with tragic results. One example occurred in a family during 1920, two children aged 6 and 12 years dying from toxic Scarlet Fever. Their deaths had been immediately preceded by that of a third child aged 8 years, who died after illness lasting only one day, and evidence was found post mortem of a persistently enlarged thymus ("status lymphaticus"), Scarlet Fever being probably the true cause of death. A fourth child, aged 14 years, recovered after an extremely severe attack. That this was an example of family susceptibility was borne out by the occurrence of a number of cases in the vicinity at the same time, but without any other case proving fatal or even severe.

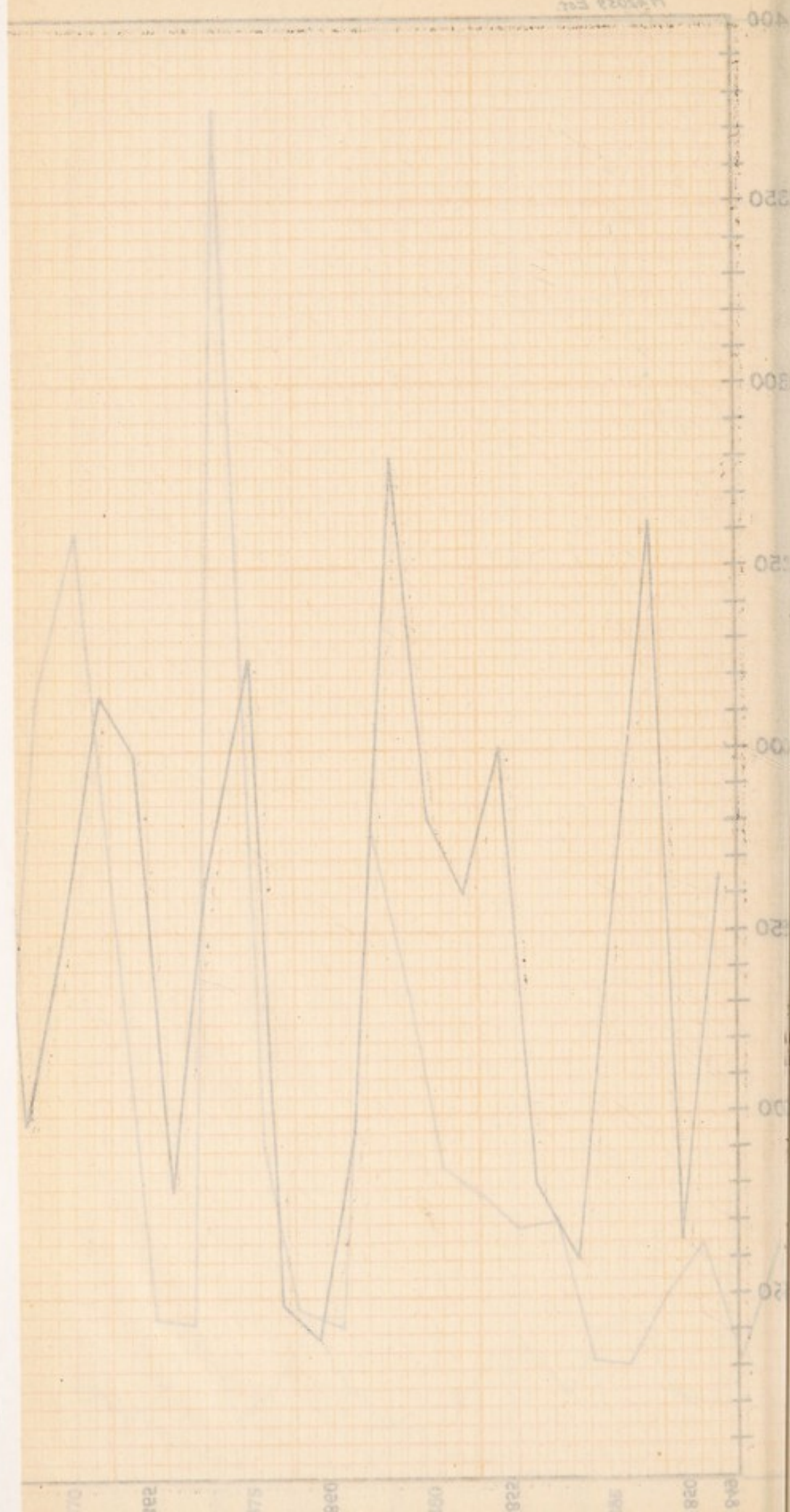
In 1890 Scarlet Fever became a notifiable disease in Liverpool. The case incidence per 1,000 inhabitants and the fatality per 100 cases notified during the past 30 years is shown in the second diagram. In that period there has been a considerable decline in prevalence and an even more notable decline in the fatality, the lowest fatality—2·2 per cent.—being recorded in 1920. The figures for the past 10 years are shown in Table No. 1:—

ate per 100,000. 1849-1920.

YT



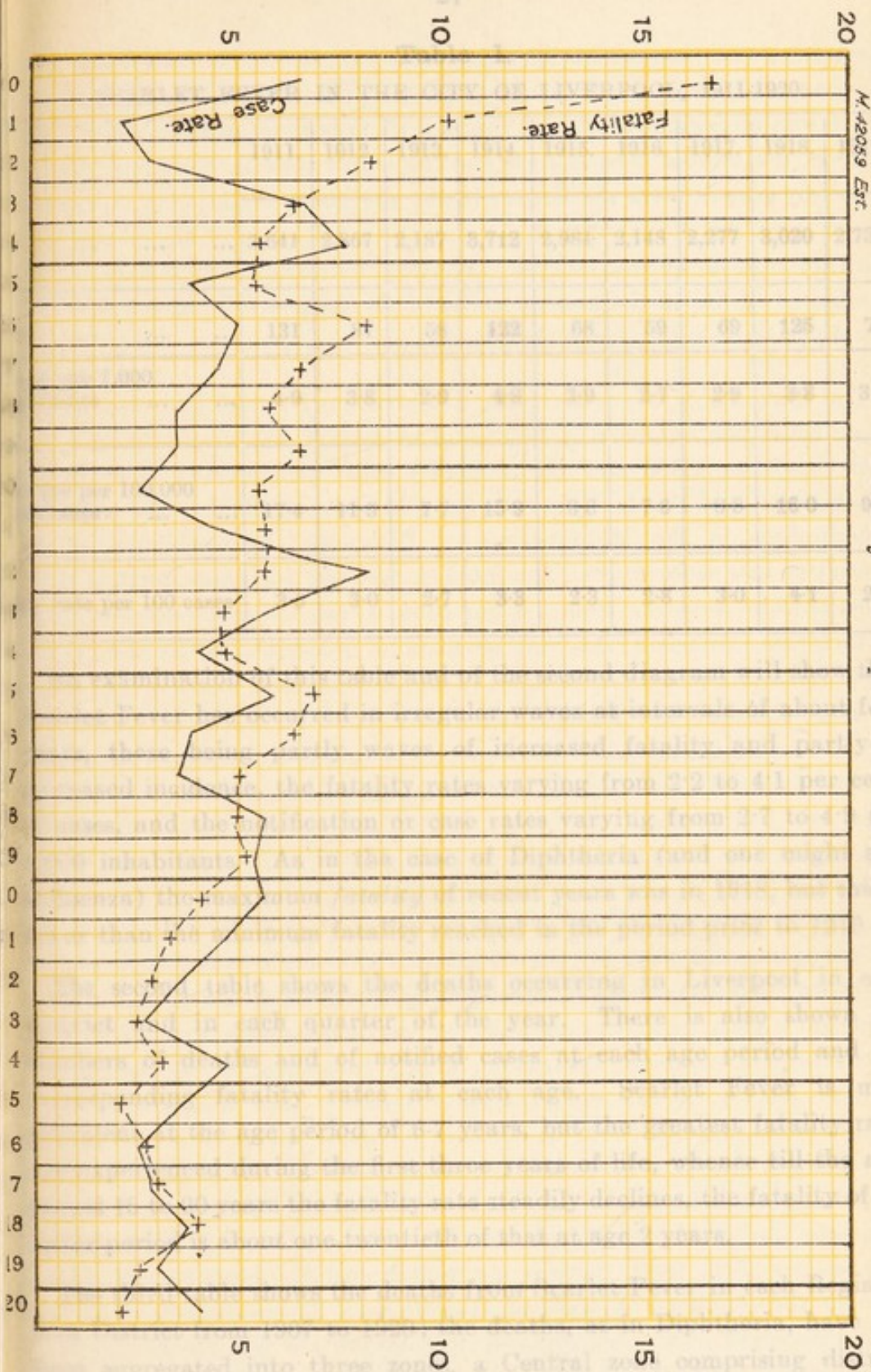
Masses Est



B

CITY OF LIVERPOOL.

Scarlet Fever 1890-1920. Case Rate per 1000 Population, and
Fatality Rate per 100 Cases.



B

CITY OF LIVERPOOL.

Scarlet Fever 1890-1920. Case Rate per 1000 Population, and Fatality Rate per 100 Cases.

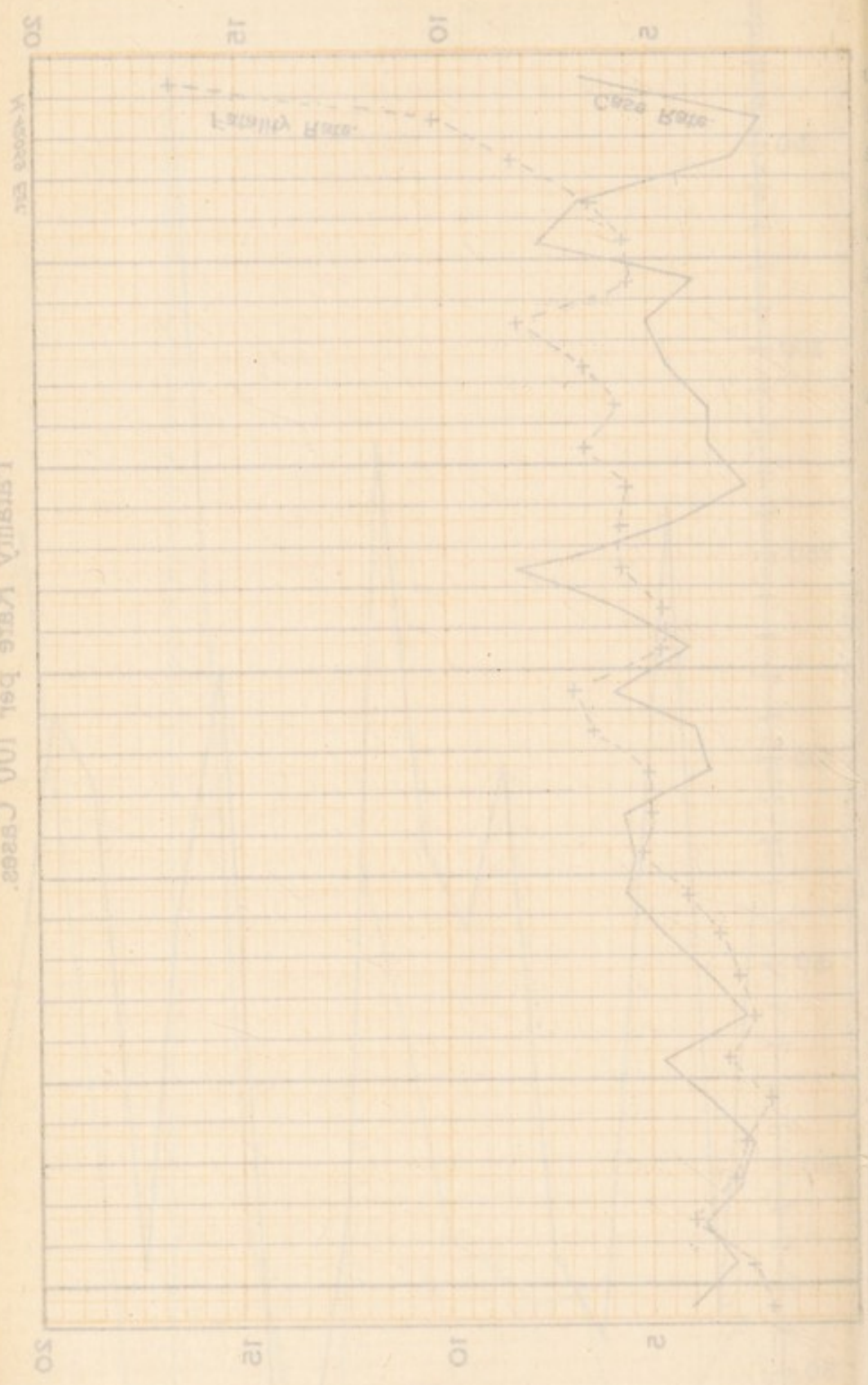


Table 1.

SCARLET FEVER IN THE CITY OF LIVERPOOL, 1911-1920.

| | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. | 1917. | 1918. | 1919. | 1920. |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| es | 3,641 | 2,867 | 2,187 | 3,712 | 2,984 | 2,148 | 2,277 | 3,020 | 2,735 | 3,230 |
| ths | 131 | 87 | 58 | 122 | 68 | 59 | 69 | 125 | 74 | 70 |
| e-rate per 1,000
habitants | 4.9 | 3.8 | 2.9 | 4.9 | 3.9 | 2.7 | 2.9 | 3.8 | 3.1 | 4.1 |
| th-rate per 100,000
habitants | 17.4 | 11.5 | 7.7 | 15.9 | 8.8 | 7.6 | 8.8 | 16.0 | 9.3 | 8.9 |
| ality rate per 100 cases | 3.5 | 3.0 | 2.7 | 3.3 | 2.3 | 2.8 | 3.0 | 4.1 | 2.6 | 2.2 |

An examination of this table and of the second diagram will show that Scarlet Fever has occurred in irregular waves at intervals of about four years, these being partly waves of increased fatality and partly of increased incidence, the fatality rates varying from 2.2 to 4.1 per cent. of cases, and the notification or case rates varying from 2.7 to 4.9 per 1,000 inhabitants. As in the case of Diphtheria (and one might add Influenza) the maximum *fatality* of recent years was in 1918, but this is lower than the minimum fatality reached in the period prior to 1910.

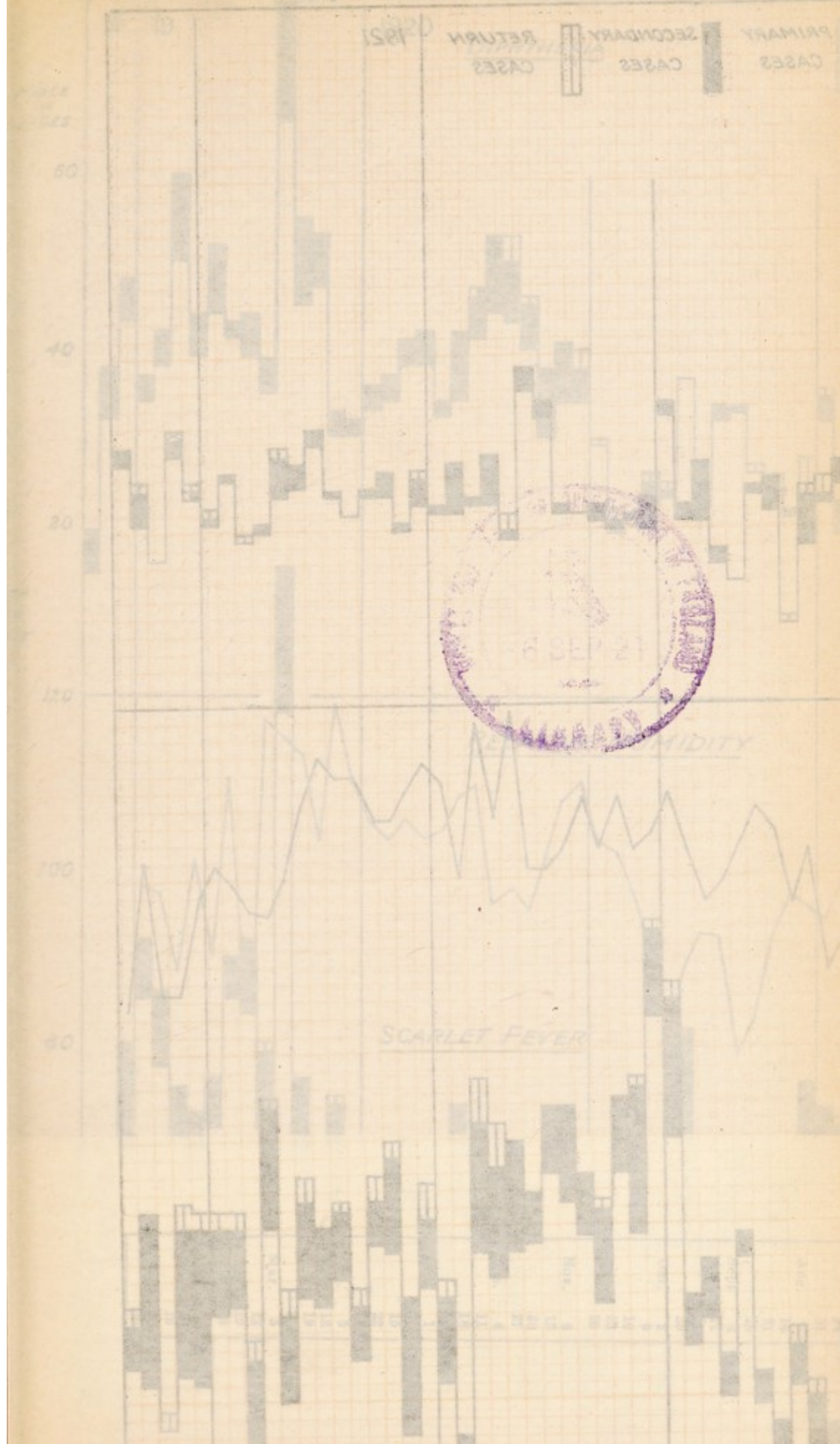
The second table shows the deaths occurring in Liverpool in each district and in each quarter of the year. There is also shown the numbers of deaths and of notified cases at each age period and the corresponding fatality rates at each age. Scarlet Fever is most prevalent at the age period of 6-7 years, but the greatest fatality rates are experienced during the first three years of life, whence till the age-period 15 to 20 years the fatality rate steadily declines, the fatality of the latter period is about one-twentieth of that at age 2 years.

The third table shows the deaths from Scarlet Fever in each Registration District from 1907 to 1920; the deaths, as in Diphtheria, have also been aggregated into three zones, a Central zone comprising districts 1 to 3, a Middle zone comprising districts 4 to 8, and an Outer zone comprising districts 9 to 14. During this period three waves of

mortality were experienced, those of 1914 and 1918 reaching their maxima in all three zones simultaneously. The previous wave, however, which was of greater intensity, reached its maximum in the Central zone in 1908, the Middle zone in 1909 and the Outer zone in 1910; it therefore definitely passed from the Centre to the periphery of the City. There is evidence in this to show that, as was the contention of the pioneers in sanitary reform, efforts such as rehousing operations which improve the conditions of life in the poorest parts of the City will be associated with benefit to those who inhabit the suburbs.

The third Table shows for each Registration District and also for the three zones the numbers of cases and of deaths, the case-rate (notification rate) per 1,000 and the mortality rate (death-rate) per 100,000 inhabitants, and the fatality rate per 100 cases notified. The case-rate was highest in the Middle zone of Districts; the variations in the mortality rate were slight. The fatality rate per 100 cases notified shows considerable variation from 3.1 per cent. in the Central Districts to 1.9 in the Outer Districts; this may perhaps be accounted for by the greater proportion, 8.1 per cent., of cases in children under 2 years of age in the Central than in the Middle and Outer zone of Districts, where the proportion only reached 4.1 per cent. The difference in the fatality rates between the different zones is, however, higher than is to be found in the case of Diphtheria; the very high fatality rate and death-rate experienced by Fazakerley is due to the deaths occurring in one family, already alluded to, unduly influencing the statistics of a small population.

A third diagram illustrates the incidence of both Scarlet Fever and Diphtheria in the City for each week of 1920, and for the three months preceding and succeeding it, arranged by the week of onset, and also the average weekly relative humidity of the atmosphere expressed as a percentage of complete saturation, kindly furnished by the Astronomer to the Mersey Docks and Harbour Board. This diagram shows a tendency for Scarlet Fever to recur in irregular waves of a few months' duration. Another phenomenon observable is that certain weeks showing a sudden rise in the numbers of cases of Scarlet Fever, as for example the weeks ending November 29th, 1919, and May 8th and September 25th, 1920, there is a simultaneous and equally well-marked rise in the numbers of cases of Diphtheria. These simultaneous rises may thus occur at any season, and this observation is to be distinguished from the well known fact that both diseases have a seasonal maximum in the Autumn months. The diagram also shows the incidence, week by week, of primary, secondary and return cases.



CITY OF LIVERPOOL
 Cases of Diphtheria and of Scarlet Fever arranged

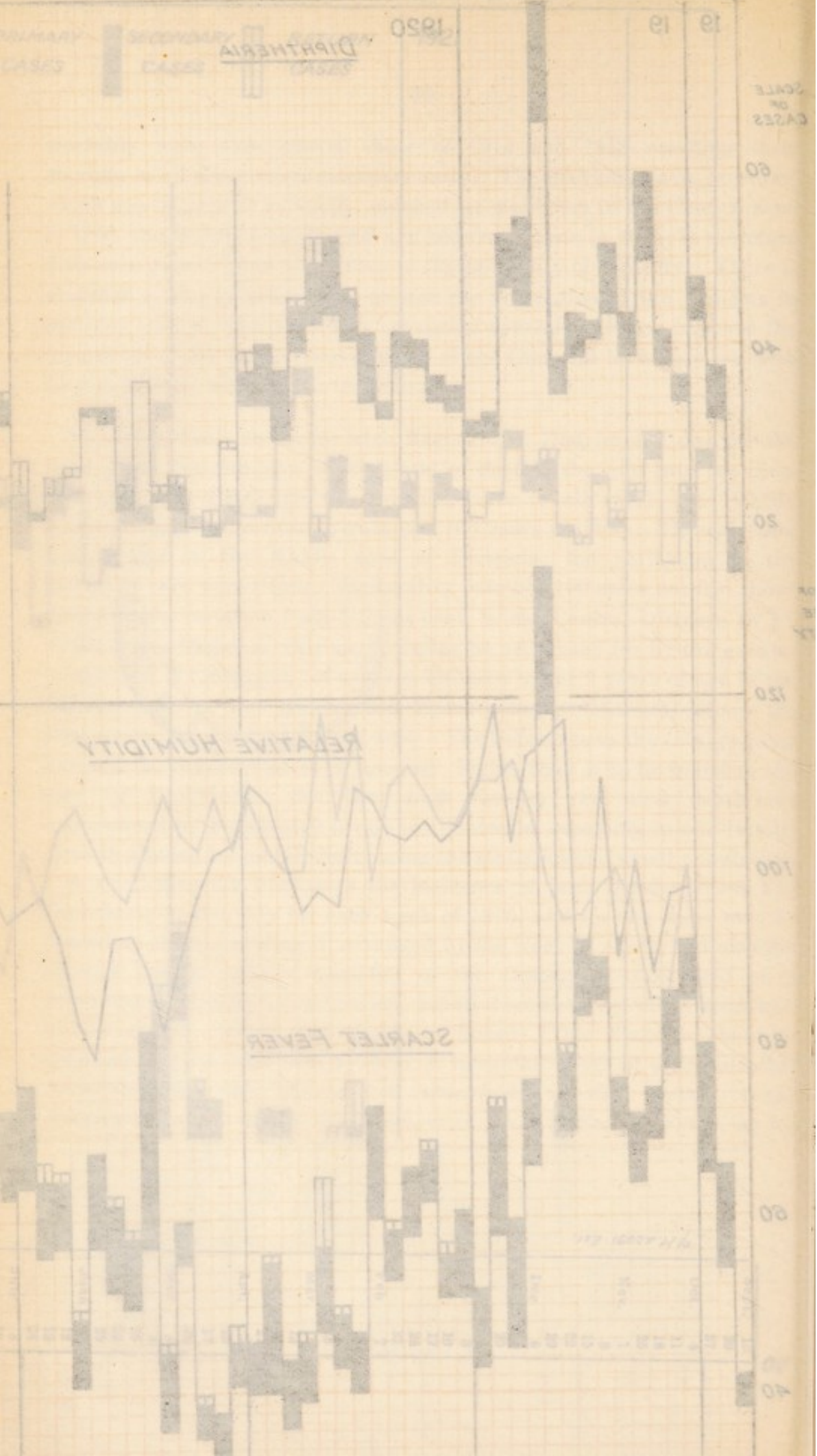


Table No. 2.
DEATHS FROM SCARLET FEVER.

| DISTRICTS. | QUARTERS. | | | | | | | | YEAR. | | |
|-----------------------|-----------|-----|-------|-----|-------|-----|------|-----|-------|-----|--------|
| | March. | | June. | | Sept. | | Dec. | | | | |
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | Total. |
| Scotland | 1 | 2 | ... | ... | 1 | 1 | ... | 2 | 2 | 5 | 7 |
| Exchange | ... | 1 | 2 | 1 | ... | ... | ... | ... | 2 | 2 | 4 |
| Abercromby | ... | ... | 1 | ... | ... | ... | ... | ... | 1 | ... | 1 |
| Everton | 2 | ... | 3 | 2 | ... | 3 | 1 | ... | 6 | 5 | 11 |
| Kirkdale | ... | 1 | ... | ... | 2 | 1 | 1 | ... | 3 | 2 | 5 |
| West Derby West | 1 | 1 | 5 | 1 | 2 | ... | ... | ... | 8 | 2 | 10 |
| Toxteth | 1 | 1 | 3 | 2 | ... | 1 | ... | 2 | 4 | 6 | 10 |
| Walton | 2 | 1 | ... | 2 | 2 | ... | 1 | ... | 5 | 3 | 8 |
| West Derby East | 2 | 1 | 1 | 2 | ... | 1 | ... | ... | 3 | 4 | 7 |
| Wavertree | 1 | 1 | ... | ... | ... | ... | ... | ... | 1 | 1 | 2 |
| Toxteth East | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 1 | 1 |
| Garston | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 1 | 1 |
| Fazakerley | ... | ... | ... | ... | ... | ... | 1 | 1 | 1 | 1 | 1 |
| Woolton | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | 1 |
| City | 10 | 11 | 15 | 10 | 7 | 8 | 4 | 5 | 36 | 34 | 70 |

| AGES AT DEATH. | | | | | | | | | | | | | |
|----------------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----------------|-----------|
| Under 1 year. | 1— | 2— | 3— | 4— | 5— | 10— | 15— | 20— | 30— | 40— | 50— | 60 and upwards. | All Ages. |
| 3 | 8 | 13 | 5 | 9 | 21 | 6 | 1 | 3 | 1 | ... | ... | ... | 70 |

| AGES OF NOTIFIED CASES. | | | | | | | | | | | | | |
|-------------------------|----|-----|-----|-----|------|-----|-----|----|----|--|--|------|--|
| 38 | 82 | 136 | 207 | 262 | 1349 | 592 | 218 | 87 | 45 | | | 3016 | |

| PERCENTAGE FATALITY AT EACH AGE. | | | | | | | | | | | | | |
|----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|-----|--|
| 7.9 | 9.0 | 9.5 | 2.4 | 3.4 | 1.5 | 1.0 | 0.5 | 3.4 | 2.2 | | | 2.2 | |

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

Table No. 3.
DEATHS FROM SCARLET FEVER BY REGISTRATION DISTRICTS, 1907—1920.

| District. | Population,
1911. | 1907. | 1908. | 1909. | 1910. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. | 1917. | 1918. | 1919. | 1920. |
|----------------------------|----------------------|-------|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1. Scotland | 46,576 | 19 | 30 | 23 | 11 | 4 | 5 | 4 | 18 | 10 | 2 | 6 | 9 | 6 | 7 |
| 2. Exchange | 37,370 | 6 | 12 | 12 | 4 | 4 | 5 | — | 6 | 6 | 2 | 2 | 2 | 3 | 4 |
| 3. Abercromby | 44,727 | 8 | 6 | 6 | 6 | 4 | 3 | 2 | 2 | 3 | 6 | 2 | 3 | 1 | 1 |
| 4. Everton | 120,865 | 22 | 50 | 49 | 21 | 25 | 25 | 11 | 17 | 12 | 8 | 13 | 25 | 13 | 11 |
| 5. Kirkdale | 67,463 | 14 | 28 | 25 | 10 | 10 | 2 | 9 | 8 | 5 | 8 | 11 | 21 | 1 | 5 |
| 6. West Derby West... | 85,483 | 10 | 24 | 22 | 35 | 15 | 11 | 4 | 12 | 8 | 6 | 9 | 16 | 12 | 10 |
| 7. Toxteth | 101,642 | 22 | 21 | 19 | 28 | 27 | 15 | 9 | 21 | 10 | 11 | 14 | 12 | 7 | 10 |
| 8. Walton | 75,591 | 12 | 13 | 23 | 22 | 9 | 10 | 4 | 15 | 8 | 7 | 4 | 11 | 5 | 8 |
| 9. West Derby East | 63,209 | ... | 13 | 12 | 15 | 7 | 2 | 5 | 9 | 5 | 5 | 2 | 10 | 9 | 7 |
| 10. Wavertree | 39,990 | 5 | 6 | 9 | 11 | 8 | 5 | 2 | 7 | 2 | 1 | 3 | 5 | 8 | 2 |
| 11. Toxteth E. | 34,498 | 3 | 4 | 5 | 7 | 3 | 1 | 3 | 2 | 4 | 2 | 2 | 6 | ... | 1 |
| (Sefton Park) | | | | | | | | | | | | | | | |
| 12. Garston | 23,852 | 11 | 2 | 4 | ... | 1 | 2 | 3 | 4 | ... | 1 | 1 | 2 | 6 | 1 |
| 13. Fazakerley | 5,155 | ... | 1 | 2 | 2 | 1 | ... | 1 | 2 | ... | ... | ... | ... | ... | 2 |
| 14. Woolton | 6,932 | ... | Incorporated in 1913 | | | | | | ... | ... | ... | ... | ... | ... | 1 |
| Emigrants, etc. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Whole City | 753,353 | 140 | 217 | 219 | 179 | 131 | 87 | 57 | 123 | 73 | 4 | 2 | 10 | 3 | ... |
| Central Districts (1 to 3) | 128,673 | 33 | 48 | 41 | 21 | 12 | 13 | 6 | 26 | 19 | 63 | 71 | 133 | 74 | 70 |
| Middle Districts (4 to 8) | 451,044 | 80 | 136 | 138 | 116 | 86 | 63 | 37 | 73 | 43 | 40 | 10 | 14 | 10 | 12 |
| Outer Districts (9 to 14) | 173,636 | 19 | 26 | 32 | 35 | 20 | 10 | 14 | 24 | 11 | 9 | 8 | 24 | 23 | 14 |

Table No. 4.
SCARLET FEVER, 1920.

| District. | Population,
1911. | Cases. | Deaths. | Case
Rate
per
1,000. | Death
Rate
per
100,000. | Case
Fatality
Rate
%. | *
Percentage
Proportion
of
Secondary
to Primary
Cases. | *
Proportion
of
Children
0-2 years
to Total
Cases. | *
Proportion
of
Children
0-5 years
to Total
Cases. |
|--------------------------------------|----------------------|--------|---------|-------------------------------|----------------------------------|--------------------------------|--|--|--|
| 1. Scotland | 46,576 | 130 | 7 | 2.7 | 15.0 | 5.3 | 21 | 11.0 | 43.4 |
| 2. Exchange | 37,370 | 90 | 4 | 2.4 | 10.7 | 4.4 | 23 | 5.4 | 23.2 |
| 3. Abercromby | 44,727 | 172 | 1 | 3.8 | 2.2 | 0.6 | 22 | 7.5 | 32.5 |
| 4. Everton | 120,865 | 488 | 11 | 4.0 | 9.1 | 2.2 | 15 | 3.0 | 26.1 |
| 5. Kirkdale | 67,463 | 241 | 5 | 3.6 | 7.4 | 2.1 | 14 | 3.7 | 25.7 |
| 6. West Derby West | 85,483 | 408 | 10 | 4.9 | 11.7 | 2.4 | 14 | 7.7 | 25.0 |
| 7. Toxteth | 101,642 | 341 | 10 | 3.3 | 9.8 | 2.9 | 11 | 4.1 | 25.8 |
| 8. Walton..... | 75,591 | 640 | 8 | 8.4 | 10.6 | 1.2 | 17 | 3.3 | 22.8 |
| 9. West Derby East | 63,209 | 235 | 7 | 3.7 | 11.2 | 3.0 | 11 | 4.8 | 21.0 |
| 10. Wavertree | 39,990 | 190 | 2 | 4.7 | 5.0 | 1.0 | 17 | 3.5 | 27.9 |
| 11. Toxteth E.
(Sefton Park) | 34,498 | 148 | 1 | 4.0 | 2.9 | 0.8 | 10 | 4.0 | 24.0 |
| 12. Garston | 23,852 | 99 | 1 | 4.1 | 4.2 | 1.0 | 13 | 2.6 | 10.7 |
| 13. Fazakerley | 5,155 | 16 | 2 | 3.3 | 38.8 | 12.5 | 32 | 6.6 | 24.2 |
| 14. Woolton | 6,932 | 24 | 1 | 3.4 | 14.4 | 4.0 | 14 | ... | 11.1 |
| Emigrants, etc. | ... | 8 | ... | ... | ... | ... | ... | ... | ... |
| Central Districts (1 to 3) ... | 128,673 | 392 | 12 | 3.0 | 9.3 | 3.1 | 22.0 | 8.1 | 33.0 |
| Middle Districts (4 to 8)..... | 451,044 | 2,118 | 44 | 4.7 | 9.4 | 2.1 | 15.1 | 4.1 | 24.9 |
| Outer Districts (9 to 14) ... | 173,636 | 712 | 14 | 4.1 | 8.1 | 1.9 | 14.1 | 4.1 | 20.9 |
| Whole City | 753,353 | 3,230 | 70 | 4.0 | 8.9 | 2.1 | 15.6 | 4.6 | 24.6 |

* Second 6 months of 1920 only.

RETURN CASES.—Cases occurring within one month of the discharge of a case from hospital to the same house, were regarded as “return cases.” Of the 2,633 cases admitted to hospital suffering from Scarlet Fever, 49, or 1·8 per cent., were associated with recurrent infection in this way. In only six houses did more than one “return case” arise. Investigation showed that in many cases the child after return from hospital had developed a nasal catarrh which would appear to have caused a temporary return of infectivity. This deduction is borne out by the seasonal distribution of return cases which bears a distinct relation to common experience as to the prevalence of nasal catarrhs in the community.

SCARLET FEVER, 1920.

| | | | | | No. of cases
associated
with
return cases. | Expressed as a
percentage of
cases discharged
from hospital. |
|---------------------|-----|-----|-----|-----|---|---|
| January | ... | ... | ... | ... | 6 | 2·4 |
| February | ... | ... | ... | ... | 5 | 2·1 |
| March | ... | ... | ... | ... | 6 | 2·7 |
| April | ... | ... | ... | ... | 4 | 3·8 |
| May | ... | ... | ... | ... | 5 | 2·5 |
| June | ... | ... | ... | ... | 6 | 3·6 |
| July | ... | ... | ... | ... | 1 | 0·4 |
| August | ... | ... | ... | ... | 2 | 0·8 |
| September | ... | ... | ... | ... | 2 | 1·1 |
| October | ... | ... | ... | ... | 1 | 0·6 |
| November | ... | ... | ... | ... | 2 | 0·9 |
| December | ... | ... | ... | ... | 9 | 3·2 |
| WHOLE YEAR | | | | | 49 | 1·8 |
| December to June... | | | | | 36 | 2·7 |
| July to November... | | | | | 13 | 1·2 |

The period of stay in hospital of these cases associated with return cases varied considerably; in the majority of instances, i.e., 51 per cent., the case was uncomplicated and returned home within 6 to 8 weeks; it is these cases that appear to become infective again when they develop a nasal catarrh. In other cases the stay in hospital was much more prolonged owing to their having suffered from conditions such as purulent discharges from the nose or ears which were recognised as being liable to give rise to prolonged infectivity. The period of stay in hospital is shown below:—

| Less than
5 weeks. | 5
weeks. | 6
weeks. | 7
weeks. | 8
weeks. | 9
weeks. | 10
weeks. | 11
weeks. | 12 or
more. |
|-----------------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|----------------|
| 2 | 11 | 12 | 6 | 7 | 2 | 4 | 2 | 3 |

MEASLES.

The number of cases reported during the year was 11,448. This is the largest number since 1916. The disease was made notifiable under the Public Health (Measles and German Measles) Regulations, 1915. The fatality rate (3·4 per cent.) was, however, low, the number of deaths recorded being 387, the average number of deaths in the past ten years being 405. The figures for the past ten years are given in the accompanying table:—

| | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. | 1917. | 1918. | 1919. | 1920. |
|--|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|
| Cases | ... | ... | ... | ... | 3,049 | 14,732 | 9,230 | 9,268 | 3,983 | 11,448 |
| Deaths | 327 | 877 | 322 | 517 | 256 | 264 | 436 | 407 | 103 | 387 |
| Case rate per 1,000
inhabitants ... | ... | ... | ... | ... | ... | 19·0 | 11·8 | 11·8 | 5·1 | 14·6 |
| Death rate per
100,000
inhabitants ... | 44 | 116 | 43 | 69 | 33 | 34 | 56 | 52 | 13 | 49 |
| Fatality rate per
100 cases..... | ... | ... | ... | ... | ... | 1·1 | 4·7 | 4·3 | 2·6 | 3·4 |

The following statement shows the means by which the cases came under the notice of the Medical Officer:—

- (a) Total cases notified, 11,448.
- (b) Notified by Medical Practitioners, 6,391.
- (c) Notified by Schools, etc., 4,246.
- (d) Discovered by Health Visitors, 811.

The number of cases which had been at a low level until the late Autumn of 1919 then began rapidly to rise. The rise continued into the Spring of 1920, and culminated in the week ending February 28th, when 980 cases were notified, and 42 deaths took place. Thereafter it rapidly declined. So complete was this decline that in the last quarter of 1920 only 299 cases of Measles without a single death were notified, the latter an unique experience in the history of the City. The accompanying table shows the deaths from Measles arranged by Registration Districts for each quarter of the year. It also shows the ages at death. The maximum numbers of deaths occur in the second year of life.

DEATHS FROM MEASLES.

| DISTRICTS. | QUARTERS. | | | | | | | | YEAR | | |
|-------------------------|-----------|-----|-------|-----|-------|-----|------|-----|------|-----|--------|
| | March | | June. | | Sept. | | Dec. | | | | |
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | Total. |
| Scotland | 20 | 11 | 5 | 4 | ... | 1 | ... | ... | 25 | 16 | 41 |
| Exchange | 11 | 10 | 5 | 10 | ... | ... | ... | ... | 16 | 20 | 36 |
| Abercromby | 5 | 3 | 3 | 3 | ... | ... | ... | ... | 8 | 6 | 14 |
| Everton | 30 | 34 | 7 | 6 | ... | ... | ... | ... | 37 | 40 | 77 |
| Kirkdale | 20 | 14 | 6 | 3 | ... | ... | ... | ... | 26 | 17 | 43 |
| West Derby (West) | 14 | 12 | 3 | 7 | ... | 1 | ... | ... | 17 | 20 | 37 |
| Toxteth | 15 | 13 | 8 | 12 | 2 | 1 | ... | ... | 25 | 26 | 51 |
| Walton | 8 | 6 | 3 | 1 | ... | 1 | ... | ... | 11 | 8 | 19 |
| West Derby (East) | 9 | 3 | 4 | 4 | 1 | ... | ... | ... | 14 | 7 | 21 |
| Wavertree | 9 | 3 | 4 | 2 | ... | ... | ... | ... | 13 | 5 | 18 |
| Toxteth East | 2 | 2 | ... | ... | ... | ... | ... | ... | 2 | 2 | 4 |
| Garston | 7 | 10 | 1 | 4 | ... | ... | ... | ... | 8 | 14 | 22 |
| Fazakerley | 1 | 1 | ... | ... | ... | ... | ... | ... | 1 | 1 | 2 |
| Woolton | ... | ... | 2 | ... | ... | ... | ... | ... | 2 | ... | 2 |
| City | 151 | 122 | 51 | 56 | 3 | 4 | ... | ... | 205 | 182 | 387 |

AGES AT DEATH.

| Under
1 year. | 1— | 2— | 3— | 4— | 5— | 10— | 15— | 20— | 30— | 40— | 50— | 60— | All
Ages. |
|------------------|-----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|--------------|
| 78 | 184 | 66 | 22 | 13 | 21 | 1 | ... | ... | ... | 1 | 1 | ... | 387 |

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

Apart from the isolation of the patient, etc., the measures taken to prevent the extension of Measles include the exclusion from school of children coming from a house in which cases have occurred; children over seven years of age who have had Measles are, however, exempted. In certain cases outbreaks in schools necessitate the closure of a school, or more frequently of the infants' department. Fourteen infants' departments were closed during the rise of the epidemic in the early Spring of 1920, and finally all infants' departments were closed for 14 days at the end of the Spring term. The epidemic rapidly subsided, and it was only found necessary to close one department during the rest of the year.

The Order of the Ministry of Health authorises local authorities to provide medical assistance for the poorer inhabitants of their district, including nursing, and the Health Committee appointed four permanent nurses in 1916 to deal with such cases as were contemplated by the Order. This number has been increased in times of outbreak. In consequence of the visits of these nurses, not only have children benefited from the assistance and advice given, but many children have been removed for hospital treatment who would otherwise have been left at home without adequate care and attention. 16,866 visits were made by these nurses in the course of 1920, as follows:—

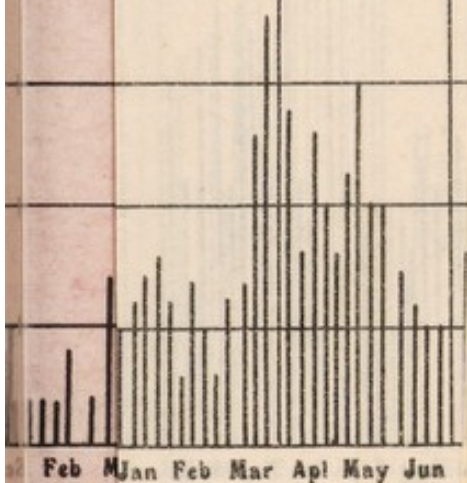
| | | | |
|------------------------------------|-----|-----|-------|
| New cases visited during year 1920 | ... | ... | 7,292 |
| Cases nursed | „ | „ | 1,071 |
| Re-visits to cases | „ | „ | 9,574 |

The Public Health (Measles and German Measles) Order was cancelled by the Ministry of Health as from January 1st, 1920. In view of the rising incidence of the disease, request was made to the Ministry for the Order to be extended until October 31st, 1920, and this was acceded to. There can be no doubt that this extension was attended by much benefit to the many children suffering from the disease.

The accompanying diagram illustrates the incidence of Measles in Liverpool, the number of deaths occurring weekly for the years 1912 onwards being shown. A similar diagram was published in the Report of the Medical Officer for the year 1911, giving the deaths for the preceding decade. The marked periodicity of Measles, which gives rise to epidemics at intervals of two years or less, is clearly shown by this diagram.

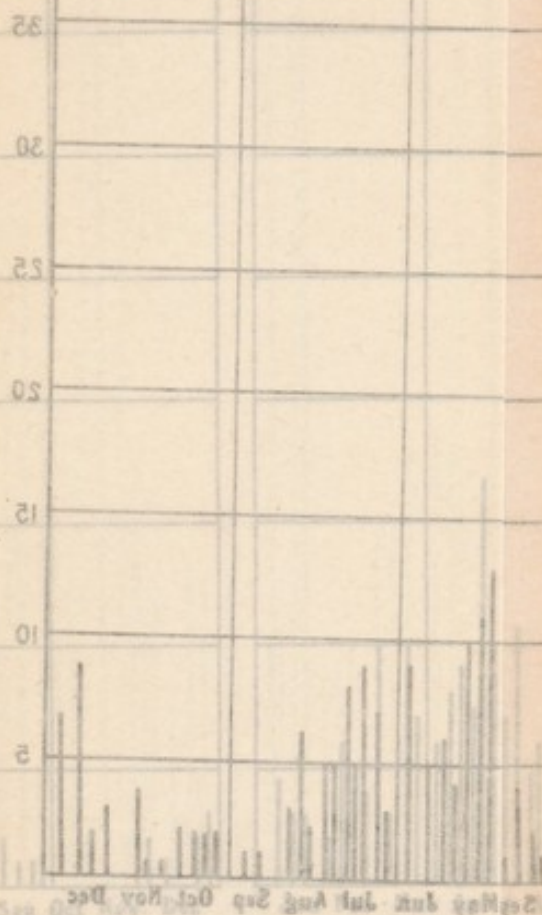
E. 921.

1912 1915



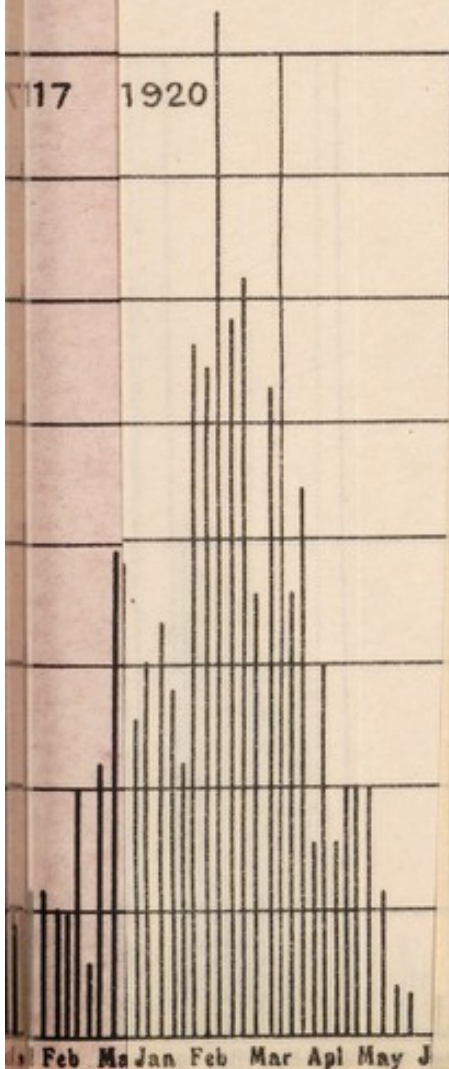
Feb Jan Feb Mar Apr May Jun

1916



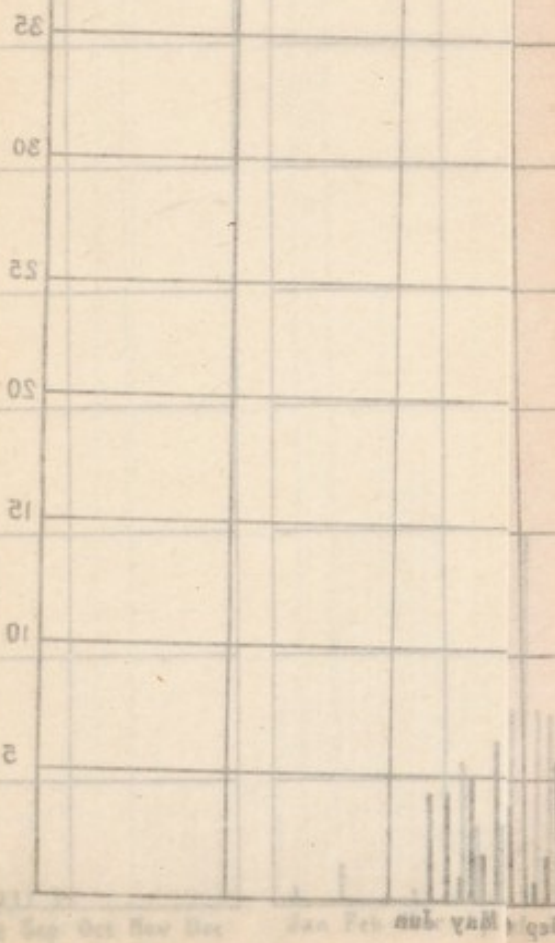
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1917 1920



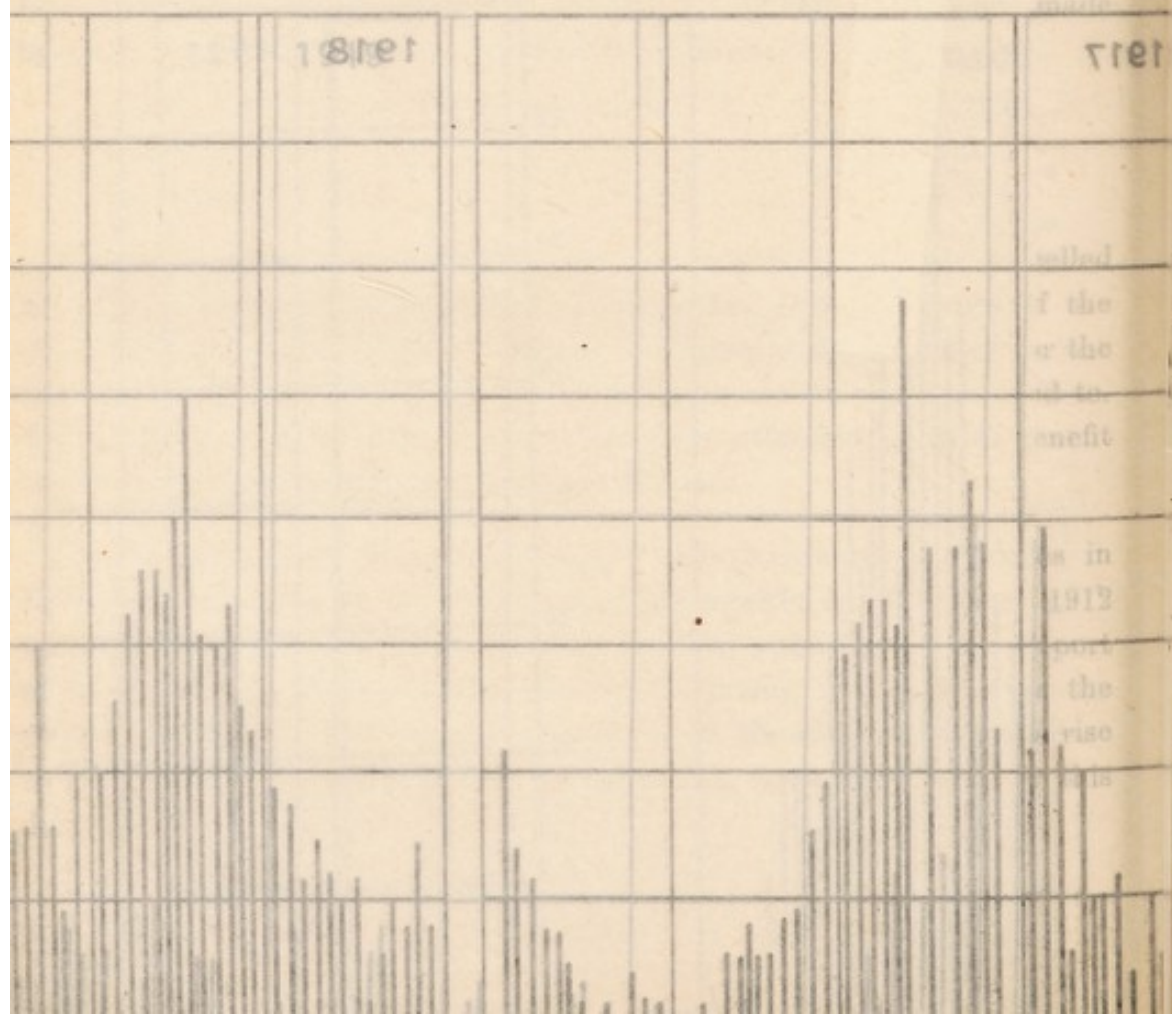
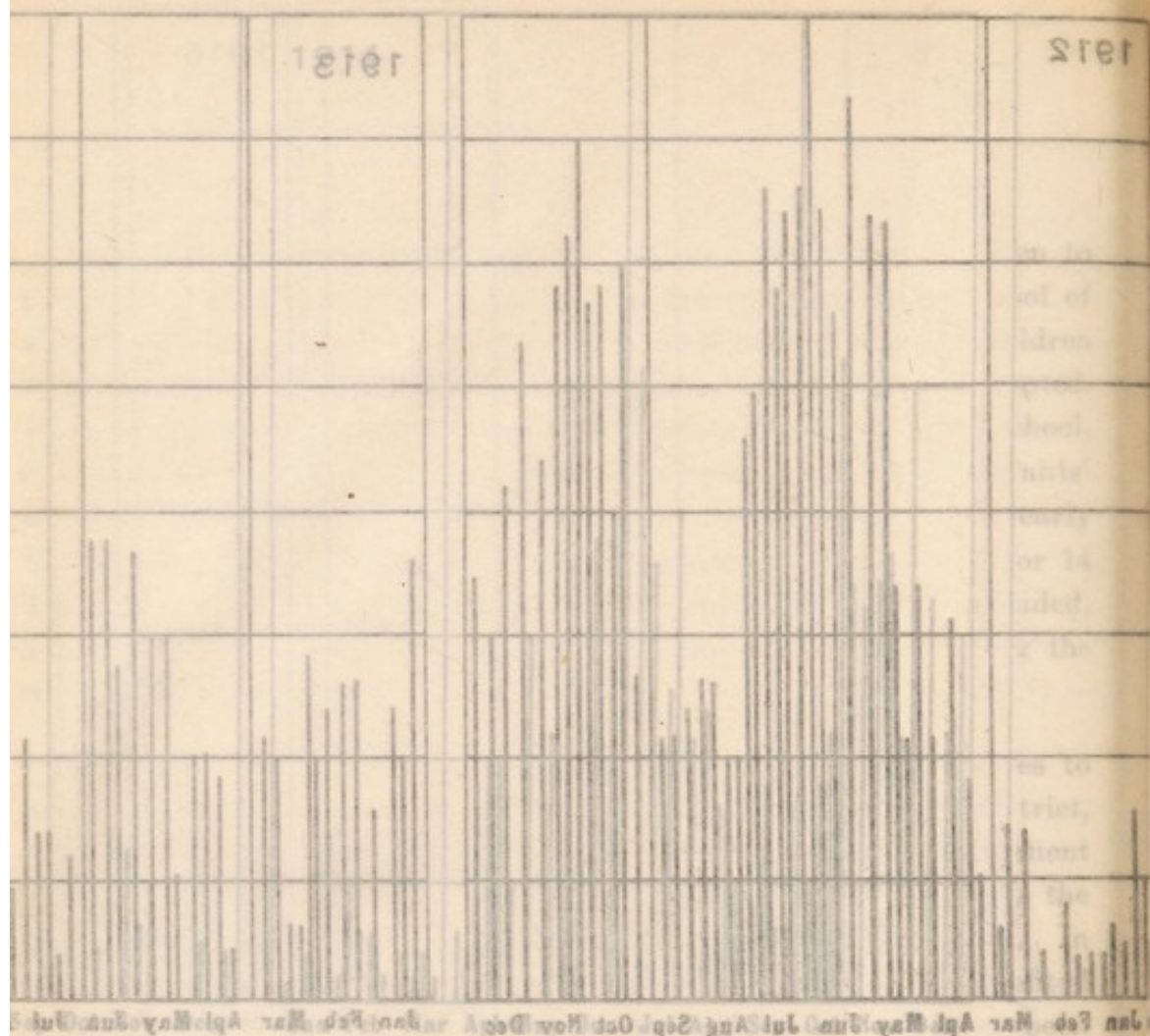
Feb Mar Jan Feb Mar Apr May Jun

1921



Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Deaths from Measles during the years 1912 to 1-



WHOOPING COUGH.

The number of cases coming to the notice of the Medical Officer during 1920 was 2,804, and the number of deaths 228, corresponding to a death-rate of 29 per 100,000 inhabitants, which is the same as the average during the past ten years. The number of deaths in 1919 was 53, corresponding to a death-rate of 7 per 100,000, the lowest within the records of the City. The average death-rates from Whooping Cough during the past 70 years is as follows:—

| | | | | | | | |
|---------|-----|-----|-----|-----|-----|-----|-------|
| 1850-59 | ... | ... | ... | ... | ... | ... | 103.6 |
| 1860-69 | ... | ... | ... | ... | ... | ... | 107.3 |
| 1870-79 | ... | ... | ... | ... | ... | ... | 86.8 |
| 1880-89 | ... | ... | ... | ... | ... | ... | 72.9 |
| 1890-99 | ... | ... | ... | ... | ... | ... | 56.3 |
| 1900-09 | ... | ... | ... | ... | ... | ... | 45.0 |
| 1910-19 | ... | ... | ... | ... | ... | ... | 32.6 |
| 1920 | ... | ... | ... | ... | ... | ... | 29.2 |

This shows a very considerable decline in mortality. Whether this decline is due to lessened prevalence, to alterations in the age-incidence, or to lowered virulence cannot be ascertained from the figures. The following table shows for the past ten years the numbers of cases coming to the notice of the Medical Officer, the numbers of deaths, the death-rate per 100,000 inhabitants, and the fatality rate per 100 cases:—

| Years. | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 |
|---|------|------|------|------|------|------|------|------|------|------|
| Cases ... | 1567 | 2486 | 1642 | 2303 | 2020 | 1524 | 3056 | 4244 | 788 | 2804 |
| Deaths ... | 246 | 272 | 232 | 248 | 259 | 235 | 132 | 364 | 53 | 228 |
| Death Rate per
100,000 of the
population ... | 33 | 36 | 31 | 32 | 33 | 30 | 17 | 46 | 7 | 29 |
| Fatality Rate
(Percentage of
deaths to cases) | 15.7 | 10.9 | 14.1 | 10.3 | 12.8 | 15.3 | 4.3 | 8.6 | 6.7 | 8.1 |

The most salient feature is the decline in the proportion of deaths to cases (fatality rate) during the past four years. As the disease is not compulsorily notifiable, caution is necessary in drawing conclusions from these figures.

ENCEPHALITIS LETHARGICA.

This disease was first recorded in Austria during the winter of 1916-17, although it is probable that outbreaks of disease recorded in the past under other names were due to this cause. Since 1917 the disease has become almost world-wide in its diffusion, and has given rise to considerable outbreaks in Vienna, Milan, Paris, New York, and other cities. It was made notifiable during the course of 1919. Seventeen cases were notified during 1920. One of these cases was imported from West Houghton and another case was probably infected at Belfast. The cases occurred in groups; thus cases 1 and 2 occurred in Toxteth during January; cases 3 and 4 occurred in Exchange during March; 6, 9 and 13 occurred in Walton during May, July and August, and 5, which was a Kirkdale case, occurring in June, worked in Walton; numbers 7, 8, 10, 11, 12 and 14 occurred in the adjacent districts of Wavertree and West Derby West during the months of July and August. No direct connection could, however, be traced between any of these cases; it is probable that a considerable number of cases were not diagnosed or reported.

A number of cases were reported as suffering from Encephalitis, who were found upon examination to be suffering from other conditions, e.g., Poliomyelitis in two cases; Cerebro-spinal Fever, Tubercular Meningitis, Toxæmia of Pregnancy, and Intracranial dermoid cyst each led to difficulty in diagnosis on different occasions.

THE SEASONAL DISTRIBUTION of the cases is shown below; the nine cases having their onset during 1920, but not reported until 1921, are shown in brackets:—

| Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | TOTAL. |
|------|------|------|------|-----|------|------|------|-------|------|-------|------|--------|
| 1 | — | 2 | — | 1 | 1 | 3 | 5 | 1 | (1) | 3 (1) | (7) | 17 (9) |

The "Epidemic hiccough" was prevalent in Liverpool during the late Autumn of 1920; this condition has been noticed to accompany Encephalitis lethargica in Paris and New York.

THE DISTRIBUTION BY AGE AND SEX was as follows:—

| 0-5 | 5-10 | 10-20 | 20-30 | 30-40 | Over 40 years. |
|-----|------|-------|-------|-------|----------------|
| 1 | 1 | 10 | 2 | 2 | 1 |

The majority of cases were therefore among adolescents; twelve cases were among males and five were among females.

SYMPTOMS.—The symptom that was present in all cases occurring in Liverpool in 1921 was lucid somnolence; this symptom is very prominent, and has given rise to the name of the disease, Encephalitis lethargica, and also to the popular but confusing misnomer "Sleeping sickness." It frequently varies in severity, in some cases being merely an excessive sleepiness, and on the other hand, in severe cases, passing into complete stupor or even coma.

At the onset headache, or other pains especially in the arms, may be present; delirium was present in nine cases, usually early in the disease. The onset of the disease was often marked by sleeplessness for a few days, and this is frequently present during convalescence, but during the height of the disease it always gave way to somnolence. Fever was present in all cases seen early in the disease, but is usually slight; in one case, however, continued fever lasting for over a fortnight was observed.

Some of the most characteristic symptoms are noted in the eyes; diplopia or "seeing double" is a very common symptom, and usually occurs, if at all, at the onset; it was found in eight of the 17 cases. Nystagmus was also present in eight cases, but is rather a late sign, and may persist in convalescence. Actual squint was only noticed in two cases. Fixation of the pupils was also found in a considerable proportion of the cases.

Ptosis or semi-ptosis was very frequent, being observed in ten of the cases, and when associated with paresis of the facial muscles gives a most characteristic apathetic or mask-like expression which was found in eight cases. The voice is usually (11 cases) equally weak and expressionless, being a mere whisper at times. Actual facial paralysis was noticed on four occasions.

In other cases tremors or jerky movements (10 cases), myoclonic contractions (two cases), choreic movements or waxy flexibility of the limbs was observed. Actual convulsions occurred twice. An erythematous eruption was noticed in two of the more severe cases, local in distribution.

Two of the cases proved fatal, equal to a fatality rate of 12 per cent.

CEREBRO-SPINAL FEVER.

Twenty-seven cases of Cerebro-Spinal Fever occurred during 1920, of which 18 (or 66·6 per cent.) proved fatal, making a death-rate of 2·2 per 100,000 of the population. The cases during the years 1914 to 1919 were 24, 26, 45, 37, 22, and 26 respectively.

The diagnosis was confirmed by the finding of the causal organism (the meningococcus) in the cerebro-spinal fluid after lumbar puncture in 15 cases, and by post-mortem examination in one case; in five cases lumbar puncture was performed, and the fluid showed evidence of meningitis but no organisms were isolated. For the remaining seven cases lumbar puncture was not performed, and the anti-meningococcal serum was not administered. The mortalities in these three classes were:—

| | Cases. | Deaths. | Fatality
per cent. |
|--|--------|---------|-----------------------|
| Lumbar puncture and diagnosis
confirmed bacteriologically ... | 15 | 8 | 52 |
| Lumbar puncture but diagnosis not
confirmed | 5 | 3 | 60 |
| No lumbar puncture and diagnosis
not confirmed | 6 | 6 | 100 |
| No lumbar puncture and diagnosis
only confirmed after death ... | 1 | 1 | 100 |

The advantage of confirmation of the diagnosis by lumbar puncture and subsequent treatment by anti-meningococcal serum is well exemplified by these figures, although the fatality of 52 per cent. in cases confirmed bacteriologically cannot be regarded as a minimum. The hospitals have had difficulty in obtaining monotype serums, which the experience gained during the years of the War showed to give much better results than poly-valent sera.

Twenty-three cases were removed to hospitals, four of these to the City Hospital, Fazakerley. Twenty cases were in children under 15 years of age, the remaining seven cases being over that age.

The cases of Cerebro-spinal Fever and also of Poliomyelitis are shown in the Table at the end of this Report, distributed according to ages and sexes and according to the final result.

POLIOMYELITIS.

Six cases of Poliomyelitis were reported in 1920, none of these proved fatal, but in all but one permanent paralysis of one or more limbs resulted.

ANTHRAX.

As in previous years, isolated cases of Anthrax occurred during 1920, chiefly amongst those employed in the handling of various animal products such as hides, skins, and wool. There were only four cases reported during the year, a much lower figure than recorded for many years. Although no cases were traced to the use of infected shaving brushes, nevertheless, it was considered desirable to continue the bacteriological examination of shaving brushes purchased in the City regularly. Two cases were reported as due to East India wool—one of these patients died.

CASES OF ANTHRAX REPORTED DURING THE YEAR 1920 IN CONNECTION WITH THE HANDLING OF ANIMAL
AND OTHER PRODUCTS.

| Date, 1920. | Sex. | Occupation. | Suspected Material. | Origin of Material. | Situation of Pustule. | Severity and Result. |
|---------------|------|-----------------|--------------------------------|------------------------|------------------------|-------------------------------|
| May 5th ... | M. | Dock Labourer | Hides... | East African Ports ... | Back of neck ... | Pustule excised and recovery. |
| June 12th ... | F. | Wool Sorter ... | Wool ... | Indian Ports ... | Right side of neck ... | Death. |
| June 20th ... | M. | Dock Labourer | Wool, Hides, and Goatskins. | Indian Port ... | Left eyebrow ... | Recovery. |
| Nov. 5th ... | M. | Meat Salesman | Meat ? (not definitely traced) | S. American Ports ... | Left finger ... | Pustule excised and recovery. |

During the year 285 shaving brushes were submitted to the City Bacteriologist for examination, out of this number a total of 62 were found to be infected with "B. Anthracis." Details of the reports in respect to the brushes is as follows:—

| No. of Brushes. | Kind of Handle. | Kind of Hair or Bristles. | RESULT. | |
|-----------------|-----------------------|---------------------------|-----------|-----------|
| | | | Positive. | Negative. |
| 154 | White Bone | Imitation Badger ... | 30 | 124 |
| 59 | Wood and Metal | Imitation Badger ... | 8 | 51 |
| 38 | Yellow Wood | Imitation Badger ... | 20 | 18 |
| 34 | Wood | Plain hair | 4 | 30 |
| 285 | | | 62 | 223 |

In 62 instances where the brushes were found to be infected, all brushes of the same pattern were surrendered to the Medical Officer of Health by the vendors for the purpose of destruction, and a certificate to that effect was given. The total number of brushes destroyed during the year was 8,246. In cases where the vendor had disposed of the brushes to retailers outside the city area, the Medical Officer of the district concerned was notified in the usual way.

INFLUENZA AND OTHER RESPIRATORY DISEASES.

Respiratory diseases cause an increasing proportion of the total deaths from all causes. In the decennial period 1871-80 the proportion of deaths certified as due to Respiratory diseases was 20·2 per cent. of all deaths; in 1920 it was 28·1 per cent. of all deaths. The table below shows for deaths due to Respiratory diseases the actual numbers, the percentage proportion to all deaths, the death-rates per 100,000 population, and the death-rates expressed as a percentage proportion of the rates experienced in 1871-80 (index figures):—

CITY OF LIVERPOOL: DEATHS FROM RESPIRATORY DISEASES.

| | Actual numbers
of deaths. | Percentage
proportion to
all deaths. | Death-rate per
1,000 population. | Death-rates as a
percentage
proportion of
rate experienced
in 1871-80. |
|-------------|------------------------------|--|-------------------------------------|--|
| 1871-80 ... | 29,763 | 20.2 | 5.7 | 100 |
| 1881-90 ... | 32,507 | 23.2 | 5.9 | 104 |
| 1891-1900 | 35,819 | 24.6 | 5.9 | 104 |
| 1901-10 ... | 32,995 | 21.8 | 4.5 | 79 |
| 1911-20 ... | 36,480 | 27.3 | 4.73 | 83 |
| 1920 ... | 3,570 | 28.1 | 4.57 | 79 |

The rate per 1,000 population has therefore declined to 79 per cent. of the 1871-80 rate. The decline, however, has not been steady; a rise occurred in 1881-90, and continued into the following decennium. A later rise occurred in 1911-20 owing to the virulent Influenza pandemic of 1918-19. It is somewhat remarkable that the respiratory death-rate was rising during 1881-90, although only nine deaths from Influenza were recorded in those 10 years; in 1891, Liverpool was affected by the prevailing pandemic of Influenza, and 247 deaths were attributed to that cause.

During the prevalence of Influenza this disease plays a predominant part in the causation of respiratory mortality; but a very large number of deaths are attributed to Pneumonia and Bronchitis, diseases which are undoubtedly of infective origin in a large proportion of cases. Much research work is at present being carried out for the elucidation of the causes of these diseases, and it is to be hoped that it will eventually prove of value for their treatment, and possibly for their prevention. 1,804 deaths were attributed to Pneumonia and Broncho-Pneumonia during 1920, and 1,408 to Bronchitis.

One hundred and eighty-seven deaths were returned as due to Influenza, but there is reason to believe that this figure very considerably understates the actual mortality, deaths actually caused by Influenza failing to be recorded under that heading.

Two waves of Respiratory disease occurred during 1920, the first reaching its maximum mortality in February-March, and the second at the end of December. The numbers of deaths from all causes, from Influenza, and from other forms of Respiratory disease is shown for each week and quarter of the year in the accompanying table.

In the first wave, which was undoubtedly one of Influenza, the deaths from all causes, from all Respiratory diseases, and from Pneumonia and Broncho-Pneumonia reached their maxima in the week ending March 6th, when the general death-rate rose to 26.3 (in 1919 the general death-rate rose to 42.5 on the week ending February 22nd). The maximum number of deaths from Influenza (19) was reached in the week ending March 13th, and the maximum number of deaths from Bronchitis on the week ending March 20th. This wave occurred almost simultaneously with waves of Influenza in other parts of the world, the number of cases of Influenza in Switzerland, for example, reaching its maximum in the week ending February 21st.

The second wave presented similar features, but was of less intensity, the maximum death-rate reached being 21.0 in the week ending December 18th. The number of deaths attributed to Influenza was small, but reached its maximum in the same week, as did also the deaths attributed to Bronchitis. The maximum number of deaths caused by Pneumonia and also those caused by all Respiratory diseases, was reached in the week ending December 25th.

In the Spring of 1921 a further wave of Influenza mortality, accompanied by a rise in the general death-rate and in mortality from all causes, occurred and reached its maximum in the week ending May 7th or 61 weeks from the Spring maximum of 1920, and 131 weeks from the Autumn maximum of 1918. A feature in this outbreak was the frequency of onset with vomiting, especially in children.

One of the salient features of the recent pandemic of Influenza was the change in the age at which the maximum mortality occurred, which in 1891 had been at ages 50 to 60 years, and in 1900 60 to 70 years. In 1918 the age at which the greatest number of deaths occurred suddenly changed to age 20 to 30 years, and a much smaller proportion of deaths occurred in the later age periods. At the same time there was an increase in the proportion of deaths at ages 2-5 years, but a slight decrease at under 1 year of age. These features continued during 1920, from which it may be inferred that the type of Influenza was the same as that prevalent in 1918-19, although the virulence has been very much less. The accompanying table, which shows the numbers and percentages of deaths divided in 12 age periods for 1891, 1900, 1919, and 1920, exhibits these facts.

The following table shows week by week the total number of deaths from all causes, the general death-rate, and the number of deaths from Influenza, Pneumonia, Bronchitis.

These figures do not include the deaths of Liverpool residents which occurred outside the City.

| 1920.
Week ending | Total
Deaths. | Weekly
Death rate
per 1,000 of
Estimated
Population. | No. of Deaths from | | | Total
Respiratory
Deaths |
|----------------------|------------------|--|--------------------|--|-------------|--------------------------------|
| | | | Influenza. | Pneumonia
and
Broncho-
Pneumonia. | Bronchitis. | |
| JANUARY 3 (3 days) | 90 | — | — | 16 | 9 | 25 |
| 10 | 248 | 16.5 | 1 | 42 | 31 | 74 |
| 17 | 275 | 18.3 | 1 | 37 | 22 | 60 |
| 24 | 278 | 18.5 | 1 | 36 | 36 | 73 |
| 31 | 314 | 20.9 | 7 | 56 | 42 | 105 |
| FEBRUARY 7 | 299 | 19.9 | 10 | 68 | 43 | 121 |
| 14 | 378 | 25.2 | 14 | 72 | 35 | 121 |
| 21 | 322 | 21.5 | 15 | 76 | 39 | 130 |
| 28 | 372 | 24.8 | 18 | 71 | 53 | 142 |
| MARCH 6 | 394 | 26.3 | 8 | 76 | 50 | 134 |
| 13 | 376 | 25.1 | 19 | 73 | 51 | 143 |
| 20 | 364 | 24.3 | 7 | 69 | 63 | 139 |
| 27 | 349 | 23.3 | 14 | 74 | 54 | 142 |
| | 4,059 | 20.7 | 115 | 766 | 528 | 1,349 |

| 1920.
Week ending | Total
Deaths. | Weekly
Death rate
per 1,000 of
Estimated
Population. | No. of Deaths from | | | Total
Respiratory
Deaths. |
|-------------------------|------------------|--|--------------------|--|------------|---------------------------------|
| | | | Influenza. | Pneumonia
and
Broncho-
Pneumonia. | Bronchitis | |
| 3 | 348 | 23.2 | 8 | 65 | 49 | 120 |
| 10 | 289 | 19.3 | 4 | 51 | 33 | 89 |
| 17 | 274 | 18.3 | 5 | 49 | 41 | 92 |
| 24 | 256 | 17.1 | 11 | 37 | 21 | 61 |
| 1 | 228 | 15.2 | 3 | 33 | 32 | 67 |
| 8 | 258 | 17.2 | 3 | 37 | 28 | 66 |
| 15 | 234 | 15.6 | 3 | 36 | 34 | 72 |
| 22 | 215 | 14.3 | 2 | 21 | 24 | 51 |
| 29 | 205 | 13.7 | 1 | 28 | 24 | 53 |
| 5 | 207 | 13.8 | 5 | 31 | 12 | 45 |
| 12 | 207 | 13.8 | — | 21 | 15 | 36 |
| 19 | 168 | 11.2 | 1 | 19 | 13 | 34 |
| 26 | 174 | 11.6 | — | 17 | 14 | 33 |
| | 3,063 | 15.9 | 46 | 445 | 340 | 819 |
| 3 | 164 | 10.9 | — | 18 | 12 | 30 |
| 10 | 168 | 11.2 | — | 17 | 6 | 26 |
| 17 | 189 | 12.6 | 3 | 16 | 16 | 34 |
| 24 | 162 | 10.8 | — | 10 | 13 | 26 |
| 31 | 162 | 10.8 | — | 16 | 13 | 33 |
| 7 | 185 | 12.3 | — | 15 | 10 | 27 |
| 14 | 130 | 8.7 | — | 6 | 10 | 17 |
| 21 | 152 | 10.1 | — | 10 | 6 | 19 |
| 28 | 153 | 10.2 | — | 14 | 8 | 26 |
| 4 | 168 | 11.2 | 2 | 18 | 9 | 30 |
| 11 | 182 | 12.1 | 1 | 15 | 12 | 28 |
| 18 | 164 | 10.9 | — | 15 | 13 | 30 |
| 25 | 175 | 11.7 | — | 13 | 14 | 30 |
| | 2,154 | 11.0 | 6 | 183 | 142 | 356 |
| 2 | 193 | 12.9 | 1 | 25 | 17 | 48 |
| 9 | 181 | 12.9 | 1 | 20 | 15 | 36 |
| 16 | 199 | 13.3 | 1 | 19 | 20 | 40 |
| 23 | 188 | 12.5 | — | 19 | 17 | 38 |
| 30 | 185 | 12.3 | 1 | 12 | 15 | 28 |
| 6 | 186 | 12.4 | 2 | 16 | 20 | 38 |
| 13 | 247 | 16.5 | 2 | 25 | 27 | 56 |
| 20 | 206 | 13.7 | 2 | 30 | 22 | 59 |
| 27 | 209 | 13.9 | 1 | 22 | 21 | 45 |
| 4 | 227 | 15.1 | 2 | 31 | 29 | 62 |
| 11 | 251 | 16.7 | — | 45 | 31 | 84 |
| 18 | 315 | 21.0 | 4 | 38 | 65 | 109 |
| 25 | 276 | 18.4 | 2 | 57 | 49 | 112 |
| 31 (4 days) | 307 | — | 1 | 51 | 50 | 107 |
| | 3,170 | 15.2 | 20 | 410 | 398 | 862 |
| For the Year
20..... | 12,446 | 15.9 | 187 | 1,804 | 1,408 | 3,383 |

CITY OF LIVERPOOL.
DEATHS FROM INFLUENZA ARRANGED BY AGES AND SEXES DURING THE YEARS 1891, 1900, 1919 AND 1920

| | Under
1 | 5 | 10 | 15 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | Over
80 | Males. | Females. | TOTAL. |
|--|------------|------|-----|-----|-----|------|------|------|------|------|------|------------|--------|----------|--------|
| 1891 ... | ... | 8 | 8 | 3 | 8 | 11 | 33 | 41 | 55 | 48 | 20 | 2 | 132 | 115 | 247 |
| 1900 ... | ... | 8 | 1 | 1 | 4 | 18 | 29 | 37 | 43 | 59 | 30 | 7 | 114 | 134 | 248 |
| 1918 ... | ... | 162 | 87 | 60 | 87 | 304 | 242 | 152 | 130 | 90 | 35 | 6 | 583 | 805* | 1,338 |
| 1919 ... | ... | 102 | 50 | 26 | 66 | 225 | 203 | 155 | 133 | 105 | 40 | 17 | 539 | 624* | 1,163 |
| 1920 ... | ... | 4 | 3 | 1 | 6 | 44 | 36 | 24 | 24 | 21 | 20 | 2 | 97 | 94 | 191 |
| The above deaths expressed as a percentage of the total deaths in each year :— | | | | | | | | | | | | | | | |
| 1891 ... | 4.0 | 3.2 | 3.5 | 1.2 | 3.5 | 4.4 | 13.6 | 16.6 | 22.7 | 19.4 | 8.1 | 0.8 | | | 100 |
| 1900 ... | 4.4 | 3.2 | 0.2 | 0.2 | 1.6 | 7.3 | 11.7 | 14.9 | 17.3 | 23.8 | 12.1 | 2.8 | | | 100 |
| 1918 ... | 2.4 | 12.1 | 5.4 | 4.4 | 5.4 | 22.0 | 18.0 | 11.3 | 9.7 | 6.7 | 2.7 | 0.5 | | | 100 |
| 1919 ... | 3.7 | 8.6 | 4.3 | 2.2 | 5.7 | 19.7 | 17.8 | 13.6 | 11.6 | 9.2 | 3.5 | 1.5 | | | 100 |
| 1920 ... | 2.5 | 2.1 | 1.4 | 0.4 | 3.1 | 23.0 | 18.3 | 12.5 | 12.5 | 11.0 | 10.9 | 1.1 | | | 100 |

*The excess of female over male deaths in 1918 and 1919 was due to the absence of many men on military service. In 1920 the proportion had returned to the normal.

DIGESTIVE DISEASES AND DIARRHŒA.

The following table shows the mortality from Digestive Diseases—including diarrhœa—in the City of Liverpool during the last 50 years:—

| | | Actual
Deaths. | Deaths
expressed as
a percentage
of deaths from
all causes. | Death-rate
per 1,000
population. | Death-rates
as a
percentage
of the
1871-80 rate. |
|---------------|-----|-------------------|---|--|--|
| 1871-1880 ... | ... | 14,747 | 10·0 | 2·8 | 100. |
| 1881-1890 ... | ... | 13,186 | 9·4 | 2·4 | 85·7 |
| 1891-1900 ... | ... | 18,491 | 12·7 | 3·0 | 107·2 |
| 1900-1910 ... | ... | 18,163 | 12·0 | 2·5 | 89·3 |
| 1911-1920 ... | ... | 12,282 | 8·9 | 1·59 | 56·7 |
| 1920 ... | ... | 821 | 6·4 | 1·05 | 37·5 |

It will be observed that the deaths from digestive diseases, which had been very numerous prior to 1871, fell in the penultimate decade of last century, but rose again in the last decade. Since the early years of the present century there has been a marked decline in the number of deaths. This was especially marked during the latter years of the war.

Diarrhœa and Enteritis form the greater part of the deaths from digestive diseases. Of these deaths approximately two-thirds occur in infants under one year of age. The age distribution of deaths from diarrhœa and enteritis during the past 50 years is shown on the next page.

| AVERAGE NUMBERS. | | | | | | PER CENT. | | | |
|------------------|-------|-------|------|-----------------|--------|-----------|------|-----|-----------------|
| | 1 | 2 | 5 | Over
5 years | Total | 1 | 2 | 5 | Over
5 years |
| 1871-1880 ... | 559.9 | 170.4 | 36.3 | 79.4 | 846.0 | 66.2 | 20.1 | 4.3 | 9.4 |
| 1881-1890 ... | 361.5 | 121.0 | 35.2 | 58.0 | 575.7 | 62.7 | 21.0 | 6.1 | 10.1 |
| 1891-1900 ... | 577.4 | 167.7 | 40.8 | 60.1 | 846.0 | 68.0 | 19.8 | 4.8 | 7.2 |
| 1901-1910 ... | 591.7 | 207.9 | 45.3 | 35.3 | 880.2 | 67.2 | 23.6 | 5.2 | 4.0 |
| 1911-1915 ... | 619.6 | 285.4 | 58.6 | 43.2 | 1006.8 | 61.3 | 28.3 | 5.8 | 4.3 |
| 1916-1919 ... | 312.2 | 104.5 | 31.2 | 63.5 | 511.5 | 61.0 | 20.4 | 6.1 | 12.4 |
| 1920 ... | 382. | 61. | 17. | 29. | 489. | 79.1 | 12.5 | 3.5 | 5.9 |

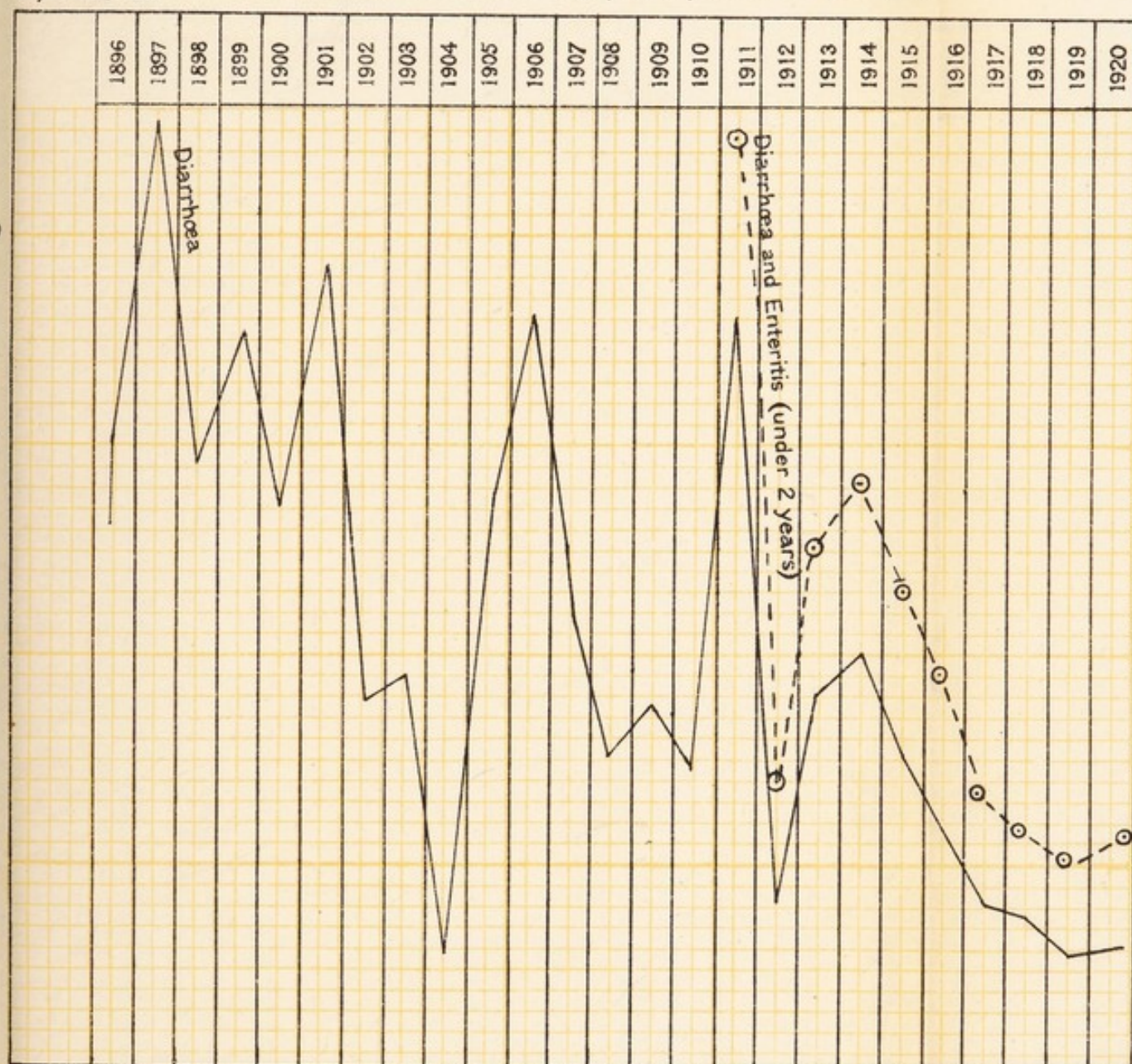
It will be observed that down to 1915 there was a decline in the proportion of deaths from diarrhœal diseases in persons over five years of age, but that otherwise there was very little variation in the ages at death. During the war period, however, owing to the fall in the birth-rate, the proportions varied somewhat. Owing to the rapid rise in the birth-rate in 1920 the proportions at different ages were quite abnormal. Under these circumstances the comparatively low total of deaths from diarrhœal diseases, namely, 489, is very satisfactory. This total corresponds to a mortality of .62 per 100,000 inhabitants. The accompanying diagram shows the death-rates from diarrhœa at all ages during 1896 to 1910 and from diarrhœa and enteritis under two years of age from 1911 onwards; the general decline in diarrhœal mortality is exhibited, and also the very marked rise in mortality that occurs in hot summers, notably in 1911. In the Annual Report for that year particular attention was directed to the relationship between the temperature, the prevalence of flies, and the number of deaths from diarrhœa.

The second diagram shows for the months June, July, August, and September of the years 1916 to 1920 the relationship between these three data week by week. The prevalence of flies was observed by recording the numbers of flies caught on fly-papers in some stations in various

CITY OF LIVERPOOL.

Diarrhoea Death, Rates (all ages), per 100,000 Population, 1896-1920,
together with the combined rate from Diarrhoea
and Enteritis (under 2 years), for 1911-1920.

O/M. 42081 Est.



WEEKLY TEMPERATURE. 1916 - 1920.

9.

1920.

NO
FET

SEPTEMBER

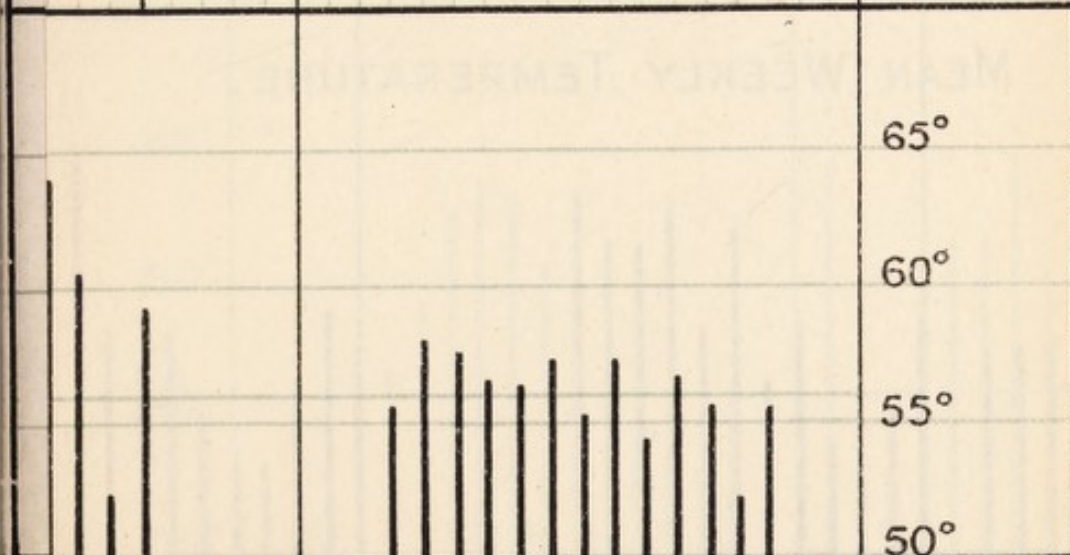
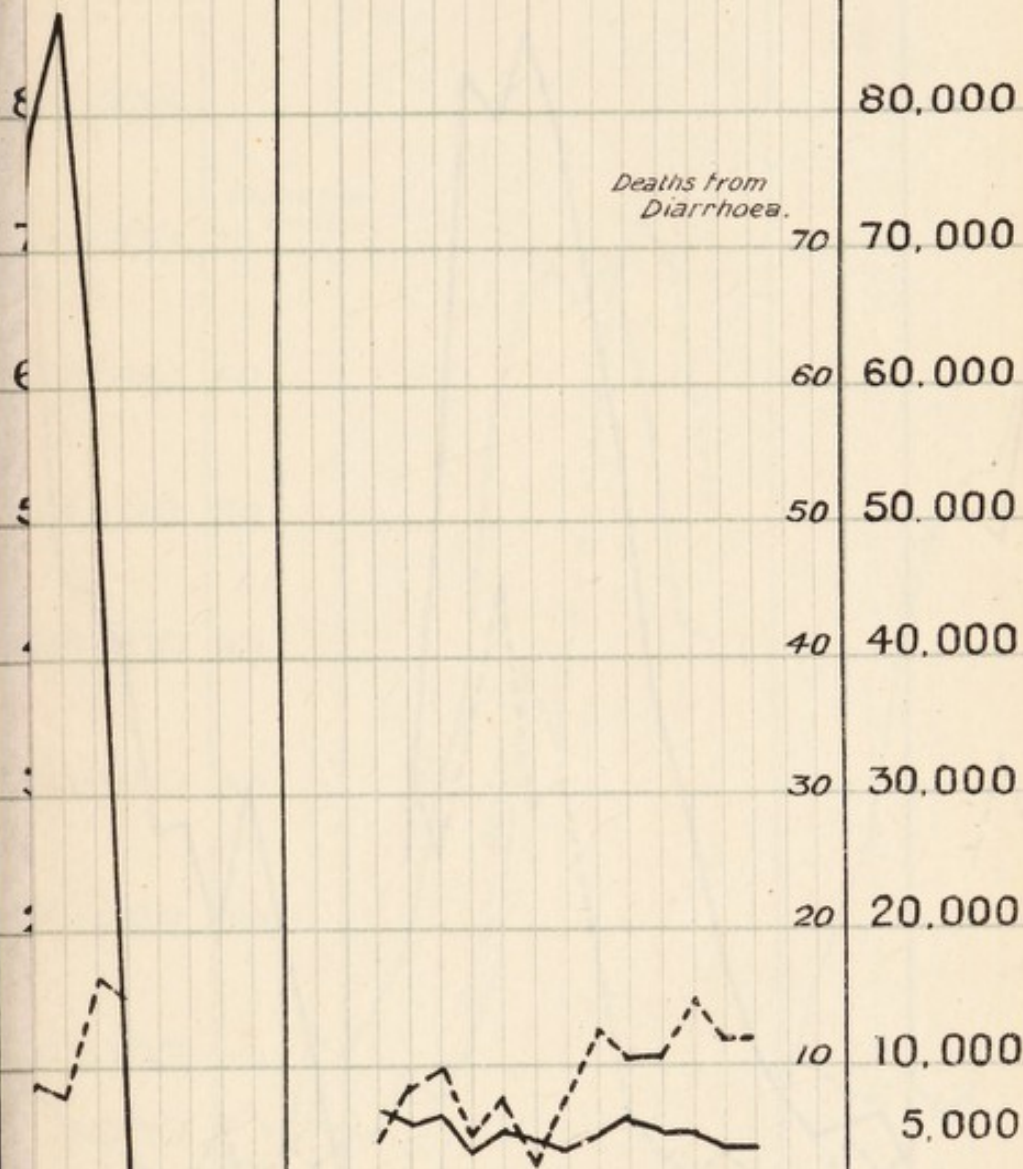
JUNE

JULY

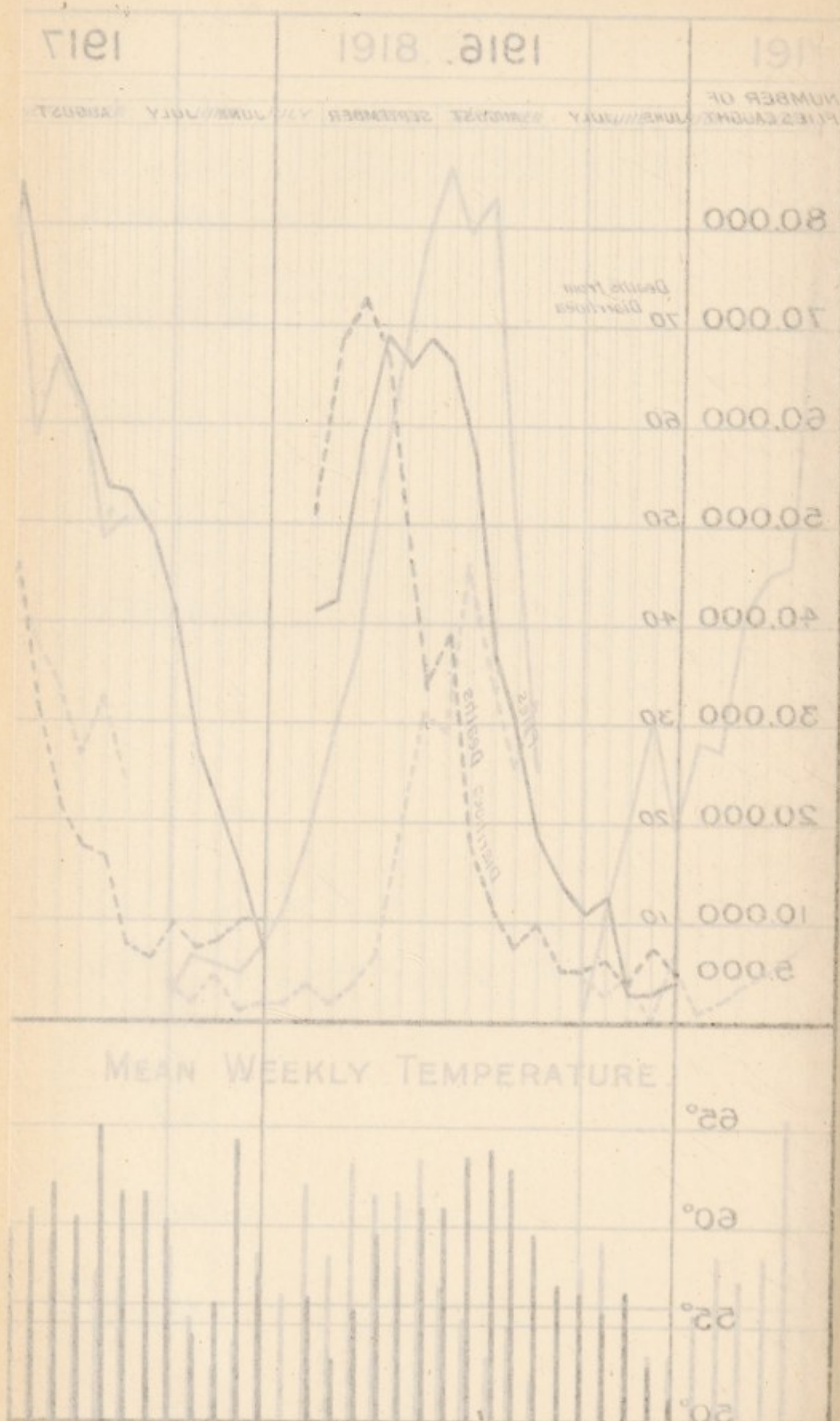
AUGUST

SEPTEMBER

NUMBER OF
FLIES CAUGHT.



W. N. A. DIAGRAM ILLUSTRATING THE CORRELATION BE-



parts of the City. The fly-papers used were all of the same pattern, and were renewed daily. The deaths recorded are those from diarrhœa and enteritis in children under two years of age. It will be observed that the year 1920 was remarkable in that the summer temperature was very low, the numbers of flies caught was quite exceptionally small and the deaths from diarrhœa during the summer were very low. In fact diarrhœa became more prevalent in October than it had been at any time during the summer.

Previous reports embodying the work of Professor Newstead have shown that the principal breeding places of the common fly are in stable middens. The following notice has been issued to the owners of stables in recent years with the object of securing the frequent removal of manure from the latter:—

NOTICE.

REMOVAL OF MANURE FROM STABLES.

The Health Committee are very desirous that Manure from Stables should be removed with as little delay as possible, and with this object in view, arrangements have been made with the City Engineer for its speedy removal.

On application to the City Engineer, Municipal Offices, Dale Street, Manure will be removed from stable yards as often as required, free of charge.

The following table shows the number, monthly distribution, and nature of cases of Infectious Disease coming under the notice of the Medical Officer of Health during the year 1920:—

| YEAR—
1920. | FEVER. | | Plague. | Scarlet Fever. | Measles and German Measles. | Diphtheria and Group. | Smallpox. | Puerperal Fever. | Erysipelas. | Cerebro-spinal Fever. | Polionmyelitis. | Ophthalmia Neonatorum. | Anthrax. | Pneumonia & Influenzal Pneumonia. | Malaria. | Trench Fever. | Dysentery. | Encephalitis Tetanica. |
|---------------------|----------|------------------|---------|----------------|-----------------------------|-----------------------|-----------|------------------|-------------|-----------------------|-----------------|------------------------|----------|-----------------------------------|----------|---------------|------------|------------------------|
| | Enteric. | Relapsing Fever. | | | | | | | | | | | | | | | | |
| January ... | 6 | ... | ... | 359 | 2585 | 211 | 3 | 5 | 73 | 4 | ... | 66 | ... | 260 | 41 | 1 | 2 | 1 |
| February | 5 | ... | ... | 264 | 3287 | 218 | 1 | 6 | 54 | 3 | ... | 89 | ... | 337 | 14 | 1 | 1 | 1 |
| March ... | 1 | ... | ... | 230 | 2900 | 168 | 2 | 7 | 46 | 4 | ... | 79 | ... | 328 | 11 | ... | 4 | 2 |
| April | ... | ... | ... | 181 | 856 | 107 | 3 | 7 | 30 | 5 | ... | 66 | ... | 200 | 15 | ... | 1 | ... |
| May | 4 | ... | ... | 327 | 606 | 149 | ... | 5 | 30 | 2 | ... | 76 | 1 | 193 | 17 | ... | 4 | ... |
| June | 2 | ... | 1 | 278 | 561 | 109 | ... | 8 | 26 | 2 | ... | 62 | 2 | 125 | 16 | ... | ... | 2 |
| July | 8 | ... | ... | 251 | 159 | 155 | ... | 4 | 37 | ... | ... | 61 | ... | 82 | 11 | ... | ... | 1 |
| August ... | 2 | ... | ... | 172 | 72 | 81 | ... | 3 | 30 | 1 | 2 | 70 | ... | 48 | 8 | ... | 1 | 4 |
| September | 3 | ... | ... | 224 | 74 | 95 | ... | 2 | 41 | 4 | 1 | 58 | ... | 84 | 13 | ... | ... | 2 |
| October ... | 7 | ... | ... | 403 | 68 | 124 | ... | 5 | 51 | 2 | 2 | 49 | ... | 137 | 12 | ... | 1 | 2 |
| November | 4 | ... | ... | 299 | 118 | 127 | ... | 8 | 47 | ... | 1 | 46 | 1 | 102 | 5 | ... | ... | 1 |
| December | 2 | 2 | ... | 242 | 162 | 110 | ... | 9 | 40 | ... | ... | 44 | ... | 208 | 9 | ... | ... | 1 |
| TOTAL... | 44 | 2 | 1 | 3230 | 11448 | 1654 | 9 | 69 | 505 | 27 | 6 | 766 | 4 | 2104 | 172 | 2 | 14 | 17 |
| Removed to hospital | 38 | 2 | 1 | 2633 | 593 | 1467 | 9 | 51 | 150 | 24 | 3 | 65 | 4 | 997 | 30 | ... | 2 | 14 |

The number of patients removed to hospital includes those admitted to the general hospitals, as well as those admitted to the city infectious diseases hospitals.

NOTIFICATION OF INFECTIOUS DISEASE.

The following is a list of the diseases notifiable in the City of Liverpool during 1920:—

| | |
|--------------------------------|-----------------------------|
| Anthrax | Ophthalmia Neonatorum |
| Anterior Poliomyelitis | Paratyphoid Fever |
| Cerebro Spinal Fever | Plague |
| Cholera. | Pneumonia, Acute Influenzal |
| Continued Fever | Pneumonia, Acute Primary |
| Diphtheria | Polioencephalitis, Acute |
| Dysentery | Puerperal Fever |
| Enteric | Relapsing Fever |
| Erysipelas | Scarlet Fever or Scarlatina |
| Encephalitis Lethargica, Acute | Smallpox |
| German Measles | Tuberculosis (all forms) |
| Measles | Trench Fever |
| Malaria | Typhoid Fever |
| Membranous Croup | Typhus Fever. |

The numbers of notifications received by the Medical Officer during the past three years, were as follows:—

| | 1918. | 1919. | 1920. |
|------------------|---------------|---------------|---------------|
| January | 766 | 548 | 2,604 |
| February | 880 | 493 | 3,093 |
| March | 1,266 | 917 | 2,733 |
| April | 1,573 | 620 | 1,198 |
| May | 1,822 | 772 | 1,103 |
| June | 1,332 | 706 | 1,073 |
| July | 998 | 653 | 800 |
| August | 715 | 554 | 567 |
| September | 714 | 736 | 739 |
| October | 723 | 1,105 | 816 |
| November | 507 | 1,389 | 825 |
| December | 637 | 1,997 | 856 |
| | <u>11,933</u> | <u>10,490</u> | <u>16,407</u> |

The diseases were certified as follows:—

| | | | <u>1918.</u> | | <u>1919.</u> | | <u>1920.</u> |
|----------------------------|-----|-----|---------------|-----|---------------|-----|---------------|
| Smallpox ... | ... | ... | 1 | ... | 8 | ... | 10 |
| Scarlet Fever ... | ... | ... | 2,713 | ... | 2,592 | ... | 3,040 |
| Enteric Fever ... | ... | ... | 68 | ... | 68 | ... | 71 |
| Paratyphoid Fever ... | ... | ... | — | ... | — | ... | 4 |
| Typhus Fever ... | ... | ... | 4 | ... | 3 | ... | 3 |
| Puerperal Fever ... | ... | ... | 27 | ... | 60 | ... | 60 |
| Continued Fever ... | ... | ... | — | ... | — | ... | 2 |
| Diphtheria and Croup ... | ... | ... | 1,333 | ... | 1,807 | ... | 1,527 |
| Erysipelas... ... | ... | ... | 487 | ... | 564 | ... | 519 |
| Anthrax ... | ... | ... | 12 | ... | 18 | ... | 10 |
| Cerebro-Spinal Fever ... | ... | ... | 22 | ... | 45 | ... | 31 |
| Acute Poliomyelitis ... | ... | ... | 3 | ... | 5 | ... | 5 |
| Measles and German | | | | | | | |
| Measles ... | ... | ... | 6,676 | ... | 2,953 | ... | 7,110 |
| Ophthalmia | | | | | | | |
| Neonatorum ... | ... | ... | 587 | ... | 672 | ... | 766 |
| †Pneumonia and | | | | | | | |
| Influenzal Pneumonia | | | — | ... | 1,269 | ... | 2,165 |
| †Malaria ... | ... | ... | — | ... | 395 | ... | 169 |
| †Trench Fever ... | ... | ... | — | ... | 2 | ... | 1 |
| †Dysentery... ... | ... | ... | — | ... | 26 | ... | 17 |
| Encephalitis Lethargica... | | | — | ... | 3 | ... | 22 |
| Chickenpox ... | ... | ... | — | ... | — | ... | 874 |
| Plague ... | ... | ... | — | ... | — | ... | 1 |
| | | | <u>11,933</u> | | <u>10,490</u> | | <u>16,407</u> |

† Notifiable as from 1st March, 1919.

The following table gives a summary of cases of Infectious Disease coming under the notice of the Medical Officer of Health during the last six years:—

| DISEASE. | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 |
|-------------------------------|-------|---------|-------|-------|-------|--------|
| Smallpox | — | — | 2 | — | 13 | 9 |
| Plague | — | 6 | — | — | 1 | 1 |
| Typhus Fever | 37 | 2 | 1 | 2 | — | — |
| Enteric Fever | 136 | 76 | 54 | 65 | 39 | 44 |
| Scarlet Fever | 2,984 | 2,148 | 2,277 | 3,020 | 2,797 | 3,230 |
| Measles and German Measles | 3,049 | 14,732* | 9,230 | 9,268 | 3,983 | 11,448 |
| Diphtheria | 1,208 | 1,106 | 1,117 | 1,494 | 1,959 | 1,654 |
| Puerperal Fever..... | 54 | 52 | 33 | 28 | 55 | 69 |
| Erysipelas | 749 | 579 | 383 | 454 | 564 | 505 |
| Cerebro-Spinal Fever | 30 | 37 | 34 | 17 | 25 | 27 |
| Poliomyelitis | 5 | 9 | 4 | 6 | 2 | 6 |
| Ophthalmia Neonatorum ... | 503 | 515 | 516 | 587 | 672 | 766 |
| Anthrax | 6 | 15 | 7 | 10 | 14 | 4 |
| Encephalitis Lethargica | — | — | — | — | 2† | 17 |

* Notifiable as from 1st January, 1916.

† Do. do. 1st March, 1919.

DEATHS FROM INFECTIOUS DISEASE.

Table shewing the deaths from Infectious Disease occurring during the last six years (1915-1920):—

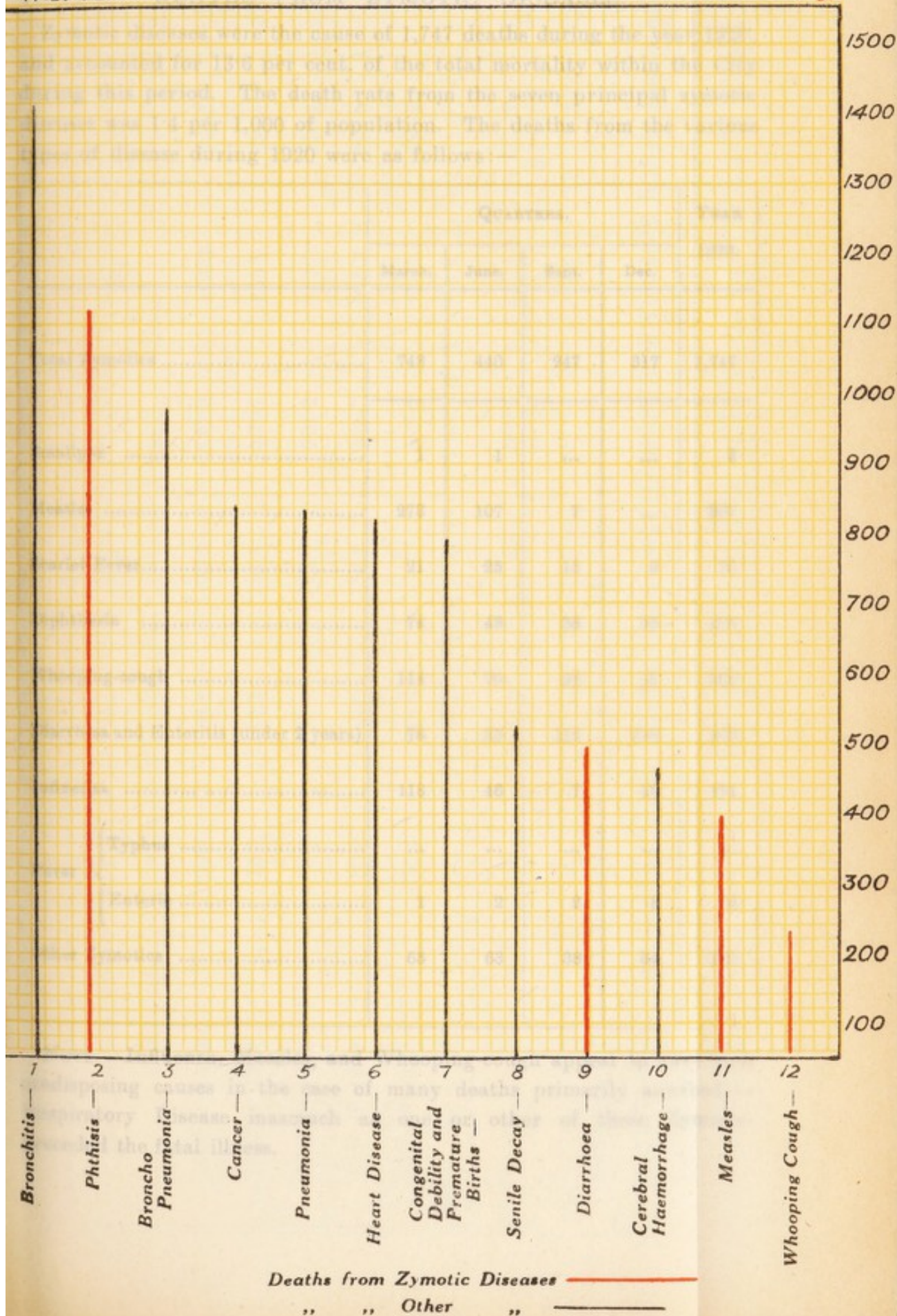
| DISEASE. | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 |
|-------------------------------|------|------|------|------|------|------|
| Smallpox | — | — | 1 | — | 1 | 2 |
| Plague | — | 4 | — | — | 1 | 1 |
| Typhus Fever..... | 6 | 2 | — | — | — | — |
| Enteric Fever | 21 | 11 | 15 | 13 | 7 | 8 |
| Scarlet Fever | 70 | 63 | 71 | 133 | 74 | 70 |
| Measles and German Measles | 256 | 264 | 436 | 407 | 103 | 387 |
| Diphtheria | 136 | 137 | 143 | 228 | 212 | 188 |
| Puerperal Fever..... | 27 | 22 | 16 | 17 | 20 | 37 |
| Erysipelas | 33 | 15 | 14 | 15 | 23 | 26 |
| Cerebro-Spinal Fever | 23 | 4 | 23 | 12 | 22 | 18 |
| Poliomyelitis | 4 | 4 | 3 | 5 | — | — |
| Anthrax | 2 | 3 | 1 | — | 3 | 1 |
| Encephalitis Lethargica | — | — | — | — | — | 2 |
| Whooping Cough | 259 | 235 | 132 | 364 | 53 | 228 |

CITY OF LIVERPOOL.

COMPARATIVE VIEW OF TWELVE OF THE PRINCIPAL CAUSES OF DEATH DURING THE YEAR 1920.

M42059 Est.

DEATHS FROM ZYMOTIC DISEASES



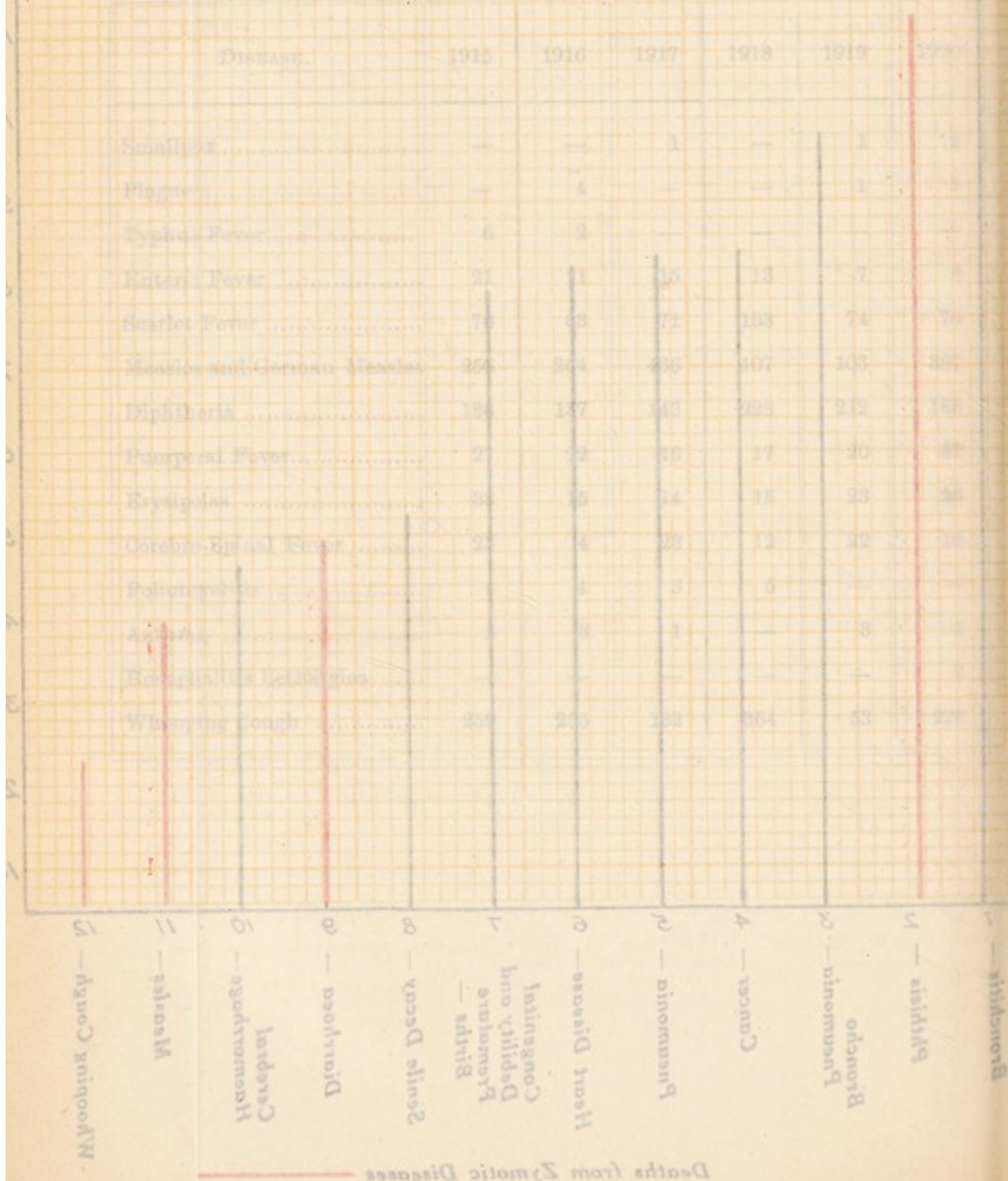
CITY OF LIVERPOOL.

COMPARATIVE VIEW OF TWELVE OF THE PRINCIPAL CAUSES OF DEATH DURING THE YEAR 1920.

1920

DEATHS FROM INFECTIOUS DISEASE.

Table showing the deaths from Infectious Disease occurring during the last six years (1915-1920):—



DEATHS FROM ZYMOTIC DISEASES.

Zymotic diseases were the cause of 1,747 deaths during the year 1920, and accounted for 13·6 per cent. of the total mortality within the City during this period. The death rate from the seven principal zymotic diseases was 1·4 per 1,000 of population. The deaths from the various types of disease during 1920 were as follows:—

| | QUARTERS. | | | | YEAR
1920. |
|---|---------------|-------|-------|------|---------------|
| | March. | June. | Sept. | Dec. | |
| Total Zymotics | 743 | 440 | 247 | 317 | 1,747 |
| Smallpox | 1 | 1 | ... | ... | 2 |
| Measles | 273 | 107 | 7 | ... | 387 |
| Scarlet Fever..... | 21 | 25 | 15 | 9 | 70 |
| Diphtheria | 74 | 43 | 36 | 35 | 188 |
| Whooping-cough | 114 | 70 | 26 | 18 | 228 |
| Diarrhoea and Enteritis (under 2 years) | 76 | 83 | 116 | 168 | 443 |
| Influenza | 118 | 46 | 7 | 20 | 191 |
| Fever { | Typhus | ... | ... | ... | ... |
| | | | | | |
| Fever { | Enteric | 1 | 2 | 3 | 8 |
| | | | | | |
| Other Zymotics | 65 | 63 | 38 | 64 | 230 |

NOTE.—Influenza, Measles, and Whooping-cough appear to have been predisposing causes in the case of many deaths primarily ascribed to Respiratory Disease inasmuch as one or other of these Zymotics preceded the fatal illness.

THE FOLLOWING TABLE SHOWING THE ANNUAL AVERAGE NUMBER OF DEATHS FROM SEVEN OF THE PRINCIPAL ZYMOTIC DISEASES DURING EACH OF THE LAST FIVE DECENNIAL PERIODS, IS INTERESTING AND INSTRUCTIVE. THE DECLINE IN THE MORE FORMIDABLE FORMS OF INFECTIOUS DISEASES IS VERY MARKED.

| Years. | Small Pox. | Typhus. | Enteric. | Scarlet Fever. | Measles. | Whooping Cough. | Diarrhoea. |
|---------------------|------------|---------|----------|----------------|----------|-----------------|------------|
| 1866 to 1875 | 237.4 | 652.8 | † — | 789.4 | 425.7 | 496.8 | 995.3 |
| 1876 to 1885 | 90.8 | 238.0 | 126.4 | 421.2 | 517.8 | 472.3 | 658.4 |
| 1886 to 1895 | 8.8 | 37.1 | 153.0 | 257.5 | 399.5 | 322.4 | 600.6 |
| *1896 to 1905 | 19.5 | 25.1 | 134.4 | 201.3 | 329.0 | 330.4 | 1,061.9 |
| 1906 to 1915 | 0.04 | 5.7 | 50.3 | 141.6 | 438.0 | 296.7 | 848.0 |
| Year 1920..... | 2 | — | 8 | 70 | 387 | 228 | 239 |

* Including extended City area.

† Records not available.

ANNUAL AVERAGE NUMBER OF DEATHS FROM SEVEN OF THE PRINCIPAL ZYMOTIC DISEASES
DURING EACH OF THE LAST FIVE DECENNIAL PERIODS, DISTINGUISHING THOSE
OF PERSONS ABOVE AND BELOW FIVE YEARS OF AGE.

| YEARS. | SMALLPOX. | | TYPHUS. | | ENTERIC. | | SCARLET FEVER. | | MEASLES. | | WHOOPIING COUGH. | | DIARRHŒA. | |
|----------------|-----------|----------|----------|----------|----------|----------|----------------|----------|----------|----------|------------------|----------|-----------|----------|
| | Above 5. | Below 5. | Above 5. | Below 5. | Above 5. | Below 5. | Above 5. | Below 5. | Above 5. | Below 5. | Above 5. | Below 5. | Above 5. | Below 5. |
| 1866 to 1875 | 141.7 | 95.7 | *— | *— | * — | * — | 187.7 | 601.7 | 14.4 | 411.3 | 9.9 | 486.9 | 105.7 | 889.6 |
| 1876 to 1885 | 62.5 | 28.3 | +190.0 | +5.1 | +110.3 | +12.1 | 137.0 | 284.2 | 35.4 | 482.4 | 18.6 | 453.7 | 61.9 | 596.5 |
| 1886 to 1895 | 6.2 | 2.6 | 36.2 | .9 | 142.0 | 11.0 | 87.6 | 169.9 | 28.3 | 371.2 | 15.1 | 307.3 | 60.2 | 540.4 |
| **1896 to 1905 | 14.5 | 5.0 | 24.2 | .9 | 128.4 | 6.0 | 61.7 | 139.6 | 17.1 | 311.9 | 11.9 | 318.5 | 53.6 | 1,008.3 |
| 1906 to 1915 | .04 | — | 5.5 | .2 | 49.0 | 1.3 | 50.9 | 90.7 | 23.9 | 414.1 | 9.2 | 287.5 | 30.8 | 817.2 |
| 1920 | 2 | — | — | — | 8 | — | 38 | 32 | 24 | 363 | 13 | 215 | 3 | 236 |

* During these years the ages at death from Typhus and Enteric were not differentiated.

** Including extended City area.

† During the six years, 1880-1885.

The following table shows the number of deaths, the annual average death-rate per 100,000 of the population from the undermentioned forms of disease during the last six decades, 1856 to 1915, and during 1920:—

| DISEASE. | Average Population | 1856
to 1865. | 1866
to 1875. | 1876
to 1885. | 1886
to 1895. | 1896†
to 1905. | 1906‡
to 1915 | 7 |
|---------------------------|---|------------------|------------------|------------------|------------------|-------------------|------------------|---|
| Scarlet
Fever | <div> <div>Total Deaths ...</div> <div>Rate per 100,000
per annum.</div> </div> | 443,938. | 493,405. | 538,651. | 536,974. | 691,351. | 747,015. | |
| | | 5,994 | 7,894 | 4,212 | 2,575 | 2,013 | 1,416 | |
| | | 135.0 | 159.9 | 78.1 | 47.9 | 29.1 | 19.0 | |
| Typhus
Fever | <div> <div>Total Deaths ...</div> <div>Rate per 100,000
per annum.</div> </div> | 7,482 | 6,528 | 2,380 | 371 | 251 | 57 | |
| | | 168.5 | 132.2 | 44.1 | 6.9 | 3.6 | 0.8 | |
| Enteric
Fever | <div> <div>Total Deaths ...</div> <div>Rate per 100,000
per annum.</div> </div> | * | * | 1,264 | 1,530 | 1,344 | 503 | |
| | | — | — | 21.5 | 28.4 | 19.3 | 6.7 | |
| Measles | <div> <div>Total Deaths ...</div> <div>Rate per 100,000
per annum.</div> </div> | 3,215 | 4,257 | 5,178 | 3,995 | 3,290 | 4,380 | |
| | | 72.4 | 86.2 | 96.1 | 74.3 | 47.5 | 58.6 | |
| Whooping
Cough | <div> <div>Total Deaths ...</div> <div>Rate per 100,000
per annum.</div> </div> | 4,779 | 4,968 | 4,723 | 3,224 | 3,304 | 2,967 | |
| | | 107.6 | 100.6 | 87.6 | 60.0 | 47.7 | 39.7 | |
| Smallpox | <div> <div>Total Deaths ...</div> <div>Rate per 100,000
per annum.</div> </div> | 1,673 | 2,374 | 908 | 88 | 195 | 3 | |
| | | 37.6 | 48.1 | 16.8 | 1.6 | 2.8 | 0.4 | |
| Phthisis | <div> <div>Total Deaths ...</div> <div>Rate per 100,000
per annum.</div> </div> | 15,572 | 16,476 | 13,754 | 11,436 | 12,632 | 12,010 | |
| | | 350.7 | 333.9 | 255.3 | 212.9 | 182.7 | 160.7 | |

† City Boundaries extended in 1895, 1902, 1905.

* Records not available.

‡ " " " 1913.

CANCER.

The following table indicates the number of deaths from Cancer during the year 1920, and the part of the body affected:—

| DISEASE. | Males. | Females. | Total. |
|----------------------------------|--------|----------|--------|
| Cancer of Buccal Cavity | 67 | 5 | 72 |
| „ Stomach and Bowels..... | 152 | 129 | 281 |
| „ Intestines | 88 | 80 | 168 |
| „ Breast | — | 75 | 75 |
| „ Female Generative Organs | — | 90 | 90 |
| „ Skin | 5 | 4 | 9 |
| „ Parts not specified | 97 | 54 | 151 |
| Total | 409 | 437 | 846 |

DEATHS FROM EXCESSIVE DRINKING, &c.

The welcome decrease previously noted in the number of deaths due to or accelerated by excessive drinking of intoxicating liquors has been maintained. The beneficial results of the restricted manufacture and sale of intoxicating drink are not to be measured by a reduced mortality only, but there is also a great decrease in the number of cases of delirium tremens coming under treatment in public institutions.

The decrease in the mortality from excessive drinking which is especially noticeable in regard to females, has been followed by a decrease in the numbers of infants dying from suffocation caused through overlying by their parents. The following table shows the deaths due to excessive drinking during the past seven years:—

| YEAR. | MALES. | FEMALES. | TOTAL. |
|-------|--------|----------|--------|
| 1914 | 73 | 52 | 125 |
| 1915 | 48 | 38 | 86 |
| 1916 | 35 | 9 | 44 |
| 1917 | 33 | 15 | 48 |
| 1918 | 14 | 2 | 16 |
| 1919 | 19 | — | 19 |
| 1920 | 7 | 7 | 14 |

The deaths of infants under one year of age from suffocation have been as follows:—

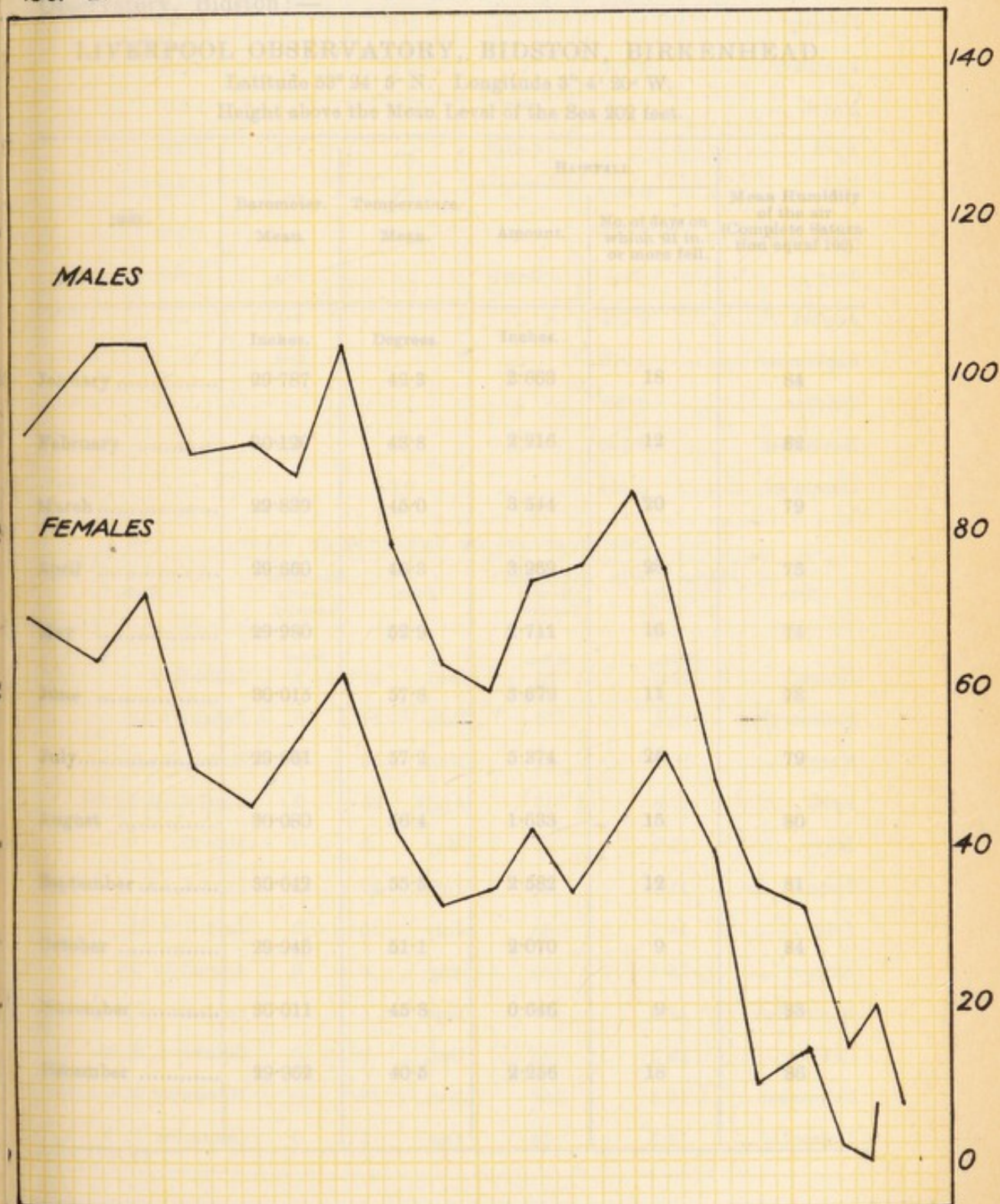
| YEAR. | DEATHS. |
|-------------|---------|
| 1914 | 76 |
| 1915 | 50 |
| 1916 | 36 |
| 1917 | 23 |
| 1918 | 26 |
| 1919 | 25 |
| 1920 | 23 |

CITY OF LIVERPOOL.

Deaths from excessive drinking during the 20 years
1901 to 1920.

Marked reduction in number of deaths coincides with period
of restricted sale of Alcoholic Liquors.

1901 2. 3. 4. 5. 6. 7. 8. 9. 10. 1. 2. 3. 4 5. 6. 7. 8. 9. 20.



CITY OF LIVERPOOL.

Deaths from excessive drinking during the 30 years

1901 to 1930.

DEATHS FROM EXCESSIVE DRINKING.

Marked reduction in number of deaths coincides with period

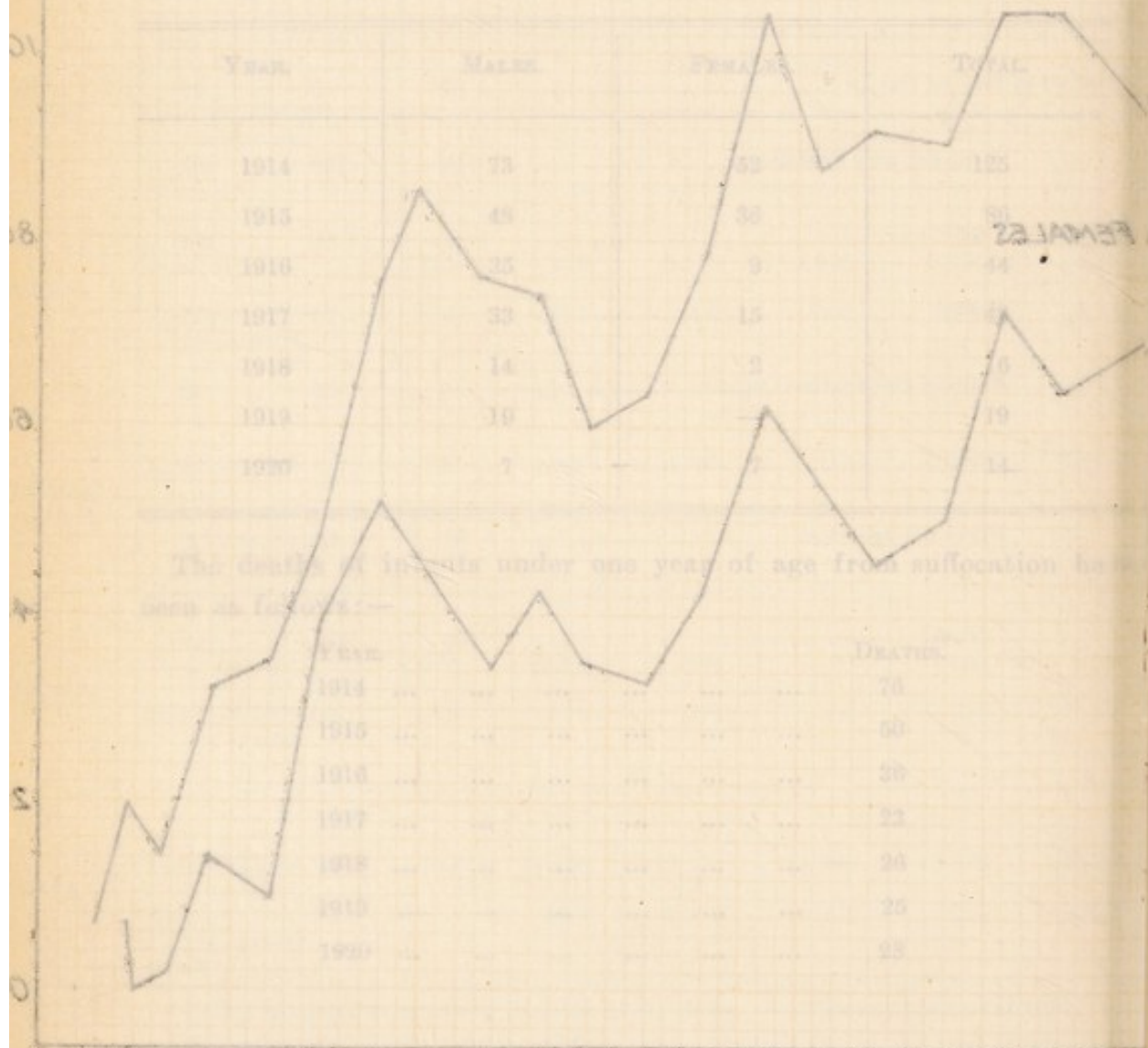
of restricted sale of Alcoholic Liquors.

The welcome reduction in the number of deaths from excessive drinking

is clearly shown in the following table and graph.

The decrease in the mortality from excessive drinking which is clearly shown in the following table and graph is due to the fact that the number of deaths from excessive drinking has been reduced by the restriction of the sale of alcoholic liquors.

The decrease in the mortality from excessive drinking which is clearly shown in the following table and graph is due to the fact that the number of deaths from excessive drinking has been reduced by the restriction of the sale of alcoholic liquors.



METEOROLOGY.

Mr. W. E. Plummer, M.A., F.R.A.S., Astronomer to the Mersey Docks and Harbour Board, has kindly furnished the following tables relating to Meteorological observations made by him at the Liverpool Observatory, Bidston:—

LIVERPOOL OBSERVATORY, BIDSTON, BIRKENHEAD.

Latitude $53^{\circ} 24' 5''$ N. Longitude $3^{\circ} 4' 20''$ W.

Height above the Mean Level of the Sea 202 feet.

| 1920. | Barometer.
Mean. | Temperature.
Mean. | RAINFALL. | | Mean Humidity
of the air
(Complete Saturation equal 100). |
|-----------------|---------------------|-----------------------|-----------|--|---|
| | | | Amount. | No. of days on
which .01 in.
or more fell. | |
| | Inches. | Degrees. | Inches. | | |
| January | 29.787 | 42.3 | 2.663 | 18 | 84 |
| February | 30.120 | 43.8 | 2.216 | 12 | 82 |
| March | 29.839 | 45.0 | 3.544 | 20 | 79 |
| April | 29.660 | 46.3 | 3.969 | 28 | 73 |
| May | 29.980 | 52.9 | 2.711 | 16 | 74 |
| June | 30.015 | 57.8 | 3.679 | 11 | 73 |
| July | 29.861 | 57.2 | 5.374 | 25 | 79 |
| August | 30.080 | 56.4 | 1.633 | 15 | 80 |
| September | 30.042 | 55.5 | 2.582 | 12 | 81 |
| October | 29.946 | 51.1 | 2.070 | 9 | 84 |
| November | 30.011 | 45.8 | 0.646 | 9 | 83 |
| December | 29.962 | 40.5 | 2.256 | 18 | 86 |

DIFFERENCE FROM THE AVERAGE QUANTITIES OBSERVED DURING THE
LAST 50 YEARS.

| 1920. | BAROMETER. | | TEMPERATURE. | | RAINFALL. | |
|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | Above
Average. | Below
Average. | Above
Average. | Below
Average. | Above
Average. | Below
Average. |
| | Inches. | Inches. | Degrees. | Degrees. | Inches. | Inches. |
| January | ... | 0.154 | 3.1 | ... | 0.538 | ... |
| February | 0.201 | ... | 2.6 | ... | 0.508 | ... |
| March | ... | 0.039 | 2.8 | ... | 1.642 | ... |
| April | ... | 0.250 | ... | 1.0 | 2.299 | ... |
| May | 0.010 | ... | 1.1 | ... | 0.766 | ... |
| June | 0.025 | ... | 0.4 | ... | 1.584 | ... |
| July | ... | 0.091 | ... | 3.6 | 2.683 | ... |
| August | 0.165 | ... | ... | 4.1 | ... | 1.379 |
| September | 0.076 | ... | ... | 0.8 | ... | 0.185 |
| October..... | 0.068 | ... | 1.5 | ... | ... | 1.316 |
| November | 0.120 | ... | 2.6 | ... | ... | 1.837 |
| December..... | 0.124 | ... | 0.6 | ... | ... | 0.489 |

OBSERVATIONS OF VELOCITY OF WIND.

| 1920. | Average Hourly
Velocity
for Month. | Maximum
Hourly
Velocity. | Date. | Minimum
Hourly
Velocity. | Date. |
|---------------|--|--------------------------------|------------|--------------------------------|---|
| | Miles. | Miles. | | Miles. | |
| January | 22.8 | 70 | Jan. 11 | 2 | January 6. |
| February.... | 19.4 | 57 | Feb. 11 | 0 | February 23. |
| March..... | 16.4 | 58 | Mar. 15 | 0 | March 21, 29. |
| April | 17.3 | 43 | April 25 | 0 | April 8, 10, 23, 30. |
| May | 17.2 | 55 | May 3 | 0 | May 27. |
| June | 13.7 | 41 | June 29 | 1 | June 4, 18. |
| July | 14.7 | 38 | July 13 | 0 | July 8, 9, 21. |
| August | 13.3 | 35 | Aug. 6 | 0 | August 12, 28. |
| September.. | 12.5 | 37 | Sept. 4, 5 | 1 | September 7, 12, 18, 23,
25. |
| October..... | 13.3 | 40 | Oct. 3 | 0 | October 2, 8, 15. |
| November... | 16.5 | 56 | Nov. 15 | 0 | November 2, 3, 5, 28. |
| December... | 13.3 | 74 | Dec. 3 | 0 | December 7, 9, 12, 13,
14, 17, 18, 23. |

ATMOSPHERIC POLLUTION, 1920.
RESULT OF ANALYSES BY THE CITY ANALYST.

| | JULY. | AUGUST. | SEPTEMBER. | OCTOBER. | NOVEMBER. | DECEMBER. | TOTALS FOR
6 MONTHS. |
|-----------------------------------|--------------------------|--------------------------|--|--------------------------|--------------------------|--------------------------|-------------------------|
| | Tons per
square mile. | Tons per
square mile. | Tons per
square mile. | Tons per
square mile. | Tons per
square mile. | Tons per
square mile. | |
| Sum Total Solids | 46-843 | 39-525 | 35-113 | 36-057 | 38-097 | 66-376 | 262-011 |
| UNDISSOLVED MATTER— | | | | | | | |
| Tarry Matter and Bitumen | 0-459 | 0-230 | 0-459 | 0-331 | 0-612 | 0-676 | 2-767 |
| Other Organic Matter | 7-191 | 7-267 | 6-375 | 5-890 | 6-859 | 10-868 | 44-450 |
| Mineral Matter | 15-427 | 12-826 | 14-458 | 14-000 | 18-207 | 29-544 | 104-462 |
| Total Undissolved Matter | 23-077 | 20-323 | 21-292 | 20-221 | 25-678 | 41-088 | 151-679 |
| DISSOLVED MATTER— | | | | | | | |
| Organic Matter by Ignition | 6-145 | 7-752 | 3-468 | 6-222 | 4-029 | 9-557 | 37-173 |
| Mineral Matter | 17-621 | 11-450 | 10-353 | 9-614 | 8-390 | 15-731 | 73-159 |
| Total Dissolved Matter | 23-766 | 19-202 | 13-821 | 15-836 | 12-419 | 25-288 | 110-332 |
| Alkalinity as NH_3 | 0-127 | 0-076 | Acidity as
H_2SO_4
0-357 | 0-043 | 0-043 | 0-097 | |
| Chlorine as Cl | 1-504 | 1-377 | 0-918 | 0-994 | 0-688 | 2-626 | |
| Ammonia as NH_3 | 0-510 | 0-433 | 0-255 | 0-255 | 0-230 | 0-433 | |
| Sulphate as SO_3 | 12-189 | 6-936 | 5-023 | 5-686 | 4-105 | 6-936 | |
| Lime as CaO | 1-963 | 1-453 | 1-377 | 1-428 | 1-163 | 1-543 | |
| RAINFALL { Millimetres ... | 167-7 | 54-7 | 63-9 | 50-9 | 25-4 | 60-5 | 423-1 |
| { Inches | 6-60 | 2-15 | 2-52 | 2-0 | 1-0 | 2-38 | 16-65 |

ATMOSPHERIC POLLUTION.

During the War the atmospheric pollution gauge which had been placed in the North Tuberculosis Dispensary, Netherfield Road North, was removed, owing to the occupation of those premises as a day nursery. The gauge was replaced during 1920, and came into operation on the first of July.

The foregoing table shows the result of the analyses made by the City Analyst during the second half of the year. It will be seen that deposits of soot and other matter fall on every square mile of that part of Liverpool in amounts averaging some 40 tons per month. A considerable proportion of this amount is organic matter largely derived from the incomplete combustion of coal. The action taken in the past for the prevention of smoke nuisances is fully vindicated by these figures, but it is evident that there is still considerable room for improvement.

PUBLIC HEALTH (PNEUMONIA, DYSENTERY, ETC.).

REGULATIONS, 1919.

The following Statement shows the number of notifications received under the regulations and the number of deaths during 1919 and 1920.

| | 1919. | | 1920. | |
|---------------------|---------|---------|--------|---------|
| | Cases. | Deaths. | Cases. | Deaths. |
| Acute Pneumonia ... | * 1,359 | 1,803 | 2,165 | 1,804 |
| Malaria ... | * 429 | 10 | 169 | 7 |
| Trench Fever ... | * 3 | ... | 1 | 1 |
| Dysentery ... | * 28 | 14 | 17 | 10 |
| | 1,819 | | 2,452 | |

* Nine months only.

Enquiry was made into all these cases; numerous cases of Influenzal Pneumonia were visited and received assistance from nurses appointed for the purpose, and the services of other members of the staff who were trained nurses were utilised.

The majority of the cases of Malaria were amongst ex-soldiers who had been infected whilst on active service in tropical climates. The remainder were amongst the sea-faring population and were principally persons infected on the African Coast. One indigenous case was reported. This person was taken ill whilst away in another part of England and died shortly after return to Liverpool. A post-mortem examination showed the death to have been caused by sub-tertian malaria. Investigation of the locality where infection took place was carried out by the School of Tropical Medicine and the Anopheles mosquito was found to be present there.

MATERNITY and CHILD WELFARE.

A prominent feature of the year 1920 has been the remarkable increase in the number of births which have taken place. If attention is directed to the chart (page 4), which shews the birth rates of the last 40 years, it will be seen that a progressive diminution has taken place since the year 1902. This decrease was accentuated by the War, and in 1918 it touched the lowest recorded figure of 21·9 per 1,000 of the total population. In 1919 the rate increased slightly to 23·9, but last year it rose to 32·0 per 1,000, representing a total of 25,039 births, the largest total ever recorded for the City.

The aim of Health Authorities being to save as many of these infants as it is possible, encouragement is given to all forms of voluntary organisation which will help in this direction. Financial assistance has been given to a number of Institutions and Associations which carry on Maternity and Child Welfare Work, such as the Maternity Hospital, the Liverpool Child Welfare Association, Liverpool Ladies' Sanitary Association, the University Settlement, Babies' Homes, etc., where mothers can consult qualified medical officers and receive advice on minor ailments and the best manner of avoiding the dangers of pregnancy and infancy. In districts where these arrangements have been insufficient for the needs of the population, the Maternity and Child Welfare Committee have established Ante-natal Centres and Infant Clinics, with these objects in view.

There are three important sections of health administration affecting the welfare of young children which merge into one another and cannot be said to have any other than an artificial separating line. They are conducted under the names of Ante-natal Clinics, Infant and Child Welfare Clinics, and the Medical Inspection of School Children. The probable explanation of this partitioning is that the three aspects were dealt with at different times and introduced under different conditions.

Most observers familiar with the work now share the view that the problems involved are best solved by unity of action under one administrative control, but it must at the same time be recognised that the success of the administrative details, involving as they do, the co-operation of large numbers of people, will be best ensured by the tact and intelligence of those engaged in them, rather than upon hard and fast and stereotyped regulations. National schemes of child welfare, aided by thousands of workers, both voluntary and official, have in co-operation with the efforts of public authorities in improving general environment, given most encouraging results. Legislation has facilitated the work in many directions, and tends to make it easier and cheaper.

In dealing with the very young we are obviously dealing with the nation of the future. The conditions of life which produce a high infant mortality lead to future ill-health amongst the survivors, and it is fully recognised that there is no more promising field in preventive medicine than in the prevention of diseases in childhood. The prevention of unhealthy parentage, diseases of infancy and diseases of childhood are the basis of the health of the future.

The medical inspection of school children clearly shows that the defects from which the "entrants" in school life are frequently found to be suffering are to a great extent the legacy of infantile and pre-school ailments. The condition of the sufferers, intercepted and treated as an outcome of medical inspection, no doubt would in many cases have been averted had it been brought to light earlier.

At present it may be fairly said that the arrangements relating to ante-natal and post-natal welfare are of a kind to bring all, or nearly all, mothers and infants, and children up to the first four or five years of their lives, under the special supervision, so far as health is concerned, of the Health Authorities. There is every reason why the continuity of that health supervision should remain unbroken; it is an administrative blunder to break that continuity so soon as a child reaches its fifth birthday, and impose the obligation for the child's health upon a different body, constituted for a wholly different purpose, and by no means always appreciative of the health needs of the child. It may perhaps be well

to bear in mind that the reason for this break is not the fault of the Education Authority, but it arose rather from the difficulties of the Central Health Authority in making provision for meeting the necessities in regard to the health of school children. The credit for the step of Medical Inspection of School Children must rest with the Board of Education which established a special health section of its own to enable its real work, namely, the education of the child, to be effectively carried on. It is highly probable that the Ministry of Health will in due course accept responsibility in regard to the medical inspection of school children, the result of which will be to transfer to the local Health Authority the administrative details in connection therewith.

The importance of the close connection between the Child Welfare and School Medical Departments was from the start appreciated in Liverpool. The Medical Officer of Health was appointed the Medical Officer to the Education Committee and charged with the responsibility for the medical staff engaged in the medical inspection of school children. The Health Visitors, nearly all of them fully trained nurses, were appointed by the Health Committee to help the School Medical Officers and to examine the condition of the children, as far as cleanliness and sufficiency and suitability of clothing are concerned. Children whose parents have neglected them in these respects, as well as children suffering from remediable ailments discovered by the doctors, have been visited at their homes by this staff. As a result of these visits, infants and children not yet of school age, found to be neglected or ailing, are also brought under the observation of the appropriate agencies. Attention is given to the home surroundings as well as the health of the occupants; advice is given in various domestic difficulties—food, clothing, fireguards, country holidays for children, etc. The Health Visitors put the mothers, whenever necessary, in touch with the various agencies through which they can obtain help and instruction, such as the Infant Consultations, Corporation Milk Depôts, Child Welfare Association, and Ladies' Sanitary Association and other Associations.

In the present stage of evolution of the child welfare campaign the position is that the Health Visitors *may* visit the children up to 5 years of age, and the Education Authority *may* provide Nursery Schools for children from 2 years up to 5 years of age, the practical outcome of which is that neither department has the direct duty imposed upon it in regard to the welfare of these children outside of measures to combat infectious diseases. It is highly desirable that the continuity of the official medical and nursing supervision should be retained unbroken from birth until the end of school life.

Under one body, the fusion of control of activities designed with the object of improving the welfare of motherhood, and childhood up to the end of school age, would be attended with many advantages which may be summarised as follows:—

- (1) Convergence of aim, with comprehensive instead of departmental views.
- (2) A large saving of money would result, as the same staff of doctors and nurses and the same premises could be utilised—a saving in capital outlay and running expenses.

Under such a Scheme the school doctors and nurses would be available for attendance at Baby Clinics, Day Nurseries and Nursery Schools, as well as the elementary schools. Records of all defects and illnesses would be kept in the various Infant Welfare departments, and subsequently transferred to the School departments. Incidentally the increased scope of work would make the School Medical Officer's work more interesting and varied, whilst less frequent changes in the staff would result in increased efficiency.

One further advantage of utilising the same Medical Officers and nurses in dealing with the children from birth through school life is that greater confidence of the parents would be required. It is a well recognised fact that one of the great obstacles in the way of parents obtaining treatment for their children's defects in many cases arises from the parents not being convinced of the necessity for such treatment. Constant association with the same doctors and nurses would engender a more friendly feeling, they would more readily accept medical advice, and they would come to regard the Medical Officer as a sort of family doctor, feeling that he knows their constitution.

The preventive measures adopted for further protecting child life have been fully dealt with in Special Reports made to the Health Committee by the Medical Officer of Health.

The relation which the deaths of infants under one year of age has borne to every thousand births in the various districts of the City during the year 1920 and during the previous five years, 1915-1919 is shown in the following table:—

| DISTRICTS. | Number
of Births.
1920. | Number of
Deaths
under 1 year
of age.
1920. | Deaths
under 1 year
per 1000
Births.
1920. | Average
number of
Deaths under
1 year per
1000 Births
1915-1919. |
|-------------------------|-------------------------------|---|--|---|
| Scotland | 1,889 | 293 | 155 | 155 |
| Exchange | 1,235 | 212 | 171 | 176 |
| Abercromby | 1,281 | 170 | 133 | 128 |
| Everton | 4,540 | 543 | 120 | 132 |
| Kirkdale | 2,307 | 286 | 124 | 133 |
| West Derby (West) | 3,014 | 324 | 107 | 113 |
| Toxteth | 3,664 | 378 | 103 | 118 |
| Walton | 2,119 | 186 | 88 | 93 |
| West Derby (East) | 2,088 | 194 | 93 | 90 |
| Wavertree | 1,090 | 94 | 86 | 86 |
| Toxteth—(East) | 771 | 46 | 60 | 75 |
| Garston | 766 | 80 | 104 | 109 |
| Fazakerley | 107 | 9 | 84 | 105 |
| Woolton | 163 | 11 | 65 | 71 |
| City | 25,039 | 2,826 | 113 | 123 |

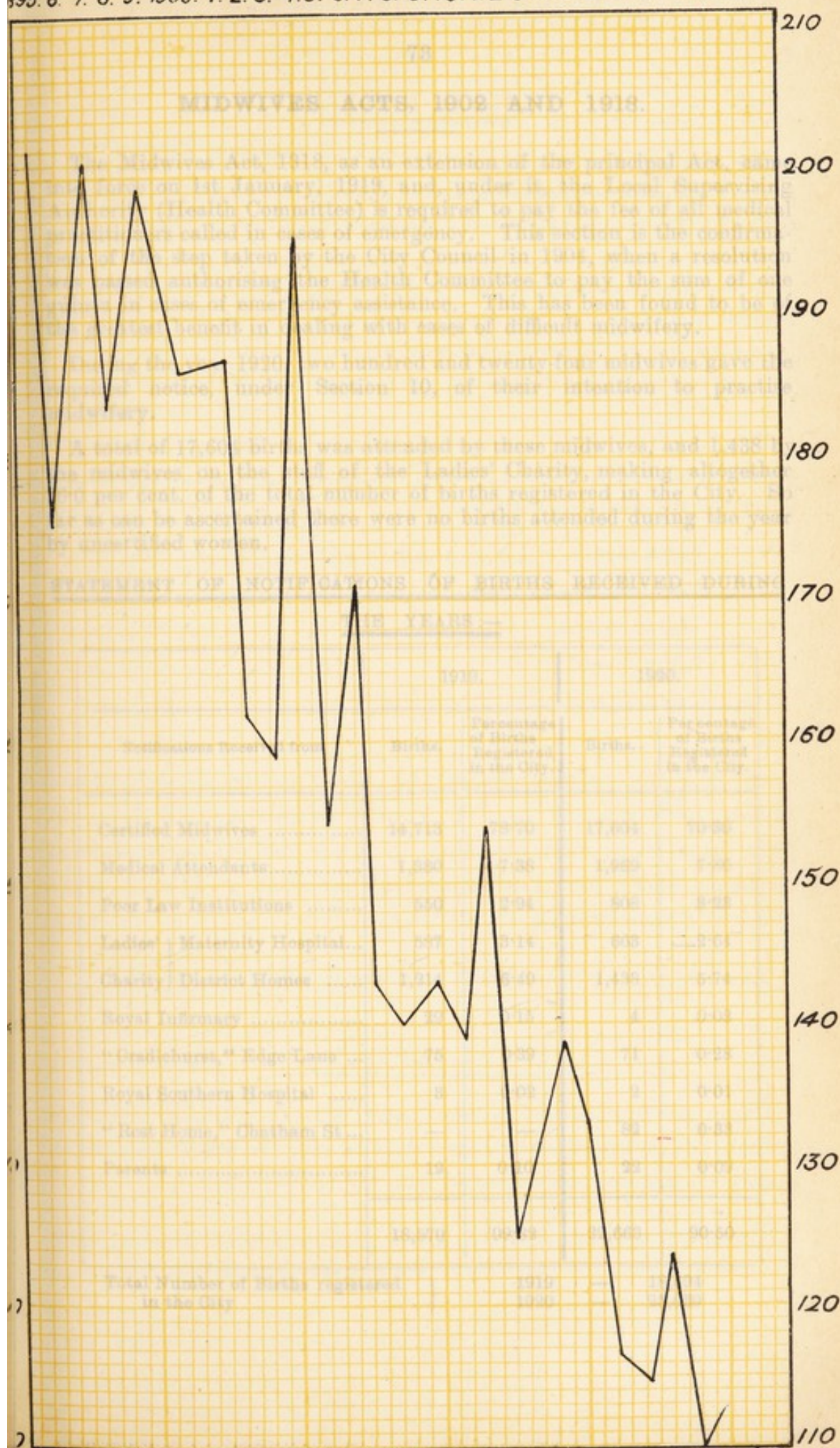
The following table shows the number of deaths of infants below one year of age and the rate per 1,000 births during the last twenty years:—

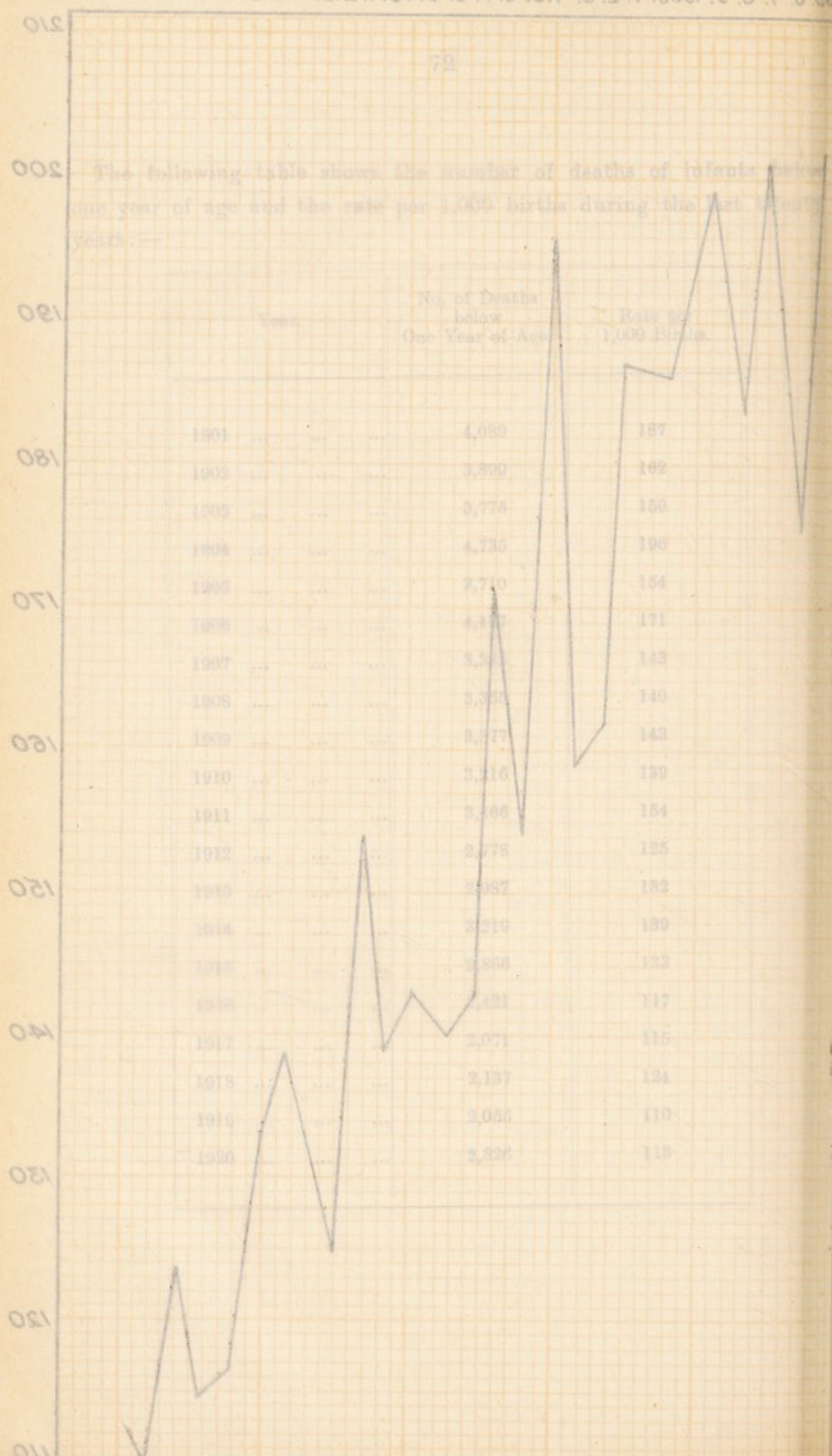
| Year. | No. of Deaths
below
One Year of Age. | Rate per
1,000 Births. |
|-------------|--|---------------------------|
| 1901 | 4,089 | 187 |
| 1902 | 3,899 | 162 |
| 1903 | 3,775 | 159 |
| 1904 | 4,735 | 196 |
| 1905 | 3,710 | 154 |
| 1906 | 4,137 | 171 |
| 1907 | 3,383 | 143 |
| 1908 | 3,355 | 140 |
| 1909 | 3,377 | 143 |
| 1910 | 3,216 | 139 |
| 1911 | 3,466 | 154 |
| 1912 | 2,778 | 125 |
| 1913 | 2,987 | 132 |
| 1914 | 3,219 | 139 |
| 1915 | 2,866 | 133 |
| 1916 | 2,421 | 117 |
| 1917 | 2,071 | 115 |
| 1918 | 2,137 | 124 |
| 1919 | 2,055 | 110 |
| 1920 | 2,826 | 113 |

CITY OF LIVERPOOL.

Infant Mortality per 1000 Births. 1895-1920.

1895. 6. 7. 8. 9. 1900. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 1. 2. 3. 4. 5. 6. 7. 8. 9. 1920.





MIDWIVES ACTS, 1902 AND 1918.

The Midwives Act, 1918, as an extension of the principal Act, came into force on 1st January, 1919, and, under it, the Local Supervising Authority (Health Committee) is required to pay the fee of all medical practitioners called in cases of emergency. This section is the confirmation of the step taken by the City Council in 1904, when a resolution was passed authorising the Health Committee to pay the sum of one guinea in cases of emergency assistance. This has been found to be of the greatest benefit in dealing with cases of difficult midwifery.

During the year 1920, two hundred and twenty-four midwives gave the required notice, under Section 10, of their intention to practise midwifery.

A total of 17,604 births was attended by these midwives, and 1,438 by the midwives on the staff of the Ladies' Charity, making altogether 76·0 per cent. of the total number of births registered in the City. So far as can be ascertained there were no births attended during the year by uncertified women.

STATEMENT OF NOTIFICATIONS OF BIRTHS RECEIVED DURING

THE YEARS:—

| | 1919. | | 1920. | |
|-------------------------------|---------|--|---------|--|
| Notifications Received from | Births. | Percentage of Births Registered in the City. | Births. | Percentage of Births Registered in the City. |
| Certified Midwives | 14,713 | 78·70 | 17,604 | 70·30 |
| Medical Attendants..... | 1,380 | 7·38 | 1,969 | 7·86 |
| Poor Law Institutions | 550 | 2·94 | 808 | 3·23 |
| Ladies' Maternity Hospital... | 587 | 3·14 | 663 | 2·64 |
| Charity District Homes | 1,214 | 6·49 | 1,438 | 5·74 |
| Royal Infirmary | 29 | 0·15 | 4 | 0·02 |
| "Cradlehurst," Edge Lane ... | 75 | 0·39 | 71 | 0·28 |
| Royal Southern Hospital | 3 | 0·02 | 2 | 0·01 |
| "Rest Home," Chatham St ... | — | — | 82 | 0·33 |
| Parents | 19 | 0·10 | 22 | 0·09 |
| | 18,570 | 99·32 | 22,663 | 90·50 |

| | | | | |
|---|---|------|---|--------|
| Total Number of Births registered in the City | } | 1919 | — | 18,694 |
| | | 1920 | — | 25,039 |

STILL BIRTHS.

The number of still-births notified during 1920 was 859, of which number 524 were notified by midwives, being at the rate of 2·7 per cent. of the births attended by them.

In no case does a midwife give a certificate of still-birth unless she is present at the time of birth; she is instructed that if the birth should take place before her arrival she must report the matter to the Coroner, who, after enquiry, grants a certificate for the burial of the body.

Enquiries were made into the circumstances of these still-births, and the following are the figures relating to the months of pregnancy during which the still-births took place:—

| | | | | | | |
|---------------|-----|-----|-----|-----|-----|-----------------|
| Sixth month | ... | ... | ... | ... | ... | 40 |
| Seventh month | ... | ... | ... | ... | ... | 143 |
| Eighth month | ... | ... | ... | ... | ... | 86 |
| Ninth month | ... | ... | ... | ... | ... | 255 |
| | | | | | | <hr/> 524 <hr/> |

Of these 411 were examined by the City Bacteriologist, and 43, or 10 per cent., gave a Positive Wasserman reaction. In these cases every effort was made to induce the patient to undergo treatment under their private medical attendant or at one of the Venereal Diseases Clinics.

The number of visits paid with reference to still-births was 1,072.

MEDICAL ASSISTANCE.

Under the Rules issued by the Central Midwives' Board, a midwife must advise that medical assistance shall be called in where there is any abnormal circumstances connected with the confinement.

The following table gives the details of the complications for which medical assistance was required during the past two years:—

| MOTHER : | 1919. | 1920. |
|---|--------------|--------------|
| Abnormal Presentation : | | |
| Brow or Face Presentation | 19 | 32 |
| Occipito-posterior Presentation | 30 | 48 |
| Transverse Presentation | 30 | 33 |
| Breech Presentation | 41 | 48 |
| Foot Presentation | 4 | 13 |
| Cord Presentation | 6 | 28 |
| Placenta Prævia | 10 | 11 |
| Deformed Pelvis | 54 | 60 |
| Ante-partum Hæmorrhage | 93 | 105 |
| Post-partum Hæmorrhage | 54 | 77 |
| Retained Placenta or Membranes | 95 | 149 |
| Ruptured Perinæum | 227 | 325 |
| Multiple Births | 18 | 10 |
| Abortion or Premature Birth | 81 | 73 |
| Pyrexia | 112 | 147 |
| Eclampsia | 10 | 25 |
| Obstructed Labour, Uterine Inertia, or requiring
Instrumental Assistance... .. | 462 | 660 |
| Influenza | 1 | 5 |
| Various | 169 | 201 |
| CHILD : | | |
| Injury at Birth | — | 3 |
| Malformation | 62 | 35 |
| Feebleness and Prematurity | 14 | 232 |
| Skin Eruption | 23 | 8 |
| Ophthalmia | 147 | 202 |
| Other conditions in child | 63 | 82 |
| | <u>1,925</u> | <u>2,612</u> |

The number of visits of enquiry with regard to Accounts for Emergency Assistance during the year was 1,867.

LYING-IN HOMES.

The registration of lying-in homes is very necessary so that supervision may be carried out to ensure that the homes are properly conducted.

At the present time there are fifty lying-in homes in Liverpool, and of these thirty-six are superintended by qualified Midwives, the remaining fourteen being homes kept by Nurses who are not Midwives, and who call in medical aid.

On the receipt of a notification of a birth in one of these homes the Inspector of Midwives visits the house for the purpose of ascertaining the home address of the patient, and what provision is being made for the infant to receive suitable care.

| | | | | | | |
|---|-----|-----|-----|-----|-----|----|
| Number of Lying-in Homes | ... | ... | ... | ... | ... | 50 |
| Number of Homes Superintended by Midwives | ... | ... | ... | ... | ... | 36 |

Number of Births in the above homes during 1920:—

| | | | | | | |
|-----------------------|-----|-----|-----|-----|-----|-----------------|
| Legitimate Children | ... | ... | ... | ... | ... | 442 |
| Illegitimate Children | ... | ... | ... | ... | ... | 100 |
| | | | | | | <hr/> 542 <hr/> |

(Of the above number 13 were still-born.)

PUERPERAL FEVER.

The number of cases of Puerperal Fever notified to the Medical Officer of Health during the year was 69, of which 36 proved fatal. This gives a death-rate of 1·49 per 1,000 births in the City.

Fifty cases were removed to hospital, viz.:—9 to Brownlow Hill Infirmary; 6 to Mill Road Infirmary; 28 to Walton Institution; 5 to Toxteth Infirmary, and 2 to the Royal Infirmary.

After the usual enquiries were made, 45 cases (of which 25 died) were found to have occurred in the practice of midwives. Nine midwives had two cases each. The number of visits paid in this connection was 70.

The following table shows the annual rate of mortality per 1,000 of the total births since the year 1915:—

| Year. | Total number of births in the City. | Total number of :— | | Death rate per 1,000 births. | Removed to Hospital. |
|-------|-------------------------------------|--------------------|---------|------------------------------|----------------------|
| | | Cases. | Deaths. | | |
| 1915 | 21,586 | 54 | 27 | 1·25 | 43 |
| 1916 | 20,679 | 52 | 22 | 1·06 | 38 |
| 1917 | 17,906 | 33 | 16 | 0·89 | 21 |
| 1918 | 17,133 | 28 | 16 | 0·93 | 23 |
| 1919 | 18,694 | 55 | 20 | 1·07 | 37 |
| 1920 | 25,039 | 69 | 36 | 1·49 | 50 |

ROUTINE VISITS TO MIDWIVES.

Rule 25 laid down by the Central Midwives' Board states as follows:—"The Local Supervising Authority shall make arrangements "to secure a proper inspection of the Register of cases, bag of "appliances, etc., of every midwife practising in the district of such "authority, and when thought necessary, an inspection of her place of "residence, and an investigation of her mode of practice."

For this purpose three fully trained Female Inspectors have been appointed, all of whom hold the certificate of the Central Midwives' Board. During the year, 4,336 visits were paid to the homes of practising midwives for the purpose of inspection, and for special enquiries relating to their work.

The midwives of the City are, with very rare exceptions, fully trained women. They have for many years been encouraged by the Medical Officer of Health to form themselves into an Association, which, year by year, has become numerically stronger, and that Association embraces nearly all, if not quite all, of the midwives in the City. The great

advantage of this is, that the midwives as a body are now closely linked up with sanitary administration, and they themselves, as well as their patients, derive considerable advantage from this. For example, they arrange for themselves special courses of instruction, at which they receive much help (from lectures and in other ways) from the gynaecologists of the City.

The adoption of the Notification of Births Act, which renders it obligatory on the part of the medical attendant or midwife, as well as the father of the child, to notify the occurrence of a birth, has been a very valuable aid to the working of the Midwives Act.

MATERNITY AND REST HOME.

During the early part of the year the Maternity and Rest Home which was provided and equipped by the Maternity and Child Welfare Subcommittee, aided by the generosity of the American Red Cross Society and the Stanley Rogers Memorial Committee, was opened by the Lady Mayoress (Mrs. Burton Eills).

It consists of two wards, together with an emergency ward and an isolation ward, containing 15 beds in all. It is intended to provide accommodation for women whose physical condition or home circumstances make it very desirable that they should have rest and care before, during, or after their confinements. It has proved to be of immense benefit in this way, and has been very much appreciated by those who have been received into the Home.

PATIENTS ADMITTED.

| | |
|---|-----|
| Ante-natal cases | 47 |
| Confinements | 58 |
| Post-natal cases (38 with infants) | 52 |
| <hr/> | |
| Total | 157 |
| <hr/> | |

OPHTHALMIA NEONATORUM.

INFLAMMATION OF THE EYES OF THE NEWLY-BORN.

The following figures give some details as to the sources of information and character of the cases dealt with during the year:—

The total number of cases brought to the notice of the department, 844.

| | | | | | |
|------------------------------|-----|-----|-----|-----|-------|
| (1) Reported by Doctors | ... | ... | ... | ... | 85 |
| (2) „ from Hospitals | ... | ... | ... | ... | 34 |
| (3) „ by Midwives | ... | ... | ... | ... | 617 |
| (4) Discovered by Inspectors | ... | ... | ... | ... | 107 |
| (5) Reported by Parent | ... | ... | ... | ... | 1-844 |

The above consisted of:—

| | | | | | | |
|-------------------------------|-----|-----|-----|-----|-----|--------|
| (1) Mild cases | ... | ... | ... | ... | ... | 548 |
| (2) Severe cases | ... | ... | ... | ... | ... | 202 |
| (3) Under private treatment | ... | ... | ... | ... | ... | 16-766 |
| (4) Not Ophthalmia Neonatorum | ... | ... | ... | ... | ... | 78 |

Number treated in their own homes under special

| | | | | | | |
|--|-----|-----|-----|-----|-----|--------|
| nurse | ... | ... | ... | ... | ... | 488 |
| „ attended at Hospital as out-patients | ... | ... | ... | ... | ... | 197 |
| „ admitted into Hospital | ... | ... | ... | ... | ... | 65 |
| „ treated by Doctors and Private Nurse | ... | ... | ... | ... | ... | 16-766 |

INTERVAL IN DAYS BETWEEN BIRTH AND ONSET OF DISEASE.

| Days. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 days
and
over. | Total. |
|-------------------------------------|-----|----|----|----|----|----|----|----|----|-------------------------|--------|
| Notified
Cases
during
1920 | 102 | 83 | 97 | 66 | 74 | 60 | 76 | 52 | 42 | 101 | 753 |

There were 13 cases in which no information was received.

Arrangements have been made with the City Bacteriologist to examine the discharge in every notified case of inflamed eyes in the newly-born. This enables a prompt verification of the disease to be determined.

| No. of Notifications. | Cases from which Specimens were Examined by City Bacteriologist. | No. of Cases Positive Gonorrhoea. | Percentage to Total Cases Examined. | Percentage to Total Notification. |
|-----------------------|--|-----------------------------------|-------------------------------------|-----------------------------------|
| 766 | 137 | 58 | 42.3 | 7.5 |

TABLE SHEWING INFECTION OF EYES AT ONSET.

| Both Eyes. | Right Eye. | Left Eye. | Doubtful. | Total. |
|------------|------------|-----------|-----------|--------|
| 431 | 162 | 150 | 23 | 766 |

In the 162 cases where the right eye only was affected at onset the other eye became affected in 19 cases.

In the 150 cases where the left eye was affected at onset the other eye became affected in 13 cases.

The total number of visits and revisits paid in respect of the above cases was 6,840.

A very important part of the Scheme for dealing with this disease is the provision at St. Paul's Eye Hospital of 12 beds and cots for the reception of infants with their mothers, where the former can be under the immediate care of Ophthalmic Surgeons and Nurses during the acute stage of the disease.

From the statistical table it will be seen that 65 babies were admitted with their mothers and the average stay in hospital was 16 days.

RESULTS.

| | | | | |
|---|-----|-----|-----|-------|
| Number of cases cured | ... | ... | ... | 691 |
| „ under treatment 31/12/20 | ... | ... | ... | 30 |
| „ in which damage to sight resulted (see below) | ... | ... | ... | 5 |
| „ died during treatment | ... | ... | ... | 18 |
| „ under private treatment | ... | ... | ... | 16 |
| „ removed to other towns | ... | ... | ... | 6-766 |

One case in which the sight of both eyes was slightly impaired.

One case in which the sight of one eye was lost and the other normal.

Three cases in which the sight of one eye was impaired and the other eye normal.

The results in these cases were chiefly due to congenital weakness in the infants or delay in bringing the disease under proper treatment.

In no case was the sight of the infant completely destroyed.

As it has been estimated that over one-third of the blind children owe their misfortune to this disease the results obtained may be considered very satisfactory.

INFANT WELFARE CENTRES AND MILK DEPOTS.

The total number of persons supplied with milk during the year was 20,371, viz., 6,319 on the books at the beginning of the year, and 14,052 admitted during the year. The following statement shows the different centres and the numbers supplied at each, viz. :—

| Centres. | Ante-Natal. | Nursing Mothers. | Infants. | Liverpool Child Welfare Association. | Totals. |
|----------------------|-------------|------------------|----------|--------------------------------------|---------|
| Netherfield Road ... | 356 | 1,243 | 910 | 351 | 2,860 |
| Earle Road ... | 114 | 756 | 590 | 376 | 1,836 |
| Park Road ... | 31 | 994 | 919 | 310 | 2,254 |
| Boaler Street ... | 89 | 617 | 407 | 207 | 1,320 |
| St. Anne Street ... | 104 | 952 | 439 | 248 | 1,743 |
| Rathbone Road ... | 31 | 395 | 132 | 65 | 623 |
| Mill Street ... | 106 | 340 | 288 | 80 | 814 |
| Agents ... | 63 | 619 | 629 | 1,291 | 2,602 |
| | 894 | 5,916 | 4,314 | 2,928 | 14,052 |

The total quantity of milk supplied during the year was 324,108½ gallons, and the bottles prepared reached a total of 1,620,736. The quantity of dried milk used was 16 tons 11½ cwts.

| | | | |
|--|-----|-------|--------|
| Total cases on Books January 1st, 1920 | ... | ... | 6,319 |
| „ admitted during 1920 | ... | ... | 14,052 |
| Total supplied during 1920 | ... | ... | 20,371 |
| Remaining on the books at the end of the year... | | | 6,502 |
| Quarterly Average—January, February, March | ... | 7,128 | |
| „ „ April, May, June | ... | 6,782 | |
| „ „ July, August, September | ... | 6,283 | |
| „ „ October, November, December | | 6,027 | |

Highest number being supplied with milk at one time was 7,646 during the week ending February 21st.

The number of attendances of infants at the Centres during the year for weighing and advice, etc., was 23,303.

The number of visits paid during the year to children in their own homes by the Inspectors attached to the Centres in order to see that the children were being properly fed and cared for was 5,834.

DRIED MILK.

The infants fed on dried milk during the year were 1,565, of whom 977 were admitted during the year.

The number remaining on the books at the end of the year was 641.

THE WORK OF THE FEMALE SANITARY STAFF.

During the year, the work of the Health Visitors has steadily increased in all directions.

The routine work comprises:—

Visiting under the Notification of Births Act.

House to house inspection.

Attendance at Clinics for Expectant Mothers and the home visiting of these cases.

At the Ante-Natal Clinics, sewing classes are held to enable and encourage the mothers to make suitable provision for their expected infants. Lecture demonstrations in Cookery, Laundry Work, Sewing and Knitting are given at the Post-Natal Clinics, and are well attended by the mothers.

Attendance at Clinics for children from birth to five years of age, visiting of these children, and instruction to mothers in their own homes.

Re-visits to Phthisis cases amongst women and children.

Visits to cases and home nursing of Measles, Influenza, Pneumonia, Whooping Cough and Infantile Diarrhœa.

Attendance at School Medical Inspections and following up in the homes cases of Physical defects found by the Medical Inspectors.

Attendance at Eye, Dental, Ringworm, Tonsils and Adenoids and Minor Ailments Clinics.

Visits to neglected and verminous school children and ensuring the cleansing of verminous children.

Visits to infectious school children (infectious skin diseases).

Care of cases referred from the Voluntary Organizations, *e.g.* :—

Child Welfare Association.

Police

Soldiers' and Sailors' Families Association.

Relieving Officers.

Liverpool Society for Prevention of Cruelty to Children.

In addition to the duties enumerated above, the Health Visitors have given valuable assistance to the Housing Department in investigating the conditions of those applying for dwellings, so that the most pressing cases should receive priority.

Good work has been done in co-operation with the Tuberculosis Department, by specially qualified Visitors, for discharged Soldiers and Sailors suffering from Tuberculosis, especially with reference to their housing, surroundings, and treatment.

The number of visits paid during the year to expectant mothers were as follows:—

First visits 3,713 and total visits 5,737.

NOTIFICATION OF BIRTHS ACT, 1907.

| | | | |
|---|-----|-----|--------|
| Number of Births notified during the year | ... | ... | 22,663 |
| Number of Births visited during the year | ... | ... | 22,208 |
| Percentage visited during the year | ... | ... | 97 |

The following figures give the attendances, condition, and feeding of children on admission to those Post-Natal Clinics, which are under the control of the Health Committee:—

INFANT CLINICS.

| | <u>1919.</u> | <u>1920.</u> |
|-----------------------------------|--------------|--------------|
| Admissions for year | 5,893 | 6,107 |
| Age on admission— | | |
| Under 1 month old | 1,411 | 1,487 |
| From 1 to 3 months old | 2,425 | 2,417 |
| From 3 to 6 months old | 789 | 937 |
| From 6 to 12 months old | 502 | 596 |
| Over 12 months old... | 766 | 670 |
| Condition of Health on Admission— | | |
| Good | 4,090 | 4,215 |
| Fair (under average) | 1,094 | 1,173 |
| Delicate | 709 | 719 |
| Method of Feeding on Admission— | | |
| Breast fed entirely | 3,312 | 3,582 |
| Partly breast fed | 609 | 763 |
| Artificially fed entirely | 1,972—2,581 | 1,762—2,525 |
| Artificial Method adopted— | | |
| Cow's milk | 289 | 336 |
| Prepared or sterilized milk | 196 | 122 |
| Dried milk | 937 | 1,068 |
| Condensed milk | 312 | 250 |
| Patent foods... | 158 | 146 |
| Ordinary foods | 689—2,581 | 603—2,525 |

*Treatment given on admission—

| | | |
|--|--------|--------|
| Advisory | 1,871 | 1,857 |
| Minor Medical | 3,362 | 4,073 |
| Referred to Medical Practitioners,
Hospitals, etc. | 660 | 177 |
| Total attendances for year... .. | 56,325 | 71,703 |
| Attendances under 1 year | 43,024 | 57,527 |
| Attendances from 1 to 3 years | 11,447 | 12,187 |
| Attendances from 3 to 5 years | 1,854 | 1,989 |
| Attendances of mothers at classes | 5,628 | 7,885 |

There are additional Clinics organised by Voluntary Agencies, which carry on very valuable work on the same lines.

DAY AND RESIDENT NURSERIES.

In Liverpool there are nine Day Nurseries, seven of which are under the control of the Corporation, with accommodation for 390 children. Children from the age of 3 weeks to 5 years are admitted to the Day Nurseries between the hours of 7 a.m. and 7 p.m.

A daily charge is made for each child.

At certain of the Nurseries, children may be boarded for short periods to tide over special difficulties in the homes, such as illness of the mother, etc.

These Institutions continue to fill a special need. They are much appreciated by the working-class mothers in times of sickness, or when, by reason of widowhood or incapacity of their husbands, compelled to go out to work in order to make provision for themselves and their families.

* The work of the Clinic is mainly preventive, only minor ailments being treated. Cases found to be suffering from any condition requiring further treatment are referred either to Private Practitioners, Hospitals or Dispensaries. In many cases the early diagnosis of ailments, with the necessary treatment, has given good results which could not otherwise have been obtained.

The Nurseries provide a training school for Nursery nurses and an excellent preliminary training for girls wishing to train later as Hospital nurses. Classes in the theory and practice of all branches of Domestic Science and Nursery management are held, and full instruction is given in infant and child care.

The children who attend are taught clean and orderly habits and their diet, play and rest are carefully supervised. The sphere of usefulness of the Nurseries has also been extended by associating them with the instruction of the mothers in the care of their children.

The Day Nurseries are situated as follows:—

| | Attendances. |
|---|--------------|
| 1.—264, Westminster Road | 8,033 |
| 2.—18, Gt. George Square | 7,535 |
| 3.—407, Edge Lane (day and resident) | 9,285 |
| 4.—19, Beaumont Street | 10,520 |
| 5.—141 and 143, Smithdown Lane (day and resident) ... | 9,798 |
| 6.—Banks Road, Garston | 5,136 |
| 7.—87, South Hill Road | 7,581 |
| 8.—63, Everton Road (since July) | 3,511 |
| 9.—61, Shaw Street | 7,240 |

INFECTIOUS DISEASE IN SCHOOLS.

The outbreak of Measles which commenced towards the end of last year, continued with severity during nearly the whole of the first quarter of the year 1920. From January to the middle of March, at various dates, the Infants' Departments in a number of schools were closed for fourteen days, and subsequently the Infants' Departments of all schools in the City were closed until the 1st April. A considerable diminution in the number of cases coming to the notice of the Medical Officer of Health then took place, the numbers falling to below 100 per month during August, September and October.

LIST OF SCHOOLS CLOSED DURING THE YEAR 1920 OWING TO THE
PREVALENCE OF MEASLES, etc.

| Date of Notice. | School. | Department. | Nature of Disease. | Period of Closure. |
|-----------------|-----------------------------|-------------|-----------------------------|------------------------------|
| 1920 | | | | |
| 29th Jan. | Anfield Road | Infants ... | Infectious Sickness. | 14 days. |
| 7th Feb. | Holy Trinity | " | Measles and Whooping Cough. | Until 23rd Feb. |
| 11th Feb. | Walton National C.E. School | " | Measles, etc. | Until 26th Feb. |
| 12th Feb. | Morrison C. School ... | " | " | Until 26th Feb. |
| 18th Feb. | Sefton Park C.E. School | " | " | Until 4th March |
| 24th Feb. | Dovedale Road C. School | " | " | Until 8th March |
| 27th Feb. | Duncombe Rd. C. School | " | " | Until 15th March |
| | Victoria C.E. School ... | " | " | " |
| | Birchfield Rd. C. School... | " | " | " |
| 28th Feb. | Penrhyn Street C. School | " | " | " |
| 3rd March | St. Cecilia's School ... | " | " | Until 17th March |
| 9th March | Heygreen Road C. School | " | " | Until 24th March |
| | Lawrence Road C. School | " | " | Until 24th March |
| 10th March | Knotty Ash Schools ... | " | " | Until 25th March |
| 11th March | St. Oswald's R.C. School | " | " | Until 31st March |
| | St. Anthony's R.C. School | " | " | " |
| | St. Anne's C.E. School ... | " | " | " |
| | St. Sylvester's School ... | " | " | " |
| 12th March | Our Lady's R.C. School | " | " | " |
| | Broadgreen Rd. C. School | " | " | " |
| 16th March | All Schools | " | " | Until after Easter Holidays. |
| 14th Dec. | Rice Lane Council School | " | " | After Xmas Holidays. |

PUBLIC ELEMENTARY SCHOOLS.

| | | 1919. | 1920. |
|---------------------------------|--------|-------|-------|
| Number of Visits to Schools | ... .. | 2,558 | 3,025 |
| " found incorrect | ... .. | 55 | 15 |
| " of Water-closets and Latrines | | | |
| found dirty or defective | ... .. | 18 | 72 |
| " of Notices issued for defects | ... .. | 17 | 20 |

NOTICES TO SCHOOL TEACHERS

The arrangements have been continued with the Education Committee that notice shall be sent to the Education Department and postcards to the Head Teachers of the various schools informing them when children from infected houses attend their schools; 10,408 cards were sent last year, as against 7,358 in the preceding year.

TUBERCULOSIS.

SANATORIA.

The following Institutions were used to accommodate cases of pulmonary and non-pulmonary tuberculosis during the year:—

SANATORIA:—Fazakerley, Parkhill, Delamere, Leasowe, The West Kirby Children's Convalescent Home, and Freshfield.

HOSPITALS:—Fazakerley, The Royal Infirmary, The Royal Southern Hospital, The David Lewis Northern Hospital, The Stanley Hospital, Liverpool, The Royal Liverpool Children's Hospital, The Royal Liverpool Country Hospital, Heswall, and the Chest Hospital, Liverpool.

A few cases were sent to Outside Sanatoria, such as:—Thingwall, Blencathra, Daneswood, Derby, Midhurst, Baschurch, Talgarth, etc.

The Fazakerley and Parkhill Sanatoria are equipped and administered by the Liverpool Hospitals Committee.

Details of their accommodation and staff are as follows:—

FAZAKERLEY Beds 290

Medical Superintendent ... Dr. C. Rundle.

Principal Resident Medical Officer.. Dr. W. Crane.

Consulting Surgeon... ... Dr. J. T. Morrison.

Asst. Resident Medical Officers ... Dr. A. E. Connolly.

Dr. J. O. Murray.

Dr. B. G. Elliott.

Matron, Sisters and Nursing Staff 57

| | | | | | |
|--------------------------------------|-----|-----|-----------------------|-----|----------|
| PARKHILL | ... | ... | ... | ... | Beds 225 |
| Medical Superintendent | ... | ... | Dr. H. R. MacIntyre. | | |
| Senr. Asst. Resident Medical Officer | | | Dr. J. H. Crane. | | |
| Tem. Asst. Resident Medical Officers | | | Dr. W. H. Brown. | | |
| | | | Dr. Wyndham Williams. | | |
| Matron, Sisters and Nursing Staff | ... | ... | | | 35 |

At the Fazakerley Sanatorium both pulmonary and non-pulmonary cases, adults and children are treated. The Parkhill Sanatorium accommodates pulmonary cases only, both adults and children. The actual distribution of beds between pulmonary and non-pulmonary cases is determined largely by the exigencies of the list of patients waiting for admission for treatment.

Surgical apparatus is provided where necessary in cases of non-pulmonary tuberculosis. The statistical report relative to the admissions and to the discharges from Institutions is given in Table "A" and Table "B." The sanatorium waiting list rose again towards the end of the year. Statistical details are given in Table "C."

THE DELAMERE TRAINING COLONY.

The Delamere Training Colony for ex-service patients was opened on September 20th, 1920. There are 22 beds available, and it is hoped shortly to extend the accommodation to 60 beds. These beds are shared by Liverpool, Lancashire and Cheshire. At the end of the year there were 6 Liverpool patients in residence undergoing training. Patients are being trained in watch and clock repairing, horticulture, market gardening, poultry farming, and rural industries, covering joinery, etc. It is unfortunate that there is some difficulty in persuading ex-service patients to undergo training under the ideal conditions exhibited in this training colony.

LEASOWE SANATORIUM.

This Institution affords accommodation for children suffering from non-pulmonary tuberculosis, and is maintained by the Liverpool Infant Welfare Association. Approximately 140 beds are at the disposal of Liverpool cases.

The state of health in January, 1921, of the Liverpool cases discharged during 1919 is given below:—

LIVERPOOL CASES DISCHARGED DURING 1919.

| Lesion. | Total Discharged. | Non-Tuberculous. | Tuberculous. | CONDITION ON DISCHARGE. | | | | | | Average Duration of stay in days. | Percentage of cases discharged—Disease Arrested. |
|-------------------------------|-------------------|------------------|--------------|-------------------------|-----------|---------------------|--------------------------|-------------|-------|-----------------------------------|--|
| | | | | Disease arrested. | Improved. | Removed by Parents. | Transferred. (Phthisis.) | Unimproved. | Died. | | |
| Tuberculosis of the Spine ... | 30 | 6 | 24 | 13 | — | 1 | 2 | 4 | 4 | 591 | 56.5 |
| Tuberculosis of the Hip ... | 19 | 5 | 14 | 12 | — | 1 | 1 | — | — | 597 | 92.0 |
| Tuberculosis of the Knee ... | 7 | — | 7 | 6 | — | — | — | 1 | — | 687 | 85.7 |
| Tuberculous Osteitis ... | 21 | — | 21 | 14 | — | 4 | 2 | — | 1 | 324 | 82.0 |
| Tuberculous Adenitis ... | 13 | — | 13 | 12 | — | — | 1 | — | — | 227 | 92.0 |
| Tuberculous Peritonitis ... | 31 | — | 31 | 27 | — | — | 2 | — | 2 | 237 | 87.0 |
| TOTAL ... | 121 | 11 | 110 | 84 | — | 6 | 8 | 5 | 7 | — | — |

STATE OF HEALTH IN JANUARY 1921 OF ABOVE CASES

| | | | | | | | | | |
|-------------------------|---|---|---|----|---|---|---|---|---|
| Fit ... | — | — | — | 75 | — | — | 4 | — | — |
| Recurred ... | — | — | — | 4 | — | — | — | — | — |
| Disease progressing ... | — | — | — | — | — | 4 | 2 | 1 | — |
| Re-admitted ... | — | — | — | 1 | — | 2 | 2 | — | — |
| Died ... | — | — | — | — | — | — | — | 4 | — |
| Not traced ... | — | — | — | *4 | — | — | — | — | — |

*Parents removed from Liverpool.

DISPENSARIES.

CENTRAL TUBERCULOSIS INSTITUTE.

Chief Asst. Tuberculosis Officer ... Dr. B. T. J. Glover.

Assistant Tuberculosis Officer ... Dr. W. H. Butler.

Three Nurses and two Clerks.

SOUTH TUBERCULOSIS INSTITUTE.

Assistant Tuberculosis Officer ... Dr. J. P. Clarke.

Two Nurses and two Clerks.

NORTH TUBERCULOSIS INSTITUTE.

Assistant Tuberculosis Officer ... Dr. R. Jackson.

Two Nurses and two Clerks.

ADMINISTRATIVE OFFICE (Public Health Department).

Medical Officer of Health and Chief

Tuberculosis Officer ... Dr. E. W. Hope.

Six Clerks.

During the year the work of the Institutes consisted of the examination of new cases, the re-examination of old cases, treatment, and arrangements relative to after-care.

The statistical summary is given in Table "D," Table "E," and Table "F." Every new case notified to the Medical Officer of Health is referred to one of the Tuberculosis Officers for examination. Patients themselves are increasingly alive to the benefit of help and advice which the medical and nursing staff can give and avail themselves of these advantages with greater frequency. The Dispensary Tuberculosis Officers are primarily responsible for the diagnosis. They must be able to diagnose early cases of tuberculosis and reject cases which are non-tuberculous. In the Liverpool Scheme the chief aids to diagnosis in doubtful cases are:—

- (a) Examination by X-ray.
- (b) Continued observation whilst following an ordinary occupation.
- (c) The repeated examination of sputum.
- (d) A period of observation in hospital if necessary.

These methods appear to be successful in practice because whereas few cases considered to be non-tuberculous are found at a later date to be undoubtedly tuberculous, there are also but few cases which are returned by the Medical Superintendents of the Sanatoria as non-tuberculous after a period of stay in a sanatorium.

DOMICILIARY TREATMENT.

This form of treatment is only arranged by the Tuberculosis Officer in such cases as have been examined by him, and in which it is the most appropriate form of treatment. Co-operation between the Medical Practitioner and the Tuberculosis Officer is secured in every case by means of a quarterly domiciliary report from the Practitioner. These reports are now being completed and returned much more thoroughly than was formerly the case. At the end of the year 1,780 cases (Table "G") remained under domiciliary treatment, a number which should be materially reduced when further sanatorium accommodation is available.

NURSING AND EXTRA NOURISHMENT.

The domiciliary nursing of both pulmonary and non-pulmonary cases is carried out by the Liverpool Queen Victoria District Nursing Association, with whom the Liverpool Hospitals Committee have an agreement and to whom they make a grant in aid. During the year 188 pulmonary cases and 153 non-pulmonary cases were nursed in their homes, and to these cases 13,362 visits were paid. The value of this work cannot be overestimated.

Extra nourishment was granted to many patients who needed it as a part of their treatment and were unable to afford to purchase it for themselves. The staple grant was milk and (or) eggs and (or) a meat juice preparation. At the end of the year 511 patients were in receipt of extra nourishment.

DENTAL TREATMENT.

By arrangement with the Ministry of Pensions the dental treatment required in the case of ex-service tuberculous cases is given, the patients being referred to local Dental Practitioners. The benefits of dental treatment have not yet been extended to the civilian cases of tuberculosis. There are undoubtedly many civilian cases whose progress is impeded by the want of dental treatment.

AFTER-CARE.

The work of after-care consists in:—

- (a) The periodic examinations by the Tuberculosis Officer of cases discharged from sanatoria.
- (b) Visits paid to patients by the Tuberculosis Dispensary Nurses.
- (c) Visits paid to patients by the male and female sanitary Inspectors of the Health Committee.
- (d) Visits paid to patients by the Nurses of the Queen Victoria District Nursing Association.

During the year the Tuberculosis Nurses made 5,874 home visits, of which 1,588 were to ex-service cases. The male and female Sanitary Inspectors made 12,617 home visits, of which 1,552 were to ex-service cases. At the end of the year there were 933 ex-service cases whose names were on the home visiting list. The work of the Queen Victoria District Nursing Association has been detailed in a previous paragraph. The visits paid by Nurses and Sanitary Inspectors are all the subject of report to the Medical Officer of Health. These visits in effect materially diminish the carelessness which leads to the spread of infection, are constant reminders to patients to keep themselves under proper medical supervision and enable the Tuberculosis Officer to be informed of any special circumstances requiring his attention.

CO-OPERATION BETWEEN DEPARTMENTS AND OUTSIDE AGENCIES.

The Medical Officer of Health is the Chief Medical Officer to the various sections which combine to form the Health Department. This arrangement makes the closest co-operation between the Tuberculosis, School Medical, Infant Welfare, and Port Sanitary Sections possible. The School Medical Department is kept fully informed by the Tuberculosis Officer as to the nature of any ailment diagnosed in children of school age. All tuberculous school children discovered by the School Medical Officers are referred to the Tuberculosis Officer for an opinion. The Infant Welfare Section similarly is closely related to the Tuberculosis Section. Of outside agencies the Infant Welfare Association and the local War Pensions Committee are the two most important. Through the former the Tuberculosis Officer is in touch with every tuberculous

child under treatment in any of the general hospitals or in the Leasowe Sanatorium, the West Kirby Convalescent Home, and the Royal Liverpool Country Hospital, Heswall. The Infant Welfare Association is in close touch with a large number of tuberculous children attending the general hospital out-patient departments and attending their own clinic. These cases are the subject of reference to the Tuberculosis Officer when additional assistance is required. The co-operative work of the Tuberculosis Department and the Infant Welfare Association deals with the treatment of the tuberculous child in a very satisfactory manner.

The same relationship exists between the local War Pensions Committee and the Tuberculosis Officer via the Liverpool Insurance Committee in the case of tuberculous ex-service cases, and the references from one to the other have during the year been exceedingly numerous.

The negotiations between the Corporation and the Select Vestry of the Parish of Liverpool for the transfer of the Highfield Poor Law Infirmary for use as a Corporation Sanatorium were completed early in 1921, and the Institution was taken over on 8th May, 1921. The establishment will provide accommodation for 320 cases of pulmonary tuberculosis as soon as the equipment is completed. This addition to the existing accommodation will undoubtedly be of great value.

TABLE C.

THE NUMBER OF PATIENTS WAITING TO ENTER A SANATORIUM AT THE
END OF EACH QUARTER FROM 1914 TO 1920.

| | 1914. | 1915. | 1916. | 1917. | 1918. | 1919. | 1920. |
|-------------------|-------|-------|-------|-------|-------|-------|-------|
| March 31st | — | 243 | 330 | 361 | 302 | †441 | 77 |
| June 30th | — | 291 | 353 | 442 | 425 | 328 | 131 |
| September 30th | *198 | 389 | 398 | 422 | 430 | 140 | 173 |
| December 31st ... | 221 | 335 | 389 | 265 | 549 | 163 | 190 |

* The surrender of the accommodation at Fazakerley to the Military Authority.

† The acquisition of Fazakerley Sanatorium from the Military Authority.

TABLE D.

NEW CASES EXAMINED BY TUBERCULOSIS OFFICERS.

| | | Insured
Persons | Dependants | Non-insured | TOTALS |
|-------------------------------|--------------|--------------------|------------|-------------|--------|
| Pulmonary
Tuberculosis | ... { Male | 590 | 112 | 82 | 784 |
| | ... { Female | 181 | 297 | 81 | 559 |
| Non-pulmonary
Tuberculosis | ... { Male | 19 | 64 | 19 | 102 |
| | ... { Female | 10 | 58 | 18 | 86 |
| Non-tuberculous | ... { Male | 495 | 108 | 62 | 665 |
| | ... { Female | 81 | 157 | 61 | 299 |
| GRAND TOTAL | | | | | 2,495 |

A total of 7,087 medical examinations of new and old cases was made.

TABLE E.

DISPENSARY TREATMENT.

| | | | | Number
under
treatment,
Dec 31st,
1919 | New
cases
in 1920 | Treatment
ceased | Remaining
under
treatment,
Dec 31st,
1920. |
|--------------------|-----|-----|--------|--|-------------------------|---------------------|--|
| Insured Persons... | ... | ... | Male | 36 | 9 | 33 | 12 |
| | | | Female | 24 | 8 | 24 | 8 |
| Dependants | ... | ... | Male | 18 | 10 | 21 | 7 |
| | | | Female | 59 | 30 | 62 | 27 |
| Non-insured | ... | ... | Male | 42 | 40 | 56 | 26 |
| | | | Female | 53 | 55 | 69 | 39 |

TABLE F.

ANALYSIS OF RESULTS IN CASES WHERE DISPENSARY TREATMENT CEASED.

| | | | Disease
Quiescent | Improved | Not
Improved | Died | Left the
district
or other
treatment
afforded |
|-----------------|-----|--------|----------------------|----------|-----------------|------|---|
| Insured persons | ... | Male | 7 | 3 | — | 2 | 21 |
| | | Female | 5 | 3 | — | 1 | 15 |
| Dependants | ... | Male | 5 | 4 | — | 1 | 11 |
| | | Female | 25 | 8 | — | 1 | 28 |
| Non-insured | ... | Male | 23 | 6 | — | 3 | 24 |
| | | Female | 17 | 8 | — | 6 | 38 |

**PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1912, and REGULATIONS
(No. 2), 1918.**

Summary of Notifications during the period from the 4th January, 1920, to 1st January, 1921:—

| Age-periods. | Notifications on Form A. | | | | | | | | | | | | Total
Notifica-
tions on
Form A. |
|----------------|----------------------------------|--------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-------------------------|---|---|
| | Number of Primary Notifications. | | | | | | | | | | | | |
| | 0
to
1 | 1
to
5 | 5
to
10 | 10
to
15 | 15
to
20 | 20
to
25 | 25
to
35 | 35
to
45 | 45
to
55 | 55
to
65 | 65
and up-
wards. | Total
Primary
Notifica-
tions. | |
| Pulmonary— | | | | | | | | | | | | | |
| Males | 1 | 21 | 82 | 76 | 86 | 101 | 210 | 231 | 176 | 92 | 31 | 1,107 | 1,202 |
| Females | 1 | 29 | 66 | 90 | 86 | 111 | 234 | 157 | 99 | 39 | 15 | 927 | 1,001 |
| Non-Pulmonary— | | | | | | | | | | | | | |
| Males | 8 | 35 | 67 | 44 | 29 | 14 | 9 | 8 | 5 | 3 | 2 | 224 | 248 |
| Females | 10 | 34 | 43 | 48 | 38 | 22 | 13 | 7 | 4 | 2 | 2 | 223 | 247 |

| Age-periods. | Notifications on Form B. | | | | | Number of
Notifications on
Form C. | |
|----------------|----------------------------------|---------|----------|---|---|--|------------|
| | Number of Primary Notifications. | | | | Total
Notifica-
tions on
Form B. | Poor Law
Institutions. | Sanatoria. |
| | Under
5 | 5 to 10 | 10 to 15 | Total
Primary
Notifica-
tions. | | | |
| Pulmonary— | | | | | | | |
| Males | — | 16 | 5 | 21 | 23 | 146 | 155 |
| Females | — | 5 | 8 | 13 | 15 | 43 | 55 |
| Non-Pulmonary— | | | | | | | |
| Males | — | 12 | 12 | 24 | 24 | 9 | 7 |
| Females | — | 6 | 10 | 16 | 16 | 2 | 5 |

Form "A" is used by Medical Practitioners on first becoming aware that a patient is suffering from tuberculosis, unless he has reasonable grounds for believing that the case has already been notified.

Form "B" is used by School Medical Officers to make a weekly return to the Medical Officer of Health of all cases of tuberculosis coming under their notice in carrying out the duties of medical inspection of children in Public Elementary Schools.

Form "C" is for the use of the Medical Officers of Poor Law Institutions and Sanatoria to make a weekly return of cases admitted to their Institutions, and applies only to cases which have been previously notified on Form "A."

The number of deaths from Phthisis during the year was 1,102. The number of deaths during each of the preceding ten years, 1910-1919, has been as follows:—1,072, 1,313, 1,189, 1,183, 1,132, 1,299, 1,254, 1,357, 1,400, and 1,089.

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

| DISTRICTS. | | | | QUARTERS. | | | | | | | | YEAR 1920. | | |
|-----------------------|-----|-----|-----|-----------|-----|-------|-----|-------|-----|---------------|-----------|------------|-----|--------|
| | | | | March. | | June. | | Sept. | | Dec. | | M. | F. | Total. |
| | | | | M. | F. | M. | F. | M. | F. | M. | F. | | | |
| Scotland ... | ... | ... | ... | 13 | 10 | 13 | 14 | 7 | 9 | 16 | 12 | 49 | 45 | 94 |
| Exchange ... | ... | ... | ... | 17 | 6 | 19 | 10 | 19 | 8 | 16 | 9 | 71 | 33 | 104 |
| Abercromby ... | ... | ... | ... | 14 | 5 | 20 | 9 | 9 | 9 | 19 | 7 | 62 | 30 | 92 |
| Everton ... | ... | ... | ... | 30 | 23 | 26 | 19 | 21 | 22 | 24 | 19 | 101 | 88 | 184 |
| Kirkdale ... | ... | ... | ... | 14 | 16 | 18 | 14 | 21 | 15 | 19 | 10 | 72 | 55 | 127 |
| West Derby (West) ... | ... | ... | ... | 17 | 9 | 16 | 14 | 15 | 14 | 16 | 14 | 64 | 51 | 115 |
| Toxteth ... | ... | ... | ... | 22 | 13 | 22 | 14 | 18 | 9 | 28 | 14 | 90 | 50 | 140 |
| Walton ... | ... | ... | ... | 13 | 5 | 6 | 5 | 8 | 8 | 12 | 13 | 39 | 31 | 70 |
| West Derby (East) ... | ... | ... | ... | 1 | 14 | 10 | 11 | 13 | 6 | 15 | 5 | 39 | 36 | 75 |
| Wavertree ... | ... | ... | ... | 4 | 9 | 8 | 4 | 5 | 6 | 8 | 5 | 25 | 24 | 49 |
| Toxteth (East) ... | ... | ... | ... | 4 | 1 | ... | 2 | 1 | 1 | 2 | 4 | 7 | 8 | 15 |
| Garston ... | ... | ... | ... | 5 | 3 | 4 | 3 | 3 | 1 | 5 | 2 | 17 | 9 | 26 |
| Fazakerley ... | ... | ... | ... | 3 | ... | 2 | 1 | ... | ... | 1 | ... | 6 | 1 | 7 |
| Woolton ... | ... | ... | ... | ... | 1 | 2 | ... | 1 | ... | ... | ... | 3 | 1 | 4 |
| No Address ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| City ... | ... | ... | ... | 157 | 115 | 166 | 120 | 141 | 108 | 181 | 114 | 645 | 457 | 1,102 |
| AGES AT DEATH. | | | | | | | | | | | | | | |
| Under 1 year. | 1— | 2— | 5— | 10— | 15— | 20— | 30— | 40— | 50— | 60 & upwards. | All Ages. | | | |
| 2 | 6 | 21 | 6 | 29 | 99 | 206 | 250 | 233 | 156 | 94 | 1,102 | | | |

DEATHS FROM OTHER TUBERCULAR DISEASES.

Viz.:—Tubercular Peritonitis, Tubercular Meningitis, and other forms of Tuberculosis.

| DISTRICTS. | | | | | Tubercular
Peritonitis. | | Tubercular
Meningitis. | | Other forms of
Tuberculosis. | | YEAR 1920. | | |
|-------------------|-----|-----|-----|-----|----------------------------|-----|---------------------------|----|---------------------------------|-----|------------|-----|-----|
| | | | | | | | | | | | M. | F. | T. |
| Scotland | ... | ... | ... | ... | 3 | 4 | 4 | 4 | 4 | 5 | 11 | 13 | 24 |
| Exchange | ... | ... | ... | ... | 2 | ... | 7 | 4 | 3 | 1 | 12 | 5 | 17 |
| Abercromby... | ... | ... | ... | ... | 3 | 1 | 1 | 3 | 4 | ... | 8 | 4 | 12 |
| Everton | ... | ... | ... | ... | 8 | 8 | 7 | 8 | 12 | 7 | 27 | 23 | 50 |
| Kirkdale | ... | ... | ... | ... | 2 | 9 | 2 | 6 | 4 | 1 | 8 | 16 | 24 |
| West Derby (West) | ... | ... | ... | ... | 5 | 5 | 6 | 7 | 7 | 6 | 18 | 18 | 36 |
| Toxteth | ... | ... | ... | ... | 3 | 10 | 4 | 4 | 3 | 5 | 10 | 19 | 29 |
| Walton | ... | ... | ... | ... | 4 | 2 | 4 | 4 | 2 | 1 | 10 | 7 | 17 |
| West Derby (East) | ... | ... | ... | ... | 1 | 1 | 4 | 3 | ... | 4 | 5 | 8 | 13 |
| Wavertree | ... | ... | ... | ... | 1 | 2 | 1 | 4 | 1 | 2 | 3 | 8 | 11 |
| Toxteth (East) | ... | ... | ... | ... | ... | 1 | 1 | 3 | ... | ... | 1 | 4 | 5 |
| Garston | ... | ... | ... | ... | 2 | ... | 2 | 3 | ... | 2 | 4 | 5 | 9 |
| Fazakerley... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | 1 |
| Woolton | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | 1 | 1 | 2 |
| City | ... | ... | ... | ... | 34 | 43 | 44 | 55 | 40 | 34 | 118 | 132 | 250 |

| AGES AT DEATH. | | | | | | | | | | | |
|------------------|----|----|----|-----|-----|-----|-----|-----|-----|--------------------|--------------|
| Under
1 year. | 1— | 2— | 5— | 10— | 15— | 20— | 30— | 40— | 50— | 60 & up-
wards. | All
Ages. |
| 31 | 21 | 51 | 36 | 21 | 29 | 22 | 11 | 16 | 5 | 7 | 250 |

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

THE PREVENTION OF VENEREAL DISEASES.

Those who have devoted attention to the preservation of the public health know that it is advantageous to bring known carriers of infectious disease under control, and to prevent them from spreading those diseases.

The application of this principle has been followed by a reduction to vanishing point of many of the infectious diseases formerly rife in Liverpool, whilst the remainder have been diminished to less than one half. The actual saving of life, the diminution of suffering, and the lessening of cost which have resulted can be appreciated by reference to the appropriate sections of this Report.

The provision and application of the measures necessary to effect this control have not been simple; on the contrary, many and great difficulties had to be overcome in the process.

For reasons presently to be alluded to, Venereal Diseases remain outside these beneficent measures of control,* notwithstanding that these diseases are contagious, infectious, communicable, and dangerous to the public health, far beyond the sense in which Scarlet Fever and Smallpox are, since they are transmissible to offspring, with equally damaging virulence. Venereal diseases indeed are recognised by the medical profession as one of the leading causes, if not (as Sir William Osler considered) the leading cause of death. They are a prolific cause of sterility, and of abortion, of congenital mal-formation and still-birth (*a*), lunacy (*b*), and blindness (*c*). These admitted facts explain the anxiety in regard to them which is felt by those interested in promoting public health, and justify a survey of the steps taken to meet the evil, and of the measures of success which have attended them.

* Briefly, they include the provisions of the Public Health Acts and numerous Local Acts, designed to meet the exceptional necessities of Liverpool.

a Approximately 15% of still-born infants examined by the City Bacteriologist were found to be infected with syphilis.

b Upwards of 15% of admissions to asylums in U.S.A. were syphilitic. Probably the same holds in this country. (See International Journal of Public Health, Vol. II, published by the Red Cross Society, Geneva).

c Dr. Bishop Harman, in an examination of a large number of London school children in the London County Council Schools for the Blind, found 36% to be blind as the result of Ophthalmia Neonatorum, and 17% as the result of congenital syphilis.

Without going into unnecessary detail, it may be stated that the Scheme at present in vogue in Liverpool had its foundation in the Report of the Royal Commission on Venereal Diseases, which, after some years of deliberation, advised the provision of free treatment for sufferers who were willing to accept it, and facilities for accuracy of diagnosis in all cases; the suppression of quackery was also advised.

These recommendations have been accepted by the Ministry of Health and measures have been in active operation since 1917.

The only step in the Scheme likely to prove effective is that relating to treatment. Unfortunately, however, this is fettered by limitations to such as choose to avail themselves of it, and for such periods as the recipients think appropriate; it may be discontinued at will, whatever the degree of infectiousness, or whatever the occupation of the infected person may be. The narrowness of the limitation of usefulness will at once be realised by applying the same principle in the case of smallpox.

It is clear that in order that full benefit may be obtained from the free treatment which is provided, the patient should in the public interest continue treatment until he is free from infection, and in his own interests until he is cured.

It is noteworthy that the reasons assigned for objecting to legislative control of Venereal Disease are precisely those which were raised in bygone years to the legislative control of ordinary infections, Scarlet Fever, Smallpox, etc.

In advising appropriate educational propaganda, the Royal Commission remark that in this propaganda "a high standard of efficiency and tact is indispensable, and the guidance of medical practitioners must be enlisted." Indiscriminate addresses to young persons of both sexes, given by persons unfamiliar with the subject, whose sole qualification is their zeal, will do more harm than good. Happily, large sections of the youthful community are removed, not only by their youth and the social protection afforded them, but also by moral and religious upbringing, from the degrading association with these Diseases, and there are many who think that haphazard lectures, leading to familiarity with prostitution and its concomitants are unnecessary and undesirable. High moral instruction should obviate the necessity for any such procedure.

The teaching of sex physiology and sex anatomy in the schools has much to commend it, but this is widely different from the unedifying proposals to associate that teaching with questions of Venereal Disease. This procedure cannot possibly affect the *suppression* of the Disease and the Royal Commission have specifically advised against it. The production of sex plays and venereal disease problem cinema shows is also of very doubtful value.*

The fact is that the phase now reached in the prevention of Venereal Disease is no more advanced than were the preventive measures against ordinary communicable diseases 40 years ago.

The City Council has, through the subsidiary committees directly concerned, given prolonged and patient attention to the evils resulting from Venereal Diseases, and the methods most calculated to lessen them. These bodies are conversant with the methods which have resulted in the suppression of other forms of disease, and realise the benefits accruing from the beneficent influence exercised by Parliamentary authority. A Sub-Committee specially appointed for the purpose has closely studied the situation in regard to Venereal Diseases during the last two years, and it came to the conclusion that it would be wise to submit for the consideration of Parliament a series of proposals† to apply to Venereal Diseases, so far as they consistently can be applied, the principles of prevention which have proved effective in safeguarding alike the interests of the sufferer, and the interests of the public, in all other forms of infection. These views, based on experiences of the Public Health Acts, and other Acts of Parliament dealing with health, after deliberate consideration, subsequently received the unanimous confirmation of the Health Committee of the Corporation, and, at a later date, the unanimous approval of the Parliamentary Committee. The proposed clauses have also received support from bodies whose views are not less entitled to a respectful consideration. Among them may be mentioned the members of the Liverpool Medical Institution, who, at a meeting

* Mr. Goodwin, Chairman of the Cinematograph Exhibitors' Association, at their Annual Meeting at the Hotel Cecil, said: "The venereal diseases or sex problem play which the educationalist and doctor thought it desirable to show, was, to the lower classes, simply a 'smutty' story, and was very popular. Exclusion of children under 16 years of age meant a 'full house,' and immediate profit, of which the exhibitor thought first" (*The Times*, 26th February, 1921).

† Measures closely in line with these proposals have already been adopted with success in some of the British Dominions, and also in the United States of America.

specially convened for the purpose of considering the subject, unanimously approved the proposals; no expression of dissent has been received from any medical man in the City. The attitude of the women doctors calls especially for attention. Most, if not all, of them have had a wide experience of the ravages of the Diseases amongst women and children attending clinics or voluntary organisations, and without exception the women doctors are favourable to the proposed clauses.

The Association of Port Sanitary Authorities have also affirmed the principles, although the details of the suggested clauses of the Bill have not been submitted for their consideration.

A large amount of opinion of various religious denominations, also recognises that if legislative measures are necessary to control the relatively minor impulse—say to dishonesty—they are not less necessary to restrain the overwhelming impulse—the first instinct—which ensures the perpetuation of the human race.

There are saintly people, however, not familiar with the Public Health aspects of the subject who are of a contrary opinion and insist that departures from the moral life are justly punished by the infliction of the Disease upon others, innocent or guilty, and that the terrors of Venereal Disease are incentives to virtue. No sanitarian would desire any measures which would lessen the moral life; no suggestion ever has been made, nor probably ever will be made, to discard high moral teaching, or to impair influences of morality, but it cannot be accepted that either virtue or religion need an ally so filthy and ignoble as Venereal Disease.

It is noteworthy that in regard to the vice of intemperance the same school of thought adopts a wholly different attitude, and supports with fervour constructive measures for the *prevention* of intemperance (even to the extent of restricting the liberty of the inebriate), as well as for the relief of its consequences.

Moral teaching should take the first place in every educational system, but it must be recognised that a duty to prevent the ravages of disease is the foremost of the obligations of the Sanitary Authority. Interference with the control of disease, whether under the guise of religious

teaching or of spurious propaganda can but cripple and fetter the fulfilment of this duty and add to and prolong the sum of avoidable human misery.

The fact must not be lost sight of that, apart from penal provisions, legislation is a valuable instrument of guidance and instruction—a moral deterrent to the ignorant and a restriction upon the evilly disposed; the immense moral value is too obvious to need comment.

The aims of the provisions† which it was desired to submit to the consideration of Parliament were briefly:—

(a) To make it incumbent upon every person who knows or who has reasonable grounds for believing that he is infected with Venereal Disease (1) to consult a medical practitioner and (2) to conform with the requirements of the doctor whom he consults.

To make it the duty of parents or persons in charge of feeble minded infected persons or of infected persons under 16 years of age to see that they are placed under treatment.

(b) To enable the Corporation to provide* free treatment and suitable hospital accommodation to which patients may be removed who are under treatment or detention in any public institution, and are suffering from Venereal Disease in a communicable form.

Persons of both sexes, but more especially prostitutes under treatment for Venereal Diseases in Poor Law or other Institutions frequently leave those Institutions at Race times or other events attracting large numbers of people, in order to temporarily pursue their disease-carrying vocation, and return again for further temporary treatment when the aggravation of their own sufferings makes this course imperative. Sympathy and the public interests alike demand some control over these unfortunates.

(c) To facilitate continuity of treatment until the patients are free from infection.

(d) To provide that the knowing wilful and deliberate committal by any man or woman, with the full knowledge that they are

* This is already provided.

† See Appendix for Draft of Clauses proposed for consideration.

diseased, of any act calculated to infect another person would be recognised as a penal offence.*

It was felt that the sanitary necessities of Liverpool are so great as to justify special application to Parliament to meet them; the Port is visited by seamen of every flag and from every Port throughout the World, and it is recognised that the courage which faces the perils and privations of maritime life is often reflected in recklessness where danger from Venereal Disease is concerned, and where the lure of the prostitute—a recognised reservoir of infection—offers exceptional facility for the interchange of these Diseases.

The Merchant Shipping Act of 1906 which provides that the expense incurred in medical treatment of the sick sailor, shall be defrayed by the owners of the ship still retains the proviso that a seaman suffering from Venereal Disease shall be excluded from such benefits.

An opportunity to ask for Parliamentary consideration of the whole subject was afforded by the Liverpool Bill, which was already in preparation for submission to Parliament. The powers dealing with this matter were however omitted from the Bill before its introduction in Parliament.

It may be pointed out that other places besides Liverpool are taking special measures to meet their special difficulties in regard to Venereal Diseases. Portsmouth for example has taken a definite step with a view to meet the necessities of a large military and naval centre.† Manchester also is moving in a direction calculated to meet its needs.

* The infection of very young girls by diseased men appears to originate in the superstition that a sufferer would be relieved of his disease by passing it on to another person.

† The following extract from Report of Evidence taken by the National Birth-Rate Commission, instituted with official recognition by the National Council of Public Morals indicates the view of that Commission upon the Portsmouth procedure :

“ Having regard, however, to the seriousness of the present position, and to the strong possibility that self-disinfection, where efficiently carried out, would lead to the prevention of disease in a certain number of cases in which, in the absence of prompt disinfection, such disease would develop, the Committee consider that no difficulty should be placed in the way of either :—

(1) The spread of knowledge by such means as will be indicated later as to the use and value of disinfectants, or

(2) The obtaining by individuals of such disinfectants from chemists or other sources which may yet be recommended.”

But it is obvious that the authorities of towns under social conditions wholly different from those of Liverpool will neither appreciate nor concern themselves, with the necessities of Liverpool. A health resort for example, with no workshops, no hospitals, no foreign nor seafaring population, no prostitutes, no gaol, no workhouse nor Poor Law institution, is on a different footing altogether, and cannot be expected to share a self-imposed burden, nor to interfere with the problems of another district with which it has no concern whatever. Bodies so circumstanced would no doubt attach importance to addresses and cinema-shows should they deem it necessary to broach the subject at all. The same observation, *mutatis mutandis*, would apply say to the Factory Acts, which, though of general application, have none whatever in some localities and highly important applications in others. Contiguous areas affected by the same problems should, if possible, combine to meet them. Adjacent areas, however, in which the problems are wholly different are in a relatively different category. There is good reason to think that Birkenhead or Bootle, for example, would be willing to co-operate with Liverpool in regard to the repression of Venereal Disease, but there is not the same reason for any active co-operation say on the part of Bebington or Wallasey. The closeness of the co-operation in regard to Venereal Diseases between the Port of New York and the Port of Liverpool is noteworthy as showing a community of interests between two seaports, distant geographically but brought close together by constant daily communication.

The International aspect of sanitation to which the Medical Officer has so frequently called attention derives further emphasis from these incidents, and there is no doubt that a more direct guidance in these matters by the Ministry of Health and by Parliament will be highly beneficial.

It is only fair to mention that the system of clinics now in vogue in Liverpool is admittedly as good as any in the kingdom, and far more advanced than most.

Notwithstanding the time and attention given to the subject by those in authority and the heavy cost to the ratepayers, much of the value is lost, as will be readily appreciated from the circumstance that 60 per cent. of the patients fail to continue treatment until they are free from infection, a position which no one can regard as satisfactory.

One of the voluntary associations formed with a view to combat the Disease has been made acquainted with the international aspects of the question which the Medical Officer has so frequently emphasised, but however good a voluntary, but irresponsible, association may be, it has neither the weight, the means of acquiring information, nor the influence attaching either to a Government Department or a local authority having statutory powers.

It is thought that Liverpool, both by reason of its geographical situation and the complete manner in which all existing statutory powers in regard to the prevention and treatment of these Diseases have in the past been operated in the City, is perhaps the most suitable place in which further powers of an experimental character should be put in force.

Some years ago the Local Government Board issued Regulations under which local authorities could provide facilities for free treatment, and in 1917 the Liverpool City Council inaugurated a scheme which linked up all the available facilities of the several general and special hospitals of the City.

At the same time an Act of Parliament entitled the "Venereal Diseases Act, 1917," was brought into force in the area. This gave the local authority power to suppress quackery as far as it affected venereal diseases.

The clinics which were established were particularly serviceable, and were largely attended by patients. Patients attending the general out-patient department of the hospitals, and who were suffering from Venereal Diseases, were directed to the department dealing with their special ailment, and particular care was taken that such patients should not be singled out or made conspicuous.

Some of the clinics were so well attended that necessary extensions, both structural and as regards the available staff, were carried out.

Up to the present these clinics have proved a success, and large numbers of sufferers, especially seamen, have taken full advantage of the free treatment.

Clinics are now in operation at the Royal Infirmary, Royal Southern Hospital, David Lewis Northern Hospital, Cancer and Skin Hospital, and Stanley Hospital.

The correct diagnosis is very important, and arrangements have been made for the City Bacteriologist to examine all material sent to him from clinics or private practitioners, and to carry out any Wasserman tests which may be required.

The following is a statement of the work carried out under this heading during the year 1920:—

| | No. of Specimens. |
|---|-------------------|
| Detection of Spirochaetes | 46 |
| „ Gonococci | 453 |
| Wasserman re-action for Syphilis | 5,081 |
| Still-births examined | 411 |
| Ophthalmia cases | 142 |
| Total Liverpool cases | 6,133 |

Some of the treatment centres have reached a high standard of efficiency. A table is appended shewing the number of patients and attendances. The Royal Infirmary has had the largest number of patients, and certain adjustments in the Medical Staff and the hours at which clinics are held have been made to meet the large numbers of persons requiring treatment. Provision of additional facilities for irrigation treatment has also been made at all the centres and also where desired, disinfecting facilities have been provided for persons who have been exposed to the risk of infection. Where in-patient accommodation has not been sufficient to cope with the numbers of patients requiring treatment, special arrangements have been made for suitable transfers from one hospital to another.

The provisions made by the Venereal Diseases Committee have been well developed, and they would seem for the moment, pending further Government or local legislation, to be adequate. It is felt, however, that something more is required in order to grapple with the problem of the prevention of the Disease. Experience has amply shewn that whilst full facilities are available for the treatment of sufferers, and there can be no doubt that these are very fully availed of, as shewn by the numbers of new patients, yet there is still great difficulty in getting patients to continue treatment until they are cured, or free from infection.

Clearly it is a waste of public money and public effort to give treatment which fails to have results. The Public Health object of that treatment is not primarily to benefit the individual, but to protect the public, and if because of non-continuance of treatment, the individual remains a source of danger and of infection, we have rank waste of money and of effort.

As will be seen, from the table appended, large numbers of patients give up treatment when the local manifestations of the diseases have subsided, and as there is no compulsion exercised on patients to continue their treatment; such persons remain in an infectious condition, and consequently a great danger to the public.

TABLE SHOWING TOTAL NUMBER OF NEW CASES OF VENEREAL DISEASE AND THE ATTENDANCES AT THE VARIOUS CITY CLINICS DURING THE YEAR 1920.

| Hospital. | Date of opening. | New cases. | Attendances. | Number of Patients on the books. | Ceased to attend before cure completed. |
|----------------------------|------------------|------------|--------------|----------------------------------|---|
| Royal Infirmary | 1/8/1917 | 2,804 | 39,278 | 4,562 | 2,455* |
| Cancer and Skin | 31/1/1918 | 1,219 | 16,604 | 1,932 | 603* |
| Royal Southern | 7/9/1917 | 761 | 6,366 | 1,050 | 263* |
| David Lewis Northern | 23/6/1919 | 846 | 9,183 | 1,071 | 600* |
| Stanley | 7/7/1919 | 597 | 6,018 | 712 | 184* |

* Figures not comparable owing to different systems of time limitation.

TABLE SHOWING CLASSIFICATION OF CASES ATTENDING THE LIVERPOOL ROYAL INFIRMARY DURING 1920.

| | NEW CASES. | | | CEASED TO ATTEND BEFORE CURE COMPLETED. | | | TOTAL ATTENDANCES. | | |
|---|------------|-----|--------|---|-----|--------|--------------------|-------|--------|
| | M. | F. | Total. | M. | F. | Total. | M. | F. | Total. |
| Gonorrhoea | 842 | 209 | 1,051 | 975 | 330 | 1,305 | 17,765 | 4,925 | 22,690 |
| Chancres | 1,120 | 124 | 1,244 | 1,071 | 78 | 1,149 | 14,786 | 803 | 15,589 |
| Unaffected cases | 2 | — | 2 | 1 | — | 1 | 14 | — | 14 |
| Examined and found to be free from V.D. | 434 | 73 | 507 | — | — | — | 873 | 112 | 985 |
| Total | 2,398 | 406 | 2,804 | 2,047 | 408 | 2,455 | 33,438 | 5,840 | 39,278 |

Efforts have been made in Liverpool to get the patients back to hospital to continue treatment, and the importance of steady and continuous attendance for treatment under the guidance of the physician has been fully emphasised in each case. In the case of those who have ceased attendance appropriately worded letter-cards have been sent by the doctors of the clinics asking the patient to return, and in the case of women special visits have been made by a member of the Female Staff of the Public Health Department specially appointed for this work.

The occupations followed by the patients attending the Clinics at the Royal Infirmary are of interest:—

| MALES. | FEMALES. |
|---|-----------------------------|
| Seafaring people 880
(Of these 138 were foreign.) | Housewife 194 |
| Artizans 991 | Home duties 24 |
| Miscellaneous 492
(Clerks, Agents, Hawkers,
&c.) | Unemployed 10 |
| | Shop Assistant 7 |
| | Factory hands 5 |
| | Kitchen hands 7 |
| | Housemaid 5 |
| | Waitress 8 |
| | Domestic servant 8 |
| | Other occupations 60 |
| <hr/> 2,363 | <hr/> 328 |

61 per cent. of the total patients registered were discharged soldiers and sailors.

37 per cent. of the total patients registered were seafaring people.

15 per cent. of the latter were not natives of the British Isles, and are classed as follows:—

U.S.A. and Canada, 58; Norway and Sweden, 25; other nationalities, 55.

The ages range from 15 to 67, but the majority were between the ages of 20 and 30 years.

STILL-BIRTHS.—In July, 1916, a beginning was made in the examination of cases of still-births in relation to syphilis as a cause of the condition, and arrangements were made with the City Bacteriologist to have this carried out systematically. Since the beginning of this work until the present time over 1,300 cases have been investigated. During 1920, 411 still-born infants were examined, and of these 43 gave positive evidence of syphilis (i.e., over 10 per cent.). The importance of this work is very great, for where the actual causal spirochaete has been discovered the mother (and in some cases the father) can be advised to submit to treatment. The special Health Visitor also undertakes the visiting of these cases, and visits to the number of 349 were made during the year.

In many instances great difficulty has been experienced in getting the mothers to attend for examination and treatment. A large number, however, are persuaded to attend for treatment, but these women prefer to attend at hours other than those fixed in the regular Time-table; it is difficult to get those of the better class to continue attendance at regular clinics where prostitutes and other types of patients are brought together.

V.D. Act, 1917.—It will be remembered that in 1920 an important prosecution was undertaken in connection with quack treatment of Venereal Disease by a person in Glasgow. The original information on which the case was undertaken was obtained in Liverpool at one of the V.D. clinics. A sentence of six months' imprisonment was imposed.

Recently two persons were convicted of an offence under the same Act, in that they prescribed a herbal remedy for the treatment of Venereal Disease. One was sentenced to two months' and the other to six months' imprisonment respectively.

The following drugs have been issued to Institutions and Medical Practitioners by the Department during the year 1920:—

VERMINOUS PERSONS.

Facilities for the cleansing and disinfection of verminous persons and their belongings have been arranged for by the Port Sanitary Authority.

The bathing of these persons has been carried out at the Netherfield Road and Sparrow Hall Hospitals, where an ample number of baths are available. The disinfectors of the hospitals, which are of large size, are, if necessary, utilised for the destruction of vermin in the clothing and belongings of these persons. As a rule, the alien immigrants and transmigrants arriving in the Port of Liverpool on inward-bound vessels are in a clean condition, and do not require the cleansing referred to.

The presence of typhus, which is a vermin transmitted disease, in Poland and in the neighbouring Continental countries, has caused the Ministry of Health and also American Health Authorities to view with some concern the arrival of emigrants and transmigrants in this country en route to America. These persons arrive in Liverpool from Dantzic, Hamburg, Antwerp, Rotterdam and Finland. The routes followed are:—

From Dantzic via Hull and London.

,, Antwerp via London and Grimsby.

,, Finland via Hull and Newcastle.

There are also direct services of steamers from the Continent to U.S.A. and Canada. The classes of transmigrants are mostly domestic servants and agricultural labourers. The various nationalities are Russians, Polaks, Jugo-Slavs, Austrians, Hungarians, Finns and Scandinavians.

The Emigration houses in which these people are housed pending the sailing of the vessel are kept under strict supervision; they are visited daily, and all cases of infectious illness promptly reported to the Company's doctor and the Local Health Authority. The bedding is also constantly examined and attention is given to the occupation of the rooms to prevent overcrowding and to ensure cleanliness. In view of the prevalence of typhus in Poland and neighbouring countries the Medical Officer of Health, at the request of various shipping companies acting under the instructions of the American Consul arranged that certain Polish and other emigrants, together with their effects, should be bathed and disinfected. This work is carried out at the Netherfield Road and Sparrow Hall Hospitals, where the special steam disinfectors have been made use of. The cost of the disinfection is defrayed by the Shipping Company concerned.

HOSPITAL ACCOMMODATION.

During the year 1920 the City Infectious Hospitals and Sanatoria were in full commission throughout the year. The necessary repairs and repainting required at the Fazakerley Hospital and Fazakerley Sanatorium after their temporary occupation by the military authorities were completed, and an effort was made to get the new Hospital at Sparrow Hall ready for the admission of infectious cases. This institution, with 150 beds, is intended for use as a Smallpox Hospital in the event of any considerable outbreak of this disease in the City and Port. Such outbreaks do occur from time to time in all large cities, and more especially at seaports, where extensive trade is carried on with Mediterranean and Indian ports. Although every precaution is adopted to prevent the entry of any suspected case by sea, it does occasionally happen that persons infected abroad arrive in Liverpool inside the incubation period and before the symptoms of the disease are manifest. Such people may have the disease in a mild form, and open up many channels of infection before the disease is fully recognised. The history of Smallpox outbreaks in Liverpool is well shown in the accompanying table showing the number of cases notified and the number of deaths during each of the last fifty-one years. (See page 120.)

The Sparrow Hall Hospital stands in an isolated position which is not likely to be encroached upon by the building of dwelling-houses and is eminently suited for the purpose for which it is intended, when an adequate boundary wall has been erected. This work is now in progress.

The arrangement with the Committee of the David Lewis Northern Hospital whereby ten beds in that Institution were reserved for the treatment of cases of enteric fever, anthrax, etc., was discontinued as from 31st October, 1920, as it was found that accommodation could be found for these cases at the Fazakerley Hospital.

Further arrangements were also made for the accommodation of cases of measles at Fazakerley Hospital and Fazakerley Annexe, by the temporary use of the Sparrow Hall Hospital for convalescent patients and for isolation purposes. Patients were admitted to the Sparrow Hall

Institution in October, 1920, and this enabled the Committee to consider the termination of the use of the isolation block at Walton Institution which had been kindly placed at their disposal by the West Derby Guardians. Arrangements were accordingly made to cease the use of these beds as from 31st March, 1921.

At the end of the year therefore the amount of hospital accommodation for infectious cases stood as follows:—

| | | | | | |
|-----------------------|-----|-----|-----|-----|-------------------|
| City Hospital North | ... | ... | ... | ... | 166 beds |
| „ South | ... | ... | ... | ... | 96 „ |
| „ East | ... | ... | ... | ... | 153 „ |
| „ Fazakerley | ... | ... | ... | ... | 300 „ |
| „ Fazakerley Annexe | ... | ... | ... | ... | 160 „ |
| „ Sparrow Hall | ... | ... | ... | ... | 150 „ |
| Deysbrook Hospital | ... | ... | ... | ... | 110 „ |
| Walton Institution | ... | ... | ... | ... | 40 „ |
| Parkhill Sanatorium | ... | ... | ... | ... | 225 „ |
| Fazakerley Sanatorium | ... | ... | ... | ... | 240 „ |
| | | | | | <hr/> 1,640 <hr/> |

Deysbrook Hospital belongs to the West Derby Board of Guardians, but by arrangement has been in the possession of the Corporation since October, 1914, and is used for convalescent cases.

The value of the hospitals, and the immense amount of useful work performed, is shown by the fact that no less than 6,371 patients were treated within their walls during the year. This number includes the patients admitted to the David Lewis Northern Hospital and the Walton Institution.

Arrangements have been made between the Hospitals Committee and various Local Authorities to receive cases of infectious disease from districts beyond the City boundary, namely, Sefton Rural District, Waterloo and Seaforth, Great Crosby, Little Crosby, Leasowe Hospital, and the Children's Convalescent Home, West Kirby.

Arrangements have also been made to deal with any case of cholera, yellow fever, or plague, which may arise in any of the neighbouring Urban or Rural Districts. A suitable charge is made in each case.

SMALL-POX DURING THE LAST FIFTY-ONE YEARS.

| Years of Increase. | No. of Cases. | Deaths. | Years of Subsidence. | No. of Cases. | Deaths. |
|--------------------|---------------|---------|----------------------|---------------|---------|
| 1870 | Unrecorded | 174 | | | |
| 1871 | " | 1,919 | | | |
| 1872 | " | 50 | | | |
| | | | 1873 | Unrecorded | 10 |
| | | | 1874 | " | 30 |
| | | | 1875 | " | 29 |
| 1876 | " | 386 | | | |
| 1877 | 1,660 | 299 | | | |
| | | | 1878 | 35 | 3 |
| | | | 1879 | 12 | — |
| | | | 1880 | 14 | 2 |
| 1881 | 262 | 34 | | | |
| | | | 1882 | 67 | 6 |
| | | | 1883 | 126 | 26 |
| 1884 | 832 | 106 | | | |
| 1885 | 375 | 46 | | | |
| 1886 | 234 | 29 | | | |
| | | | 1887 | 23 | 1 |
| | | | 1888 | 27 | 1 |
| | | | 1889 | 9 | 1 |
| | | | 1890 | 2 | — |
| | | | 1891 | 21 | 2 |
| | | | 1892 | 177 | 13 |
| | | | 1893 | 75 | 9 |
| 1894 | 229 | 20 | | | |
| | | | 1895 | 130 | 12 |
| | | | 1896 | 8 | — |
| | | | 1897 | 6 | — |
| | | | 1898 | 17 | 2 |
| | | | 1899 | 10 | 1 |
| | | | 1900 | 156 | 23 |
| | | | 1901 | 37 | 6 |
| 1902 | 560 | 20 | | | |
| 1903 | 1,720 | 141 | | | |
| | | | 1904 | 27 | 2 |
| | | | 1905 | 15 | — |
| | | | 1906 | 19 | 1 |
| | | | 1907 | 19 | — |
| | | | 1908 | 7 | — |
| | | | 1909 | 9 | — |
| | | | 1910 | 10 | — |
| | | | 1911 | 19 | — |
| | | | 1912 | 4 | 1 |
| | | | 1913 | 13 | 1 |
| | | | 1914 | 2 | — |
| | | | 1915 | — | — |
| | | | 1916 | 7 | — |
| | | | 1917 | 3 | 1 |
| | | | 1918 | 2 | — |
| | | | 1919 | 20 | 1 |
| | | | 1920 | 10 | 2 |

The above table includes cases arriving on vessels or importations through other channels.

**CITY HOSPITALS AND SANATORIUM,
FAZAKERLEY.**

REPORT OF THE MEDICAL SUPERINTENDENT.

The customary statistical tables are submitted for the year ending December 31st, 1920.

The figures represent an increase of 849 in the total number of patients admitted, as compared with the previous year. During 1920 the whole of the accommodation temporarily in military occupation became available for the purposes of infectious disease, and during the later months of the year the pressure of cases made it necessary to put all the wards into commission.

The number of cases under treatment at one time reached a maximum of 374 on the 29th March. The following figures represent the gross monthly admissions:—

| | | | | | | |
|-----------|-----|-----|-----|-----|-----|-----|
| January | ... | ... | ... | ... | ... | 170 |
| February | ... | ... | ... | ... | ... | 254 |
| March | ... | ... | ... | ... | ... | 224 |
| April | ... | ... | ... | ... | ... | 239 |
| May | ... | ... | ... | ... | ... | 186 |
| June | ... | ... | ... | ... | ... | 202 |
| July | ... | ... | ... | ... | ... | 201 |
| August | ... | ... | ... | ... | ... | 114 |
| September | ... | ... | ... | ... | ... | 147 |
| October | ... | ... | ... | ... | ... | 248 |
| November | ... | ... | ... | ... | ... | 209 |
| December | ... | ... | ... | ... | ... | 180 |

MIXED INFECTIONS.

The varied character of the diseases met with during the year has severely tested the available facilities for the separate isolation of different infections. The difficulties suffered by an Isolation Hospital in this respect are demonstrated by a consideration of the following figures:

Of the total 2,374 patients admitted, 40 were found to be suffering from a double infection; 73 were suffering from a disease the diagnosis of which was doubtful on admission, and 38 were suffering from a disease of a non-infectious character.

These cases necessitated treatment under conditions which would safeguard them from acquiring, or transmitting to others, a secondary infection; they could not, therefore, be dealt with in either of the wards reserved for a single disease, and it became necessary to deal with them, as in previous years, by the system of bed-isolation. In addition, a number of cases of the rarer forms of infectious disease, including Acute Anterior Poliomyelitis, Encephalitis Lethargica, Cerebro-Spinal Fever, etc., were similarly dealt with. The work of this department of the hospital is sufficiently indicated by the following list of diseases treated in one Ward during a period of ten months:—

| | | | |
|--|----|---|----|
| Acute Anterior Poliomyelitis | 4 | Measles and Whooping Cough | 1 |
| Cerebro-spinal Fever | 4 | Measles, Whooping Cough
and Scarlet Fever(?) | 1 |
| Chicken-pox | 31 | Measles and Scarlet Fever(?) | 1 |
| Chicken-pox and Diphtheria... | 1 | Measles(?) | 2 |
| Chicken-pox and Diphtheria(?) | 1 | Mumps | 4 |
| Chicken-pox and Scarlet
Fever | 5 | Paratyphoid Fever | 1 |
| Chicken-pox and Scarlet
Fever(?) | 1 | Pneumonia | 6 |
| Chicken-pox and Whooping
Cough | 1 | Scarlet Fever | 21 |
| Diphtheria | 15 | Scarlet Fever and
Appendectomy | 1 |
| Diphtheria(?) | 8 | Scarlet Fever and Chicken-
pox Contact | 1 |
| Diphtheria and Scarlet
Fever(?) | 2 | Scarlet Fever and German
Measles | 1 |
| Diphtheria and Rubella(?) ... | 1 | Scarlet Fever and Whooping
Cough | 3 |
| Diphtheria(?) Scarlet
Fever(?) | 3 | Scarlet Fever(?) | 18 |
| Dysentery | 1 | Scarlet Fever(?) German
Measles(?) | 1 |
| Encephalitis Lethargica ... | 3 | Scabies | 1 |
| Enteric Fever | 20 | Syphilis | 1 |
| Enteric Fever and Scarlet
Fever(?) | 1 | Syphilis and Tuberculosis ... | 1 |
| Erysipelas | 18 | Trench Fever | 1 |
| German Measles | 19 | Tubercular Glands | 1 |
| German Measles and Scarlet
Fever(?) | 1 | Tubercular Hip | 1 |
| Influenza | 1 | Tuberculosis of Lungs | 1 |
| Malaria | 2 | Whooping Cough | 7 |
| Measles | 51 | Whooping Cough and
Scarlet Fever(?) | 1 |
| Measles and Appendectomy... | 1 | Other Diseases | 18 |

No case of cross infection occurred amongst these patients.

The number and description of cases proving fatal within 48 hours of admission during the year are shewn in the following table:—

ANALYSIS OF CASES DYING WITHIN 48 HOURS OF ADMISSION, 1920

| Disease. | Age. | Days ill prior to admission. | Cause of Death. | No. of hours in Hospital. |
|----------------------------|------|------------------------------|-------------------------|---------------------------|
| Scarlet Fever | 10 | 5 | Toxæmia | 2 |
| Scarlet Fever | 3½ | 4 | Toxæmia | 42 |
| Diphtheria and Measles ... | 3 | 14 | Broncho-pneumonia ... | 22 |
| Diphtheria | 3 | 6 | Toxæmia | 7 |
| Diphtheria | 8 | 7 | Toxæmia | 6 |
| Measles | 1 | 9 | Broncho-pneumonia ... | 36 |
| Diphtheria | 2½ | 5 | Toxæmia | 6 |
| Scarlet Fever | 1½ | 6 | Septicæmia | 28 |
| Diphtheria | 5½ | 5 | Toxæmia | 8 |
| Diphtheria | 4 | 5 | Toxæmia | 19 |
| Diphtheria | 4 | 4 | Toxæmia | 40 |
| Diphtheria | ½ | 2 | Toxæmia | 2 |
| Erysipelas | ½ | 2 | Pneumonia | 20 |
| Diphtheria | 8 | 5 | Toxæmia | 39 |
| Diphtheria | 5½ | 5 | Toxæmia | 20 |
| Diphtheria | 2½ | 6 | Toxæmia | 12 |
| Diphtheria | 1½ | 3 | Toxæmia. Convulsions... | 29 |
| Diphtheria and Measles ... | 5½ | 14 | Toxæmia | 23 |
| Scarlet Fever | 2½ | 4 | Septicæmia. Toxæmia ... | 46 |
| Diphtheria | 1½ | ? 14 | Toxæmia | 30 |
| Diphtheria | ½ | 4 | Toxæmia | 2 |
| Diphtheria | 3 | 3 | Toxæmia | 3 |
| Scarlet Fever* | 6 | 3 | Toxæmia | 31 |
| Scarlet Fever* | 12 | 2 | Toxæmia | 33½ |
| Diphtheria | 4 | 4 | Toxæmia | 30 |
| Diphtheria | ½ | 4 | Toxæmia | 47 |
| Diphtheria and Measles ... | ½ | 5 | Broncho-pneumonia ... | 46 |

*These two cases were brother and sister. A third member of the family (a boy age 4 years) had died at home of Toxic Scarlet Fever, a day previously, after 36 hours, illness.

OPERATIVE SURGERY AND X-RAY WORK.

Surgical work assumed considerable dimensions in the course of 1920. The increase largely results from the decision of the Committee to admit cases of Surgical Tuberculosis to the Fazakerley Hospital and Sanatorium. Approximately one quarter of the total cases of Tuberculosis undergoing treatment are now of the surgical variety. The Hospital is equipped with a well-appointed modern operating theatre, and the appointment of a surgical specialist has ensured to each patient the advantages of the most recent and effective methods of surgical treatment. In the early months of 1921, it is anticipated that a second theatre reserved for the purposes of "clean" surgery will be completed and in use. Under these circumstances it is felt that the Fazakerley Hospital will be quite exceptionally equipped to deal on an extensive scale with the pressing needs of surgical tuberculosis.

The X-ray department of this hospital has been constantly in operation during the year. All pulmonary cases of Tuberculosis are screened on admission, and, as required, during the course of treatment; also on discharge. Radiographs have been taken where necessary. X-Rays have not been used as a therapeutic measure.

DIPHTHERIA.

A comparison between the clinical progress and behaviour of diphtheria admitted into hospital during the year under review, and those dealt with prior to the war, brings out certain points which attract serious attention.

The amelioration of local symptoms, i.e., the arresting of the spread, and the ultimate disappearance, of the membrane, after a given dose of anti-diphtheria serum, is noticeably less prompt at the present time than was experienced before the war. As a direct result of this delayed clinical response to curative serum the outlook of the case is less satisfactory. It was found that death in the first phase of toxæmia occurred more rapidly, whilst, in those patients who successfully overcame this earlier period of depression, a higher incidence of post-diphtheritic paralysis, severe in extent, as well as in degree, was noted.

To express the matter more briefly, larger doses of serum are required to-day to produce the same clinical improvement than were needed seven years ago.

A further point noticed is that serum rashes, and serum sickness, are of less frequent occurrence.

The apparent alteration in the virtue of the serum operates directly in making the illness of the patients more fatal, and, where death does not occur, in rendering their stay in hospital more prolonged. As a natural sequence, the larger amount of serum which must be used, and the longer period of detention of the patients in hospital, combines seriously to increase the cost of maintenance.

The *raison d'être* of this alteration in the therapeutic effect of anti-diphtheria serum cannot clearly be defined.

The change is not restricted to the serum of a particular maker. Whether it is due to an alteration in type, or toxicity of the prevailing bacillus, or is a result of the use of apparatus, or reagents, different from the foreign produced chemicals, etc., of pre-war days, it is not within the scope of this note to indicate.

GERMAN MEASLES.

No fewer than 98 cases of this disease have been admitted during the year. This number is considerably in excess of that of any previous year. The disease though, fortunately, rarely serious in itself, is highly infectious, and its prevalence has necessitated a very full use of the isolation resources of this hospital.

TUBERCULOSIS.

In the course of 1920 the Fazakerley Sanatorium became complete in its personnel and equipment, and its total beds (245) became wholly available for the reception of patients. In addition there have been allocated to the purposes of Tuberculosis 75 beds at the Isolation Hospital, making a total of 320 available beds for cases of this disease. During the year 597 patients have been admitted.

The majority of these cases were suffering from pulmonary disease, the remainder from disease of Glands, Mesentery, Bone, Joints or Internal Organs. The structural design of the Sanatorium pavilions, whereby are provided a number of separate wards of varying bed capacity, has enabled the administration to treat separately pulmonary, from non-pulmonary disease, and to segregate sputum negative cases from those in which the bacillus has been found present. This differentiation

has been regarded as having considerable importance, particularly in the case of those children in whom a diagnosis has not been confirmed bacteriologically.

CLASSIFICATION OF CASES.

Patients on admission have been classified in accordance with Turban's formula:—

| | | | | | | |
|-----------------------------|-----|-----|-----|-----|-----|-----|
| Class 1 | ... | ... | ... | ... | ... | 121 |
| Class 2 | ... | ... | ... | ... | ... | 175 |
| Class 3 | ... | ... | ... | ... | ... | 255 |
| Non-pulmonary Tuberculosis | ... | ... | ... | ... | ... | 22 |
| No evidence of Tuberculosis | ... | ... | ... | ... | ... | 11 |

Infection of other organs, together with lung disease, occurred in 27 cases included in the three classes. The accompanying figures represent the occupation in which patients are stated to have been employed immediately prior to their admission. It frequently happens that individuals have, by reason of their disease, been diverted from highly skilled grades to less skilled grades of employment; occupation lists, in consequence, give only an approximate indication of the genuine employment of the patient:—

MALES.

| | | | | | | | | | | |
|--------------------|-----|-----|-----|-----|----|---------------------|-----|-----|-----|----|
| Labourer | ... | ... | ... | ... | 45 | Market Salesman | ... | ... | ... | 3 |
| Clerk | ... | ... | ... | ... | 19 | Ship's Cook | ... | ... | ... | 3 |
| Dock Labourer | ... | ... | ... | ... | 15 | Storekeeper | ... | ... | ... | 3 |
| Soldier | ... | ... | ... | ... | 13 | Plasterer | ... | ... | ... | 3 |
| Carter | ... | ... | ... | ... | 9 | Engineer | ... | ... | ... | 3 |
| Fireman | ... | ... | ... | ... | 9 | Chairmaker | ... | ... | ... | 2 |
| Ship's Steward | ... | ... | ... | ... | 8 | Policeman | ... | ... | ... | 2 |
| Motor Driver | ... | ... | ... | ... | 8 | Blacksmith | ... | ... | ... | 2 |
| Porter | ... | ... | ... | ... | 5 | Fitter | ... | ... | ... | 2 |
| Navy | ... | ... | ... | ... | 5 | Shipwright | ... | ... | ... | 2 |
| Painter | ... | ... | ... | ... | 5 | Hawker | ... | ... | ... | 2 |
| Tram Conductor | ... | ... | ... | ... | 5 | Ironmoulder | ... | ... | ... | 2 |
| Grocer's Assistant | ... | ... | ... | ... | 4 | Bootmaker | ... | ... | ... | 2 |
| Sailor | ... | ... | ... | ... | 4 | Postman | ... | ... | ... | 2 |
| Barber | ... | ... | ... | ... | 4 | Bricklayer | ... | ... | ... | 2 |
| Barman | ... | ... | ... | ... | 4 | Tailor | ... | ... | ... | 2 |
| Joiner | ... | ... | ... | ... | 4 | Various | ... | ... | ... | 93 |
| Checker | ... | ... | ... | ... | 4 | School age or under | ... | ... | ... | 31 |

FEMALES.

| | | | |
|--------------------------|----|-------------------------|----|
| Housewife | 99 | Tailoress | 3 |
| Shop Assistant | 15 | Typist | 3 |
| Clerk | 11 | Book-keeper | 2 |
| General Servant | 10 | Cashier | 2 |
| Packer | 10 | Machinist | 2 |
| Tobacco Factory Hand ... | 9 | Pianist | 2 |
| Mill Worker | 8 | Waitress | 2 |
| Milliner | 5 | No occupation... .. | 6 |
| Nurse | 5 | Various | 23 |
| Laundress | 4 | School age or under ... | 32 |

The above figures include 11 patients in whom no evidence of Tuberculosis was found.

| | |
|----------------------------------|---|
| MALE.—School age or under | 3 |
| Various | 4 |
| FEMALE.—Housework | 4 |

EX-SERVICE MEN.

Two hundred and four Ex-service men were admitted during the year.

GRADUATED EXERCISES.

A considerable development has taken place in the methods of exercise and employment, more particularly in the following directions:—

GARDENING AND AGRICULTURE.—A larger share than hitherto has been taken by female patients in work of this character. Separate vegetable grounds have been provided for women and girls, and products in considerable quantities have been contributed to the Sanatorium supplies. The work of male patients has been more restricted to the heavier grades, including the breaking of new grounds, sawing and disposing of timber, etc. It is found that, generally, male adults take more interest, and display more enthusiasm, in work of a more immediately productive character, such as the following:—

POULTRY FARMING.—Further accommodation for approximately 200 birds has been provided entirely by patients' labour. The timber for this purpose was obtained from the Military Authorities on their ceasing to occupy the Isolation Hospital, and no further expenditure has been called for in connection with the extension of the Poultry Farm, other

than the cost of wire netting and creosote solution. The accounts for this department show throughout the year an increasing balance of profit.

An additional incubator and breeding pen have been secured, and it is anticipated that very considerable extensions will be possible during 1921. Both male and female patients have been engaged, and have taken a very keen interest in the work.

BOOT REPAIRS AND LEATHER WORK.—A workshop has been fitted with the appliances necessary for ordinary repairs and cobbling, and a number of patients have been employed in this work throughout the year. No instructor has been employed, but the services of a skilled patient were engaged to organise the shop, and instruct his fellow patients. Considerable success has been achieved; repairs on an extensive scale have been successfully carried out, and patients have been keen to learn. No wages have been paid, but patients working have been allowed the privilege of making repairs to their own boots free of charge. A charge is made in respect of other work done, sufficient to meet the cost of tools and materials; it is not intended, at the moment, to take a profit from this department. It is, however, entirely self-supporting.

JOINERY AND CARPENTRY.—A workshop has been provided and equipped to enable patients to undertake the necessary woodwork in connection with the building of huts, trap nests, and minor repairs. Work of a highly skilled character is not attempted, nor would it be profitable to do so until the provision of an Industrial Colony has been made, and the cost of a paid instructor justified.

BASKET MAKING.—This has proved a useful form of exercise, and employment for those patients, both male and female, who have not yet reached the higher grades of graduated exercise. Under the tuition of an Instructor this work has proved an agreeable pastime to a number of patients.

It has to be remembered that a Sanatorium, not paying wages to patients, is at some disadvantage when compared with an Industrial Colony paying a trade union rate to its workers. In the former case, graduated exercise is a therapeutic measure only, bringing no monetary advantage to the workers. The co-operation shewn by patients in establishing these departments has been very gratifying to those in charge.

METHODS OF TREATMENT.

These have been generally on the lines indicated in the previous reports. The practical application of the principles of auto-inoculation has proved of greater value than treatment by specific remedies. Tuberculin preparations have been restricted in their use to selected cases of gland, and bone, disease. Autogenous vaccines have been employed in certain cases secondarily infected with pus organisms, but in no case has the result been of more than doubtful value.

Treatment by the induction of Artificial Pneumothorax is practised in suitable cases. It has not, however, been thought advisable to recommend this measure in early cases, until there is clear indication of extending disease in spite of a thorough application of Sanatorium methods. Some details are given in the following summary:—

Cases treated, 20. In four of these cases the treatment was not persisted in, as total collapse could not be induced by reason of adhesions.

Injections given, 127 in all.

PARK HILL SANATORIUM.

REPORT OF THE MEDICAL SUPERINTENDENT.

Of the 490 patients admitted during the year, in 475 the primary lesion was in the lung, and in 13 the primary lesion was elsewhere. In 2 cases there was no evidence of Tuberculosis. 178 of the Admissions were ex-service men.

AGE PERIODS.—The age periods of the Tuberculosis cases admitted were as follows:—

| | Under 5 | 5—10 | 10—20 | 20—30 | 30—40 | 40—50 | 50
upwards. | Total. |
|--------------|---------|------|-------|-------|-------|-------|----------------|--------|
| No. of cases | 1 | 10 | 85 | 110 | 129 | 108 | 45 | 488 |

CLASSIFICATION OF PULMONARY CASES.—The admissions have been classified according to a system based on the extent of the lesion in the lung together with the amount of constitutional disturbance.

In the following table L_1 denotes not more than a total of one lobe of the lung affected, L_2 more than a total of one lobe but less than two lobes affected, L_3 more than a total of two lobes, or very marked disease in one or more lobes. S_1 , S_2 , and S_3 denote respectively (1) very slight constitutional disturbance, (2) more marked symptoms but not severe illness, and (3) marked constitutional disturbance:—

TABLE.

| | S_1 | S_2 | S_3 |
|-------|-------|-------|-------|
| L_1 | 67 | 24 | — |
| L_2 | 39 | 127 | 30 |
| L_3 | 12 | 62 | 114 |

Graded exercise has as heretofore formed an essential feature in the treatment of patients, gardening having been the most important method of providing a variety of exercise. The male patients in the earlier part of the year levelled a portion of sloping ground for use as a croquet lawn, which later in the year afforded a means of recreation in addition to the bowling green already in existence, and which itself had been entirely constructed by patients. Male and female patients also prepared and attended plots of ground for use as garden beds, in which exercise considerable interest has been maintained. For indoor recreation the billiard-room has been a great asset, while concerts have been given practically every week during the winter months of the year, and were continued, though less frequently, during the summer months.

SCHOOL.—Facilities have been provided for the teaching of children of school age, the school opening in June with Miss McKay, as teacher, whose appointment was recommended by the Education Committee.

The school accommodates 35 to 40 children of both sexes, whose ages vary from 6 to 15 years. The instruction has been of a varied nature, the subjects being so arranged that the interest of the children is maintained without fatigue. Marked benefit has been derived by a number of children who were very backward through irregular school attendance before admission, and there has also been a noticeable improvement in the general health and in the spirits of the children since the commencement of the school. The teacher has also been of considerable assistance in organizing the outdoor recreation of the children.

Valuable help has been received from the Education Committee through the Special Schools Department in their assistance in ordering school stock and in their supervision of and advice on technical matters of instruction.

CITY HOSPITALS.

The following tables, prepared by the Medical Staff of each hospital, show the number of patients, the nature of the illness, and the results at each of the nine hospitals during the year 1920:—

CITY HOSPITAL NORTH, NETHERFIELD ROAD.

Visiting Physician, Dr. R. I. RICHARDSON.

Resident Physician, Dr. L. B. STOTT.

| DISEASES. | Remaining
Dec. 31st, 1919. | Admitted
during the year. | Transferred from
other City
Hospitals. | Total under
Treatment during
the year. | Transferred
to Convalescent
Hospital. | Transferred
to other
City Hospitals. | Discharged
Cured. | Remaining
at end of year. | Died within
48 hours of
Admission. | Total Deaths. | Total Mortality
per cent. of
Admissions. |
|---|-------------------------------|------------------------------|--|--|---|--|----------------------|------------------------------|--|---------------|--|
| Scarlet Fever. | 115 | 968 | 1 | 1084 | 338 | — | 624 | 90 | 4 | 32 | 3.30 |
| Typhus Fever. | — | — | — | — | — | — | — | — | — | — | — |
| Enteric Fever | — | — | — | — | — | — | — | — | — | — | — |
| Diphtheria ... | — | 1 | — | 1 | — | — | 1 | — | — | — | — |
| Measles..... | 1 | 3 | — | 4 | — | 2 | 2 | — | — | — | — |
| Whooping
Cough..... | — | — | — | — | — | — | — | — | — | — | — |
| Other Diseases | — | — | — | — | — | — | — | — | — | — | — |
| Isolation and
Observation
Cases | — | 15 | — | 15 | — | — | 12 | 1 | 1 | 2 | 13.3 |
| Totals ... | 116 | 987 | 1 | 1104 | 338 | 2 | 639 | 91 | 5 | 34 | 3.45 |

CITY HOSPITAL SOUTH, GRAFTON STREET.

Visiting Physician, Dr. H. A. CLARKE.

Resident Physician, Dr. M. A. McHUGH.

| DISEASES. | Remaining
Dec. 31st, 1919. | Admitted
during the
year. | Transferred
from other
City Hospitals. | Total under
Treatment
during the year. | Transferred
to Convalescent
Hospital. | Transferred
to other City
Hospitals. | Discharged
Cured. | Remaining
at end of year. | Died within
48 hours of
Admission. | Total Deaths. | Total Mortality
per cent.
of Admissions. |
|--|-------------------------------|---------------------------------|--|--|---|--|----------------------|------------------------------|--|---------------|--|
| Enteric Fever..... | — | — | — | — | — | — | — | — | — | — | — |
| Scarlet Fever..... | 92 | 468 | — | 560 | 214 | — | 271 | 66 | — | 9 | 1.6 |
| Diphtheria | 1 | 2 | — | 3 | — | — | 3 | — | — | — | — |
| Measles | 1 | 186 | — | 187 | — | — | 165 | 14 | 3 | 8 | 4.3 |
| Other Diseases..... | — | 21 | — | 21 | — | 3 | 16 | — | 1 | 2 | 10.1 |
| Isolation & Obser-
vation Cases | 2 | 19 | — | 21 | — | — | 21 | — | — | — | — |
| Totals | 96 | 696 | — | 792 | 214 | 3 | 476 | 80 | 4 | 19 | 2.7 |

FAZAKERLEY SANATORIUM.

Medical Superintendent, Dr. C. RUNDLE.

Principal Resident Medical Officer, Dr. W. CRANE.

*Assistant Resident Medical Officers, Drs. A. E. CONNOLLY,
J. O. MURRAY, B. G. ELLIOTT.*

| DISEASES. | Remaining Dec.
31st, 1919. | Admitted during
the year. | Transferred from
other City Hospitals | Total under Treat-
ment during the
year. | Transferred to
Convalescent Hospital | Transferred to other
City Hospitals. | Discharged. | Remaining
at end of year.
Died within 48
hours of Admission. | Total Deaths. | Total Mortality
per cent. of
Admissions. |
|--------------------|-------------------------------|------------------------------|--|--|---|---|-------------|---|---------------|--|
| Tuberculosis | 218 | 553 | 1 | 772 | — | 1 | 455 | 263 | 53 | 9.58 |

CITY HOSPITAL, FAZAKERLEY ANNEXE.

Medical Superintendent, Dr. C. RUNDLE.

Resident Medical Officer, Dr. L. DENIL.

| Diseases. | Remaining
Dec. 31st, 1919. | Admitted
during the year. | Transferred
from other
City Hospitals. | Total under
Treatment dur-
ing the year. | Transferred to
Convalescent
Hospital. | Transferred
to other
City Hospitals. | Discharged
Cured. | Remaining at
end of year. | Died within
48 hours of
Admission. | Total
Deaths. | Total Mortality
per cent. of
Admissions. |
|------------------------------------|-------------------------------|------------------------------|--|--|---|--|----------------------|------------------------------|--|------------------|--|
| Scarlet Fever..... | 81 | 556 | — | 637 | 11 | 19 | 517 | 77 | 2 | 13 | 2.3 |
| Enteric Fever | — | — | — | — | — | — | — | — | — | — | — |
| Diphtheria | 35 | 177 | — | 212 | — | — | 182 | 13 | 8 | 17 | 9.6 |
| Measles | 1 | 6 | — | 7 | — | — | 7 | — | — | — | — |
| Whooping Cough ... | — | — | — | — | — | — | — | — | — | — | — |
| Other Diseases..... | 2 | 38 | — | 40 | — | — | 39 | 1 | — | — | — |
| Isolation and
Observation Cases | — | 33 | — | 33 | — | — | 31 | — | — | 2 | 6.1 |
| Totals | 119 | 810 | — | 929 | 11 | 19 | 776 | 91 | 10 | 32 | 3.95 |

CITY HOSPITAL, FAZAKERLEY.

Medical Superintendent, DR. C. RUNDLE.

Principal Resident Medical Officer, DR. A. E. HODGSON.

Assistant Resident Medical Officer, DRs. C. ABERNETHY and A. H. WILD.

| DISEASES. | Remaining
Dec. 31st, 1919. | Admitted
during the year. | Transferred
from other
City Hospitals. | Total under
Treatment dur-
ing the year. | Transferred
to Convalescent
Hospital. | Transferred
to other
City Hospitals. | Discharged
Cured. | Remaining at
end of year. | Died within
48 hours of
Admission. | Total Deaths. | Total Mortality
per cent. of
Admissions. |
|--|-------------------------------|------------------------------|--|--|---|--|----------------------|------------------------------|--|---------------|--|
| Scarlet Fever... | 108 | 727 | — | 835 | — | 164 | 566 | 92 | 3 | 13 | 1·7 |
| Enteric Fever.. | — | 22 | — | 22 | — | — | 15 | 6 | — | 1 | 4·5 |
| Para Typhoid
Fever | — | 2 | — | 2 | — | — | 2 | — | — | — | — |
| Diphtheria..... | 29 | 187 | — | 216 | — | — | 174 | 22 | 11 | 20 | 10·6 |
| Measles | 8 | 267 | — | 275 | — | — | 257 | 2 | 1 | 16 | 5·9 |
| Whooping
Cough..... | — | 5 | — | 5 | — | — | 5 | — | — | — | — |
| Phthisis | — | 43 | — | 43 | — | 14 | 4 | 23 | — | 2 | 4·6 |
| Other Diseases. | — | 302 | — | 302 | — | — | 269 | 14 | 2 | 19 | 6·2 |
| Isolation and
Observation
Cases..... | 3 | 9 | — | 12 | — | — | 5 | 7 | — | — | — |
| Totals..... | 148 | 1564 | — | 1712 | — | 178 | 1297 | 166 | 17 | 71 | 4·5 |

CITY HOSPITAL, DEYSBROOK, WEST DERBY.

Visiting Physician, Dr. W. J. ROBERTSON DUNN.

| Diseases. | Remaining
Dec. 31st, 1919. | Admitted during
the year | Transferred
from other
City Hospitals | Total under
Treatment during
the year | Transferred to
Convalescent
Hospital | Transferred
to other
City Hospitals | Discharged
Cured | Remaining at
end of year | Died within
48 hours of
Admission | Total Deaths | Total Mortality
per cent. of
Admissions |
|-------------------|-------------------------------|-----------------------------|---|---|--|---|---------------------|-----------------------------|---|--------------|---|
| Scarlet Fever ... | 80 | 11 | 661 | 753 | — | 20 | 680 | 71 | — | 1 | 9·1 |

CITY HOSPITAL, PARKHILL.*Medical Superintendent, Dr. H. R. MACINTYRE.*

| DISEASES. | Remaining Dec.
31st, 1919. | Admitted during
the year. | Transferred from
other City Hospitals. | Total under Treat-
ment during the
year. | Transferred to
Convalescent Hospital. | Transferred to other
City Hospitals. | Discharged. | Remaining
at end of year. | Died within 48
hours of admission | Total Deaths. | Total Mortality
per cent. of
Admissions. |
|----------------|-------------------------------|------------------------------|---|--|--|---|-------------|------------------------------|--------------------------------------|---------------|--|
| Phthisis | 211 | 490 | — | 701 | — | 4 | 362 | 213 | 3 | 122 | 24·8 |

CITY HOSPITAL EAST, MILL LANE, OLD SWAN.*Visiting Physician, Dr. H. A. CLARKE.**Resident Medical Officer, Dr. A. J. HAWES.*

| DISEASES. | Remaining Dec.
31st, 1919. | Admitted during
the year. | Transferred from
other City Hospitals. | Total under Treat-
ment during the
year. | Transferred to
Convalescent Hospital. | Transferred to other
City Hospitals. | Discharged. | Remaining
at end of year. | Died within 48
hours of Admission. | Total Deaths. | Total Mortality
per cent. of
Admissions. |
|--|-------------------------------|------------------------------|---|--|--|---|-------------|------------------------------|---------------------------------------|---------------|--|
| Scarlet Fever..... | — | 3 | — | 3 | — | — | 3 | — | — | — | — |
| Enteric Fever | — | — | — | — | — | — | — | — | — | — | — |
| Diphtheria..... | 115 | 1,172 | — | 1,287 | — | — | 1,063 | 87 | 53 | 137 | 11·7 |
| Measles | — | — | — | — | — | — | — | — | — | — | — |
| Other Diseases | — | 11 | — | 11 | — | — | 7 | — | — | 4 | 36·4 |
| Isolation and Obser-
vation Cases ... | 11 | — | — | 11 | — | — | 11 | — | — | — | — |
| Totals..... | 126 | 1,186 | — | 1,312 | — | — | 1,084 | 87 | 53 | 141 | 11·9 |

CITY HOSPITAL, SPARROW HALL.

Medical Superintendent, DR. C. RUNDLE.

| DISEASES. | Remaining
Dec., 31st, 1919. | Admitted during
the year. | Transferred
from other
City Hospitals. | Total under
Treatment
during the year. | Transferred
to Convalescent
Hospital. | Transferred
to other City
Hospitals. | Discharged
Cured. | Remaining
at end of year. | Died within 48
hours of admission. | Total Deaths. | Total Mortality
per cent
of Admissions. |
|----------------------|--------------------------------|------------------------------|--|--|---|--|----------------------|------------------------------|---------------------------------------|---------------|---|
| Scarlet Fever..... | — | 2 | 69 | 71 | 1 | — | 47 | 23 | — | — | — |
| Other Diseases | — | 5 | 4 | 9 | — | — | 5 | 4 | — | — | — |
| Total | — | 7 | 73 | 80 | 1 | — | 52 | 27 | — | — | — |

The first admissions took place on November, 6th, 1920.

SANITARY ADMINISTRATION.

The number of occasions upon which the advice and assistance of the Health Department have been sought during the year was 18,730.

The District Sanitary Inspectors visit at the earliest possible moment all premises where a nuisance is complained of, and last year 25,567 nuisances were discovered as the result of complaints. Preliminary notices were served either on the owners or the occupiers to remedy 20,919 nuisances. The remaining 4,648 nuisances came within the province of other departments, and were referred to those departments to be dealt with.

The nuisances for which notices were served, were referred to the Prosecuting Inspectors for re-inspection, and where necessary further proceedings were taken to cause the abatement of the nuisance.

The Inspectors, in the course of house to house inspection, discovered 60,603 nuisances, and preliminary notices were served on the owner or occupier. A number of defects were also referred to other departments.

On re-inspection, the number found not abated was 16,946, and statutory notices were served to remedy them. These were again re-inspected by the District Inspectors, and those found not abated were referred to the Prosecuting Inspectors for further action. In addition, all nuisances found in process of being abated, or to which the District Inspector was unable to gain access for re-inspection, were referred to the Prosecuting Inspectors.

REFERENCES FROM OTHER DEPARTMENTS.

The references from the other departments, numbering 21,649, mainly comprised insanitary conditions discovered by officers belonging to those departments, but with which it is not within their province to deal.

REFERENCES TO OTHER DEPARTMENTS.

The number of matters referred to other departments was 31,215.

The references to the Water Engineer comprise mainly defective fittings, resulting in waste of water; also cases in which the supply was insufficient owing to various causes.

The references to the City Engineer consist principally of choked main drains and street gullies, and defective street and passage pavements; the references to the Building Surveyor concern dangerous walls, floors, roofs, &c.

NOTICES ISSUED.

The number of preliminary notices issued was 38,616, and the number of statutory notices was 18,905.

RE-INSPECTION OF NUISANCES.

The number of nuisances referred to Prosecuting Inspectors for re-inspection was 40,641, and 68,252 visits were paid to re-inspect these nuisances.

There are now 80,000 sanitary ashbins in use in the City, and there are still approximately 8,000 ashpits in the City.

SPECIAL VISITS.

Visits have been made to railway carriages, marine stores, &c.

EXAMINATION OF CELLARS AND CELLAR DWELLINGS

| | |
|---|--------|
| Number of inspections of street cellars | 17,044 |
| „ inspections of court cellars | 662 |
| „ notices issued to cease letting or occupying | 205 |

VISITS AND ENQUIRIES AT INFECTED HOUSES.

| | |
|--|--------|
| Number of visits and re-visits to phthisis cases | 7,295 |
| „ enquiries <i>re</i> suspected smallpox contacts | 16,766 |
| „ enquiries <i>re</i> suspected typhus fever contacts | 2 |
| „ other enquiries | 60 |

The number of children excluded from attending school from houses where infectious sickness existed was 37,463.

SMOKE NUISANCES.

The number of reports of excessive smoke from manufactories was 64, and from steamers in river and docks 44.

OFFENSIVE TRADES.

The number of inspections of premises where offensive trades are carried on was 1,117.

KNACKER'S YARD, CARRUTHERS STREET.

Carcases of diseased horses and cattle are destroyed here under the supervision of an Inspector of the Public Health Department, in specially tested iron pans with covered lids, which have been erected for the purpose. Unsound meat is also destroyed on these premises.

The number of carcases destroyed on account of old age or minor complaints was 1,363.

INSPECTION OF STABLES AND REMOVAL OF MANURE.

Attention has been given to the inspection of stables and the necessity for the frequent removal of manure emphasised.

The number of visits to stables was 4,708, and the number of disinfections of middensteads was 11,436.

The middensteads are sprayed with lime after being emptied.

COURT AND ALLEY EXAMINATION.

The number of inspections of courts and alley was 17,822. The number of closets found dirty but cleansed by Officer's instructions was about 50 per cent. of the total number of closets inspected.

In 1890 there were 2,165 courts and alleys in the City, this number has been reduced to 386, and shows a diminution in 31 years of 1,779 courts and alleys.

**Administration of the Factory and Workshop Act, 1901, in
connection with
FACTORIES, WORKSHOPS, WORKPLACES & HOMEWORK**

The following Tables are prepared by request of the Secretary of State :—

1.—Inspection of Factories Workshops and Workplaces.

Including Inspections made by Sanitary Inspectors or Inspectors of Nuisances.

| Premises. | Number of | | |
|---|--------------|-----------------|---------------|
| | Inspections. | Written Notices | Prosecutions. |
| <i>Factories</i>
(Including Factory Laundries.) | 626 | 119 | — |
| <i>Workshops</i>
(Including Workshop Laundries). | 10,220 | 740 | — |
| <i>Workplaces</i>
(Other than Outworkers' premises in-
cluded in Part 3 of this Report.) | 1,204 | 76 | — |
| TOTAL | 12,050 | 935 | — |

2.—Defects Found in Factories, Workshops and Workplaces.

| Particulars. | Number of Defects. | | | Number
of
Prosecu-
tions. |
|--|--------------------|-----------|-----------------------------------|------------------------------------|
| | Found. | Remedied. | Referred
to H.M.
Inspector. | |
| <i>Nuisances under the Public Health Acts :*</i> | | | | |
| Want of cleanliness | 306 | 306 | — | — |
| Want of ventilation | 1 | 1 | — | — |
| Overcrowding | 1 | 1 | — | — |
| Want of drainage of floors | — | — | — | — |
| Other nuisances | 426 | 426 | — | — |
| Sanitary accommodation— | | | | |
| Insufficient | 25 | 25 | — | — |
| Unsuitable or defective | 297 | 297 | — | — |
| Not separate for sexes | 12 | 12 | — | — |
| <i>Offences under the Factory and Workshop
Acts :—</i> | | | | |
| Illegal occupation of underground
bakehouse (s. 101)... .. | — | — | — | — |
| Breach of special sanitary require-
ments for bakehouses (ss.97 to 100) | 2 | 2 | — | — |
| Other offences
(Excluding offences relating to
outwork which are included in
Part 3 of this Report) | — | — | — | — |
| TOTAL | 1,070 | 1,070 | — | — |

*Including those specified in sections 2, 3, 7 and 8 of the Factory and Workshop Act, 1901, as remediable under the Public Health Acts.

3.—Home Work.

| NATURE OF WORK. | OUTWORKERS' LISTS, SECTION 107. | | | | | | | OUTWORK IN UNWHOLESOME PREMISES, SECTION 108. | | | | OUTWORK IN INFECTED PREMISES, SECTIONS 109, 110. | | | | |
|-------------------------------|---------------------------------|---------------|-------------------|--------|---------------|-----------|-----|---|------|--|------|--|------|------------|------|------|
| | Lists received from Employers. | | | | | | | Prosecutions. | | | | Instances. | | | | |
| | Twice in the year. | | Once in the year. | | a Outworkers. | | | Notices served on Occupiers as to keeping or sending Lists. | | Falling to keep or permit inspection of Lists. | | Falling to send Lists. | | Instances. | | |
| | a Lists. | Con-tractors. | Work-men. | Lists. | Con-tractors. | Work-men. | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | |
| * | | | | | | | | | | | | | | | | |
| Wearing Apparel..... | 386 | 1,196 | 360 | 19 | 48 | 90 | 31 | — | — | — | — | — | — | — | — | |
| Household linen | 4 | 24 | 43 | 1 | — | 3 | 1 | — | — | — | — | — | — | — | — | |
| Curtains, etc. | — | — | 8 | 1 | — | 1 | — | — | — | — | — | — | — | — | — | |
| Furniture, etc. | 2 | 8 | 13 | — | — | — | — | — | — | — | — | — | — | — | — | |
| Electro-Plate | 2 | 16 | — | — | — | — | — | — | — | — | — | — | — | — | — | |
| Brass and brass articles..... | 2 | 10 | — | — | — | — | — | — | — | — | — | — | — | — | — | |
| Umbrellas, etc. | — | 4 | — | — | — | — | — | — | — | — | — | — | — | — | — | |
| Paper Bags, etc. | 2 | 3 | 24 | — | — | — | — | — | — | — | — | — | — | — | — | |
| Feather Sorting | 2 | — | 12 | — | — | — | — | — | — | — | — | — | — | — | — | |
| Total | 400 | 1,261 | 460 | 21 | 48 | 94 | 32 | — | — | — | — | — | — | — | — | |

* Several Employers give out work of more than one of the classes specified in column 1, and subdivide their lists in such a way as to show the number of workers in each class of work, the lists are included among those in column 2 (or 5 as the case may be) against the principal class only, but the outworkers are assigned in columns 3 and 4 (or 6 and 7) into their respective classes.

a The figures in columns 2, 3 and 4 are the total number of lists received from employers who comply strictly with the statutory duty of sending two lists each year and of entries of names of outworkers in those lists. The figures in columns 3 and 4 are (approximately) double of the number of individual outworkers whose names are given, since in the February and August lists of the same employer the same outworker's name is often repeated.

| 4.—Registered Workshops. | | | | 5.—Other Matters. | |
|--|-----|-----|---------|--|---------|
| Workshops on the Register (S. 131) at the end of the year. | | | Number. | Class. | Number. |
| Workshops | ... | ... | ... | Matters notified to H. M. Inspector of Factories:—
Failure to affix Abstract of the Factory and Workshop Acts (S. 133, 1901) | 74 |
| Cooking Kitchens of Restaurants | ... | ... | ... | Action taken in matters referred by H. M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Acts (S. 5, 1901) | 86 |
| Bakehouses | ... | ... | ... | Other... | 86 |
| Total number on Register | | | 4,203 | Underground Bakehouses (S. 101) :—
In use at the end of year | 3 |
| | | | | | 110 |

FACTORY AND WORKSHOP ACT, 1901.

BAKEHOUSES.

The sanitary control of Bakehouses is dealt with under the Factory and Workshop Act and the Public Health Acts.

During the year 2,920 visits were paid to bakehouses.

| | | |
|---|-----|-----|
| Number of Bakehouses on Register, 31st December, 1920 | ... | 704 |
|---|-----|-----|

| | | |
|--|-----|-------|
| „ special visits to Bakehouses on complaints | ... | 63 |
| „ ordinary visits to Bakehouses... | ... | 2,015 |
| „ re-inspections of incorrect premises | ... | 842 |

| | | |
|--------------|-----|-------|
| Total visits | ... | 2,920 |
|--------------|-----|-------|

| | | |
|--|-----|-----|
| „ occasions on which Bakehouses were found incorrect | ... | 690 |
| „ sanitary defects found | ... | 291 |
| „ Notices issued | ... | 267 |

All the above notices were complied with by the owners or occupiers.

The number of visits paid to cooking kitchens of restaurants was 1,204, and 313 kitchens were found incorrect.

SHOPS ACTS, 1912 AND 1913.

During the year 396 complaints have been received, relating principally to the non-closing of shops on the weekly half-holiday.

AMBULANCE AND DISINFECTING STAFF.

There have been 5,888 infectious cases removed by officers of the Ambulance Staff to the hospitals during the year.

The number of rooms stripped or sprayed was 4,400, and the number of rooms disinfected was 34,666. There were also 2,754 Library books disinfected.

The number of articles, consisting of bedding, clothing, etc., disinfected at the Disinfecting Apparatus was 89,345, and the number of articles destroyed was 247, compensation being paid for the latter in conformity with the provisions of the Public Health Act.

DISINFECTION OF BEDDING, CLOTHING, &c.

Two Disinfecting Stations have been established in the City for a number of years, each well equipped to deal with large quantities of material. The North End of the City is served by the Charters Street Station and the South End by the Smithdown Road Station. The Depot in New Bird Street is now disused. When necessary the disinfecting apparatus attached to each of the City Hospitals can be utilised.

EXTERMINATION OF RATS.

A staff of rat-catchers is systematically employed in the destruction of rats.

The number of rats caught within the City was 17,735 (including those caught in sewers). Of this total 3,072 rats were sent to the City Bacteriologist at the University for examination.

The removal of the foul deep ashpit from the rear of dwellings and the substitution of suitable covered galvanized bins, whilst providing a sanitary improvement, has also undoubtedly been a material factor in the removal of rats from the proximity to dwellings.

There are special reasons for a constant campaign against rats in Liverpool. The first is the possibility of the spread of plague, a disease which from time to time is, and will continue to be, brought into the Port. The destruction and damage to valuable property, foodstuffs, etc., by means of rats, further justify the stringent measures taken in Liverpool at all times against these vermin, and the maintenance of the special staffs employed by the Health Committee to effect their extermination. In this connection, the co-operation of warehouse owners, and so forth, is always sought and obtained.

Active methods and measures were continued in the more modern warehouses to render the buildings rat-proof or to diminish harbourage and to make nesting difficult. The risk of infection of a district is gauged by the amount of feeding and harbourage afforded to the rats.

With regard to the methods of trapping, the bird-lime tray is quite as effective as any other method, and in regard to poisons it is difficult to say whether one poison has an advantage over another. Barium carbonate is believed by many to be very effective, and is relatively non-poisonous to domestic animals.

BACTERIOLOGICAL EXAMINATION OF RATS.

During the year, the usual examination of rats for plague infection was carried out (see page 196).

The Health Committee invite the careful attention of Owners and Occupiers of Warehouses and other Premises to the following Memorandum, and their co-operation in the measures suggested for dealing with Rats.

INFECTION is liable to be carried by RATS and is
to be prevented:—

- (1) By wholesale destruction of rats.
- (2) By their exclusion from dwellings, warehouses, and places of business generally, and by the destruction of their haunts and feeding places in the vicinity of dwellings.

Rats gain access to Buildings chiefly:—

- (1) By burrowing through the earth below the flooring;
- (2) Along the course of drainage and other pipes led through main walls in holes which are too large; and
- (3) By badly fitting doors, doors broken at the foot, and other openings on ground floors.

This is to be met:—

- (1) By cementing or asphaltting earthen basements where these are burrowed.
- (2) By packing loosely fitting holes through which drain or other pipes pass;

(3) By refitting doorways, protecting the food if necessary with sheet iron, and by wire-netting openings in basements which cannot otherwise be dealt with. Rat runs in buildings should be discovered and destroyed.

Rats are attracted to buildings in search of food.

Ashpits, collections of garbage, stable yards, &c., afford them food; lumber heaps or disused structures are suitable for nesting.

All household refuse should, as far as possible, be burned by the householder.

The Local Authority rely on the willing co-operation of landlords and householders in these directions, and tenants will forward the work of repression by informing the Sanitary Department of premises which are rat infested.

To Destroy Rats.—Trapping and poisoning are the means most readily available; hunting with dogs, ferrets, or mongoose is practicable in markets, stables, warehouses, &c., but the rat cannot be followed into its burrow. Good cats are serviceable in places where food-stuffs are stored in bulk.

Trapping.—A useful form of trap is a spring trap, baited with ham. Cage traps of various kinds are useful if not too large. They should be handled as little as possible, and with gloved hands to prevent the human scent clinging to the trap and alarming the rat.

Although rats are carriers of disease it is possible that other animals may convey it, and it is therefore undesirable to keep animals unnecessarily as domestic pets.

The following statement shows the number of rats caught and examined or destroyed in the City during the year 1920:—

| | | | |
|--|-----|-----|--------------|
| Number of rats caught in warehouses, stores, etc. | ... | ... | 9,330 |
| „ „ „ sewers | ... | ... | 3,364 |
| „ „ obtained from other sources | ... | ... | 5,041 |
| | | | <hr/> 17,735 |
| Number of rats submitted for bacteriological examination | ... | ... | 3,106 |
| Number of rats destroyed | ... | ... | 14,629 |

PRINCES DOCK AND FORD STREET MORTUARIES.

The total number of bodies deposited at these Mortuaries was 679.

CREMATORIUM.

The Crematorium is situated in Anfield Cemetery, and was opened by the Liverpool Crematorium Company in the year 1896. When the Corporation became the Burial Authority for the City, the administration was taken over in October, 1908, by the Crematorium Sub-Committee.

The number of cremations which have taken place since the opening is shown in the following table:—

| | | | |
|-----------|----|-----------|-------|
| 1896..... | 2 | 1910..... | 37 |
| 1897..... | 10 | 1911..... | 50 |
| 1898..... | 27 | 1912..... | 52 |
| 1899..... | 23 | 1913..... | 66 |
| 1900..... | 40 | 1914..... | 49 |
| 1901..... | 40 | 1915..... | 53 |
| 1902..... | 54 | 1916..... | 58 |
| 1903..... | 35 | 1917..... | 62 |
| 1904..... | 40 | 1918..... | 70 |
| 1905..... | 35 | 1919..... | 88 |
| 1906..... | 46 | 1920..... | 70 |
| 1907..... | 34 | | — |
| 1908..... | 32 | | 1,119 |
| 1909..... | 46 | | — |

CINEMATOGRAPHS.

The premises licensed by the City Justices have been systematically visited throughout the year, 317 visits having been paid. The visits have been mainly at night, but day inspections have also been made.

Special attention has been directed to the ventilation of the auditorium, sanitary convenience and cleanliness, and generally speaking the premises are kept in a satisfactory condition.

The attention of the Managers is constantly directed to the need of the fans being kept in operation during the entertainment, and also as to the necessity for flushing the auditorium by opening the doors during the interval.

COMMON LODGING HOUSES.

In the year 1866 there were 1,278 Common Lodging Houses on the Register. These houses were registered under the Liverpool Sanitary Act, 1844, and the Common Lodging Houses Acts of 1851 and 1853.

Bye-laws were made in 1848 and 1860 to regulate such houses. These bye-laws were repealed in 1869, when new bye-laws were made under powers given by the Common Lodging Houses Acts of 1851 and 1853, and confirmed by the Public Health Act, 1875, Sec. 326, and these remain in force at the present time.

During the year 1867 all Common Lodging Houses not having a separate day room for the use of lodgers, and all houses taking lodgers in and not having this accommodation, were registered as Sub-Let Houses. The cubic space required in Common Lodging Houses was 300 cubic feet per head at that time, as against 400 cubic feet at present.

Further powers to deal with Common Lodging Houses are given under Part 5 of the Public Health Acts Amendment Act, 1907 (adopted in 1912), Sections 69 to 75, particulars of which will be found in the Annual Report for 1913.

The Liverpool Corporation Act, 1913, Section 36 (details of which will be found in the Annual Report for 1913), deals with keepers who induce persons suffering from trachoma or other contagious diseases of the eye to become lodgers in a lodging-house.

The Annual Report for 1913 contains a list showing the number of Common Lodging Houses added to and removed from the Register since 1866.

INSPECTION OF LODGING HOUSES.

| | | | |
|---|-----|-----|-----|
| Lodging-houses on Register, December 31st, 1919 | ... | ... | 209 |
| „ removed from Register during 1920 | ... | ... | 37 |
| „ added to the Register during 1920 | ... | ... | 20 |
| „ on Register, December 31st, 1920 | ... | ... | 192 |

These houses provide accommodation for 7,595 lodgers.

There are 24 houses providing accommodation for 796 women lodgers. For details of Women's Lodging Houses see Reports for the years 1909 and 1914.

| | 1920. |
|---------------------|-------|
| Day visits | 7,635 |
| Night visits | 224 |

There were 286 special visits *re* notified cases of phthisis (included in above).

One information was laid against a keeper for overcrowding, resulting in a fine of 7s.

Under the Public Health Acts Amendment Act, 1907, Sections 69 to 72, 65 keepers were re-registered, and 17 deputy-keepers were registered.

SEAMEN'S LICENSED LODGING-HOUSES.

The Corporation have made Bye-laws, with the sanction of the President of the Board of Trade, for the licensing of Seamen's Lodging Houses, under the Merchant Shipping (Fishing Boats) Act, 1883, Section 48.

Applications from the keepers of Registered Common Lodging Houses for licenses authorising the designation of such Registered Common Lodging Houses as Seamen's Licensed Lodging Houses, are infrequent, only three such licensed houses now being on the register, providing accommodation for 63 seamen.

The number of licenses granted since the adoption of the Seamen's Lodging House Bye-laws is 33.

It has not been found necessary to institute proceedings under the bye-laws in question.

Some years ago the holders of licenses to keep Seamen's Lodging Houses were authorised by the Board of Trade to board vessels and seek for lodgers, and while this privilege was granted there was an advantage

in holding such a license, but that privilege being now withdrawn it does not appear that there is any advantage to the keeper of a Common Lodging House to have his premises registered as a Seamen's Lodging House, hence, probably, the small number upon the register.

LODGING-HOUSES GIVEN UP.

Ten large Lodging-houses, providing accommodation for 500 dock labourers and general labourers, were given up during the year with a view to their conversion into offices, workshops, stockrooms, and for other business purposes. In three instances the houses were sold with vacant possession (the keepers being the owners), and in the other seven instances the keepers had received notices from the respective owners to give up possession of their premisses. They were all dealt with under Section 6 of the Housing (Additional Powers) Act, 1919, and permission to use the premises for any other purposes than as dwelling-houses was refused. For refusing to obey this Order one case, heard in the City Police Court, resulted in a penalty of 20s. being inflicted. Two of the above houses were again registered as Lodging-houses, on application by the owners, four are used as Houses let in Lodgings, two are vacant, and one is used to house members of the Royal Air Force.

Six Chinese Lodging houses occupied by, and providing accommodation for 300, Chinese (cooks, stewards and firemen) were also given up owing to Chinese crews being unable to "sign on" on British ships, and consequently leaving this City. Two of the houses are now used for emigration purposes, two are houses let in lodgings, and one is vacant.

HOUSES LET IN LODGINGS.

(SUB-LET HOUSES.)

The first bye-laws made to deal with these houses were confirmed by the Secretary of State, November, 1866, and were made under powers given by the Liverpool Sanitary Act of 1866, Section 35. Previous to the adoption of these bye-laws overcrowding was dealt with under the Nuisance Removal Act, 1855. These bye-laws were amended in 1869 under the Act of 1866, and further amended in 1885 and 1886 under the Public Health Act of 1875, Section 90.

Bye-laws were made in 1901 requiring 400 cubic feet for each adult person, and 200 cubic feet for every person below ten years of age. Prior to the adoption of these bye-laws the cubic space required for each adult was 350 cubic feet, and two children below ten years of age counted as one person. Powers were also given to deal with the non-separation of sexes in lodgers' rooms, and to enforce the cleansing of stairs and passages used in common.

These bye-laws were repealed in 1911, and new bye-laws were made giving additional powers to deal with the non-separation of sexes in tenants' and lodgers' rooms, overcrowding, and to enforce the cleansing of floors, stairs, and passages.

Powers were also given to enforce the provision of water-closet accommodation (one water-closet for every twelve persons), the lime-washing of walls and ceilings of houses, yards and water-closets at stated intervals.

INSPECTION OF HOUSES LET IN LODGINGS.

| | | | | |
|---|-----|-----|-----|--------|
| Houses on Register, December 31st, 1919 | ... | ... | ... | 14,636 |
| „ removed from Register during 1920 | ... | ... | ... | 6 |
| „ added to Register during 1920 | ... | ... | ... | 450 |
| „ on Register, December 31st, 1920 | ... | ... | ... | 15,080 |

DAY VISITS:

| | | | | | | | |
|---------------------------|-----|-----|-----|-----|-----|-----|---------|
| Day visits | ... | ... | ... | ... | ... | ... | 116,254 |
| Rooms measured | ... | ... | ... | ... | ... | ... | 2,368 |
| Floors found dirty | ... | ... | ... | ... | ... | ... | 463 |
| Stairs and passages dirty | ... | ... | ... | ... | ... | ... | 56 |

Informations were laid for breaches of the bye-laws as follows:—

| | | | | | | |
|--------------------------------|-----|-----|-----|-----|-----|----|
| Not washing floors | ... | ... | ... | ... | ... | 51 |
| Not sweeping floors | ... | ... | ... | ... | ... | 25 |
| Not cleansing stairs, passages | ... | ... | ... | ... | ... | 9 |

NIGHT VISITS:

| | |
|---|--------|
| Night visits | 24,596 |
| Rooms found overcrowded... | 1,361 |
| Cases of overcrowding found | 1,211 |
| Cases of overcrowding abated on re-visit | 467 |
| Informations laid for overcrowding | 89 |
| Convictions for overcrowding | 85 |
| Discharged | 4 |

DETAILS OF OVERCROWDING:

| | |
|---|-----|
| Overcrowding by families occupying 1 room | 286 |
| " " " 2 rooms | 592 |
| " " " 3 or more rooms | 408 |

NON-SEPARATION OF SEXES:

| | |
|---------------------------------|-----|
| Cases found | 273 |
| Cases abated on re-visit | 69 |
| Informations laid | 86 |
| Convictions | 83 |
| Discharged | 3 |

When no information is laid, offending persons are re-visited, cautioned, and instructed how to re-arrange occupants of the rooms, and again re-visited.

CLEANSING OF WALLS AND CEILINGS.

Under Section 7 of the 1911 Bye-laws the following Notices were served and Houses let in lodgings cleansed during the year:—

| | |
|--|-----|
| Preliminary notices to cleanse walls and ceilings | 71 |
| Statutory notices | 5 |
| Comply notes | 1 |
| Houses cleansed | 61 |
| Rooms cleansed | 350 |
| Notices standing over at end of year... .. | 4 |

The following table shows the number of Houses let in Lodgings on the Register, together with the number of visits for the prevention of overcrowding for the past 20 years:—

| Year. | No. of Houses let in Lodgings on Register. | No. of night visits for prevention of overcrowding. | No. of convictions for overcrowding. | Percentage of convictions to number of visits. |
|-------------------|--|---|--------------------------------------|--|
| 1901 | 18,917 | 17,863 | 1,351 | 7.56 |
| ¹ 1902 | 19,976 | 17,274 | 1,150 | 6.65 |
| 1903 | 21,719 | 18,439 | 1,264 | 6.85 |
| 1904 | 22,401 | 17,886 | 1,148 | 6.41 |
| ² 1905 | 20,518 | 19,193 | 1,326 | 6.90 |
| 1906 | 19,714 | 18,838 | 920 | 4.88 |
| 1907 | 19,832 | 22,982 | 962 | 4.18 |
| 1908 | 19,776 | 23,074 | 738 | 3.19 |
| 1909 | 19,654 | 23,534 | 576 | 2.44 |
| 1910 | 19,436 | 23,273 | 414 | 1.77 |
| 1911 | 18,873 | 21,788 | 526 | 2.41 |
| 1912 | 16,475 | 22,173 | 612 | 2.76 |
| ³ 1913 | 16,405 | 22,938 | 660 | 2.87 |
| 1914 | 16,492 | 24,309 | 693 | 2.85 |
| 1915 | 16,626 | 21,659 | 595 | 2.74 |
| 1916 | 16,827 | 22,199 | 636 | 2.86 |
| 1917 | 16,635 | 21,746 | 508 | 2.33 |
| 1918 | 16,870 | 19,524 | 220 | 1.12 |
| 1919 | 14,636 | 23,350 | 191 | 0.81 |
| 1920 | 15,080 | 24,596 | 85 | 0.34 |

¹ Garston included in the City.

² Fazakerley do.

³ Woolton, Allerton and Childwall included in the City.

CANAL BOATS ACTS, 1877 and 1884.

The Leeds and Liverpool Canal Company are the proprietors of the only canal having direct communication with Liverpool, and the length of the waterway within the City, exclusive of locks which lead to the docks, is about three miles.

The number of inspections of canal boats during the year was 4,396, and the condition of the boats and their occupants as regards matters dealt with in the Acts and Regulations is indicated in the following information:—

| | |
|--|-----|
| Boats on Register | 429 |
| „ regularly plying on Canal | 385 |
| „ unable to trace | 44 |
| „ taken off Register | 30 |
| New boats registered | 4 |
| Boats re-registered on account of change of owners ... | 3 |
| Boats re-registered on account of change of name of boat | 1 |
| Copies of certificates of registration re-issued ... | 3 |
| Boats on which contraventions occurred | 67* |
| Nature of contraventions— | |
| Unregistered boats used as dwellings... .. | 2 |
| No certificate of registration on board | 5 |
| Registered lettering, &c., not legible | 5 |
| Defective bulkheads | 2 |
| Leaky decks | 35 |
| Defective ventilation | 2 |
| „ stoves | 4 |
| „ locker | 1 |
| Cabins requiring re-painting | 21 |
| Cabins dirty | 3 |
| Cabin indecently occupied | 1 |
| No water cask | 4 |

Written notices were issued to Owners in 64 instances.

Verbal notice given to Owner in 1 instance.

Verbal notices given to Masters in 2 instances.

* Of this number 29 were registered by other Authorities.

No informations were laid during the year against Owners or Masters for infringements of the Acts and Regulations.

No cases of infectious sickness were reported as having occurred during the year on any canal boat visiting the district.

There are no motor-propelled boats registered by this Authority.

DETAILS OF VISITS TO CANAL BOATS FOUND ON CANAL.

Four hundred and forty-three boats found plying on the Canal were visited. These boats are registered as follows:—

365 boats are registered at Liverpool.

| | | | |
|----|---|---|-------------|
| 23 | „ | „ | Runcorn. |
| 14 | „ | „ | Leigh. |
| 11 | „ | „ | Wigan. |
| 9 | „ | „ | Manchester. |
| 8 | „ | „ | Chester. |
| 5 | „ | „ | Blackburn. |
| 3 | „ | „ | Burnley. |
| 3 | „ | „ | Northwich. |
| 2 | „ | „ | Widnes. |

443

All of these boats are “Wide” boats—161 of these being propelled by steam, or being steam-towed, and the remainder horse drawn.

The number of inspections of these 443 boats was 3,746, and on two of them only were found families who had no other home except the boat, viz.:—

The boat “Isa,” registered at Blackburn, No. 23, which is used as a dwelling by the Master and his wife, and the boat “Douglas,” registered at Leigh, No. 305, which is used as a dwelling by the Mate and his wife, the Master having a home ashore. The population of these 443 boats was as follows:—

| | | | |
|----------|-----|-----|-----|
| Men | ... | ... | 684 |
| Women | ... | ... | 157 |
| Children | ... | ... | 81 |

Total ... 922 persons, detailed as follows:—

| Sex and Age. | Having no home except the boat. | With home on shore in addition to boat. | Total. |
|---------------------------------|---------------------------------|---|--------|
| Males over 14 years of age ... | 2 | 682 | 684 |
| Females over 12 years of age... | 2 | 155 | 157 |
| Children 0 to 4 " " | ... | 71 | 81 |
| " 5 to 12 " " | ... | 10 | |
| | 4 | 918 | 922 |

NOTE.—Males on attaining the age of 14 years, and females 12 years, living on Canal Boats become adults and are recorded as such in the above Table (Regulation III, Section 2, Canal Boats Act, 1877).

Only 10 children of school age were found on Canal Boats during the year, and these were found during the school holidays, and were on trips with their parents.

In 1898 the Canal Boat Inspectors were appointed as Port Sanitary Inspectors—an appointment which authorised them to inspect all classes of boats—as a difficulty arose in connection with certain boats plying upon the canal which were not registered under the Canal Boats Acts, but which had been registered by the Board of Trade under the Merchant Shipping Acts. Sixty-four visits were made to boats of this class, and all were found correct.

In 1903 the Port Sanitary Inspectors were appointed as Canal Boat Inspectors. This appointment authorised them to inspect canal boats which ply to and from the docks and on the river. During the year, 650 visits were made by these Inspectors, and they are included in the foregoing total. The number of contraventions for which written notices were served on the owners was 45 in connection with 37 boats.

SUPERVISION OF FOOD SUPPLIES.

The supervision of food stuffs intended for human consumption in the City as regards disease and soundness has been carried out with care during the year.

In the early part of 1921, the inspection of Meat, Fish, Fruit, etc., and the supervision of the Inspectors appointed under the Contagious Diseases of Animals Acts were brought under the direction of a Chief Food Inspector. This system has already proved to be very valuable, duplication of work has been avoided and much time has been saved, resulting in a more efficient system of Food Inspection in the City.

PUBLIC ABATTOIRS.

The position in regard to the slaughtering of animals is practically the same as at the close of last year. The Public Abattoir and the associated offensive trades remain in the condition which has been so frequently commented upon. Every effort is made to palliate the nuisances inseparable from the conduct of businesses of this kind in situations which are cramped, confined, insanitary and entirely unsuitable for the slaughtering, dressing and selling of animals for human food. The roofs of the present abattoir have been repaired, and the floors patched, but no amount of repairing can make the building a suitable abattoir; the only remedy lies in the erection of a Modern Abattoir and Meat Market with Refrigerators appropriate for a City so far advanced in other Public Health work. The lack of Refrigerators at the Abattoir has been the cause of Meat and Offal being condemned and destroyed on account of decomposition.

MEAT INSPECTION AT THE ABATTOIR.

Meat Inspection at the Abattoir has under the new system of management been made very thorough, there being now five Inspectors on duty during the busy hours in the Market and one whole-time and one part-time Inspector throughout the day.

The following tables show the quantities of foodstuffs dealt with during the year, viz. :—

SLAUGHTER HOUSES.

| | | 1914 | Jan. 1920 | Dec. 1920 |
|------------|-----|----------------|--------------------------------|--------------------------------|
| Registered | ... | 5 Cattle S.H. | 5 Cattle S.H. | 5 Cattle S.H. |
| Licensed | ... | 13 Cattle S.H. | 12 Cattle S.H.
2 Horse S.H. | 12 Cattle S.H.
2 Horse S.H. |

ANIMALS SLAUGHTERED FOR HUMAN FOOD IN THE CITY.

| | | Cattle. | Calves. | Sheep. | Lambs. | Swine. | Goats. | Horses. |
|--------------------------|--------|---------|---------|--------|--------|--------|--------|---------|
| Public Abattoir | ... | 30,594 | 28,755 | 53,017 | 82,845 | 8,760 | 20 | — |
| Private Slaughter-Houses | ... .. | 369 | 1,461 | 1,149 | 3,444 | 10,226 | — | 1,648 |
| TOTAL | ... .. | 30,963 | 30,216 | 54,166 | 86,289 | 18,986 | 20 | 1,648 |

IMPORTED MEAT SOLD IN MEAT MARKETS.

| | | Cattle. | Calves. | Sheep. | Lambs. | Swine. |
|---|--------|---------|---------|---------|---------|--------|
| Abattoir (Irish and Birkenhead dressed) | | 3,492 | 2,093 | 10,758 | 8,762 | 2,772 |
| Gill Street (Imported meat) | ... .. | 33,219 | — | 322,460 | 169,864 | 4,001 |
| Copperas Hill (Imported pigs) | ... .. | — | — | — | — | 1,100 |
| TOTAL | ... .. | 36,711 | 2,093 | 333,218 | 178,626 | 7,873 |

IMPORTED MEAT AND OFFAL SOLD IN BOXES AND BAGS.

| | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|--------|
| Abattoir (Irish and Birkenhead dressed) ... | ... | ... | ... | ... | ... | ... | 6,760 |
| Gill Street (Imported) ... | ... | ... | ... | ... | ... | ... | 40,344 |
| TOTAL (Boxes and bags) ... | | | | | | | 47,104 |

During the year 5,020 Fat Cows from cowsheds in the City were slaughtered at the Public Abattoir with the following result:—

| Cows slaughtered. | Totally
Condemned. | Partially
Condemned. | Number affected with
Tuberculosis. |
|-------------------|-----------------------|-------------------------|---------------------------------------|
| 5,020 | 80 | 43 | 92 |

The following Carcases and Parts were seized or surrendered for various causes:—

| CATTLE. | | Calves. | Sheep. | Swine. | Goats. | Horses. |
|-----------|--------|---------|--------|--------|--------|---------|
| Carcases. | Parts. | | | | | |
| 437 | 622 | 203 | 756 | 79 | 8 | 144 |

DISEASES AND OTHER CAUSES FOR WHICH ANIMALS WERE SEIZED OR
SURRENDERED.

| Cause of
Condemnation. | Cattle. | | Calves. | Sheep. | Swine. | Goats. | Horses. |
|---------------------------|------------|------------|------------|------------|-----------|----------|------------|
| | Carcases. | Parts. | | | | | |
| Tuberculosis | 335 | 228 | 10 | — | 17 | — | — |
| Emaciation | 34 | — | 62 | 138 | 22 | 6 | 78 |
| Oedema | 28 | — | 21 | 74 | 1 | 2 | 39 |
| Abscesses | 1 | — | — | 1 | — | — | 5 |
| Pneumonia | — | — | — | — | — | — | 1 |
| Inflammation | 22 | — | 9 | 30 | — | — | 19 |
| Septic Metritis | 2 | — | — | — | — | — | — |
| Arthritis | 5 | — | 5 | — | 1 | — | 1 |
| Enteritis | 2 | — | — | — | — | — | — |
| Peritonitis | 1 | — | — | — | — | — | — |
| Suffocation | 2 | — | 46 | 71 | 9 | — | — |
| Jaundice | — | — | 7 | — | — | — | — |
| Joint Ills | — | — | 1 | — | — | — | — |
| Distomatosis | — | — | — | 2 | — | — | — |
| Decomposition | 5 | 357 | 35 | 318 | 22 | — | 1 |
| Mould, Black Spot, etc. | — | — | — | 20 | — | — | — |
| Injury | — | 37 | 3 | 97 | 5 | — | — |
| Immaturity | — | — | 4 | 5 | 2 | — | — |
| TOTAL | 437 | 622 | 203 | 756 | 79 | 8 | 144 |

The following Table shows from which district tubercular cattle, calves, or swine came to Liverpool:—

| | Cattle. | Calves. | Swine. | TOTAL. |
|------------------------|------------|-----------|-----------|------------|
| Liverpool | 92 | — | 4 | 96 |
| Beeston | 10 | 2 | 1 | 13 |
| Bootle | 14 | — | — | 14 |
| Chester | 13 | — | — | 13 |
| Isle of Man | 21 | — | 2 | 23 |
| Ireland | 71 | 2 | 1 | 74 |
| Malpas | 15 | — | — | 15 |
| Middlewich | 17 | 2 | — | 19 |
| Preston | 11 | 1 | — | 12 |
| Other districts | 70 | 3 | 9 | 82 |
| TOTAL | 334 | 10 | 17 | 361 |

In all cases where animals from local cowsheds were slaughtered and found to be tubercular disinfection of the stall was immediately carried out under the supervision of the Inspectors.

ANIMALS SENT TO KNACKERS YARD FOR DESTRUCTION.

| Horses destroyed. | Horses brought in dead. | Asses destroyed. | Cows destroyed. | Other beasts destroyed. |
|-------------------|-------------------------|------------------|-----------------|-------------------------|
| 94 | 1,162 | 24 | 77 | 6 |

QUANTITIES OF FISH WHICH PASSED THROUGH THE WHOLESALE
FISH MARKET.

| Wet fish. | Salt fish. | Dry fish. | Smoked fish. | Shell fish. |
|-------------|------------|-------------|--------------|-------------|
| 20,025 tons | 2,365 tons | 3,756½ tons | 3,357 tons | 2,080 tons |

VEGETABLE MARKETS.

56,860 tons of vegetables passed through the Markets.

FOOD STUFFS CONDEMNED.

The following articles were condemned as unfit for human food, viz.: Wet Fish and Dry Fish, 631,291 lbs.; Mussels, Winkles and Oysters, 627 bags; Crabs and Lobsters, 3,549 lbs.; Poultry, 4,989 head; Game, 205 head; Rabbits, 63,121 head; Hares, 44 head; Cheese, 18,753 lbs.; Eggs, 221,815; Tins of food, 23,314; Fruit, 354,373 lbs.; Vegetables, 283,617 lbs.; Beef, Mutton and Lamb, Veal, Port, etc., 243 tons, 4 cwts., 3 qrs., 12 lbs.

PREMISES VISITED BY THE FOOD INSPECTORS.

| Slaughter houses. | Butchers' shops. | Fish & Fruit shops. | Fruit shops. | Food Hawkers' premises. | Jam factories. | Pickle factories. | Food factories. | Knackers yards. |
|-------------------|------------------|---------------------|--------------|-------------------------|----------------|-------------------|-----------------|-----------------|
| 5,722 | 54,756 | 30,732 | 42,197 | 3,202 | 96 | 91 | 2,051 | 306 |

COWSHEDS AND COWS INSPECTED BY THE FOOD INSPECTORS.

| Cowsheds visited. | Cows examined. | Found healthy. | Found unhealthy. | Number reported for Veterinary examination. |
|-------------------|----------------|----------------|------------------|---|
| 1,076 | 12,832* | 12,774 | 58 | 58 |

*These examinations were of a preliminary character, and where abnormality was discovered, the matter was reported to the Veterinary superintendent.

Forty samples of Food-stuffs were obtained for bacteriological examination.

ANIMALS TRANSIT AND GENERAL ORDER, 1912.

Regulations are made under this Order for the carriage of animals in properly constructed vehicles and with due regard to the comfort of the animals, by feeding and watering at regular intervals, and not overcrowding, care in loading and unloading, and the cleansing of pens, trucks, boxes, etc., after use.

FOREIGN ANIMALS ORDER, 1910.

This Order applies to the landing of animals from abroad, also to the landing of manure and fittings at wharves without permission.

Under the above Orders and local Bye-laws affecting Lairages and Saleyards the following inspections were made:—

Number of Cattle Pens inspected, 50,972.

Number of Cattle Trucks inspected, 18,838.

Number of Horse Boxes inspected, 2,744.

Number of Vessels inspected, 4,231.

Number of Gangways inspected, 1,984.

Number of Lairages and Saleyards inspected, 3,329.

Number of Railway Stations visited, 2,715.

SWINE FEVER ORDERS OF 1908-1917.

Under these Orders the movements of swine are regulated and provision made for the cleansing of carts, etc., used for the conveyance of swine.

The number of Carts, used to convey pigs, inspected was 51.

CONVEYANCE OF LIVE POULTRY ORDER OF 1919.

This Order provides for the proper conveyance of poultry (live) in suitable crates, the prevention of overcrowding, and the cleansing of crates.

It has been necessary to lay nine informations for infringements of this Order, and four of the offenders were convicted and fined, the remaining five cases being either dismissed or withdrawn.

The number of Crates of Live Poultry inspected was 5,924.

HORSES IMPORTATION AND TRANSIT ORDER, 1913.

This Order deals specially with horses and ensures that all horses in transit are in a fit state of health to travel.

The number of Horses inspected was 2,226. In addition, 2,498 visits were made to manure yards and wharves.

PROSECUTIONS UNDER SECTION 117, PUBLIC HEALTH ACT,

1875

It was only necessary to prosecute in one instance for the sale of unsound meat during the year. The vendor was convicted and fined £20.

Under the Food Control Orders there were five cases heard in the Police Courts, and fines amounting to £119 12s. 6d. were inflicted.

FOOD POISONING.

The following suspected cases of food-poisoning came under observation during the year:—

(1) In the first week in January, three cases of illness with vomiting and diarrhœa occurred amongst members of one family, one of the patients died.

An examination of the stomach and bowel contents showed no evidence of bacterial food-poisoning organisms, although the clinical and post-mortem appearances indicated such a cause of death.

(2) In the same month six persons partook of a meal which included a portion of a ham. This was boiled with cabbage and potatoes. There was no unusual taste noticed; the symptoms were mainly vomiting, colic, and diarrhœa and giddiness.

One of the patients, who was very ill and unconscious, was removed to hospital. He ultimately recovered.

The City Analyst reported the presence of Ptomatropine in the vomited material.

(3) In the beginning of July another case of food-poisoning was reported, in which five persons of the same family were affected with vomiting, diarrhœa and passage of slight traces of blood.

No particular food could be implicated. The commonest food-poisoning *Bacillus aertrycke* (*B. suispestifer*) was isolated from the intestines.

About the same time cases were brought to our notice which had been admitted to Walton Institution from Seaforth. There were six cases in this family with two deaths. The *Bacillus* Morgan I. was isolated from the intestines of two of the children. This organism was isolated by Morgan from 63 per cent. of cases of summer diarrhoea.

DAIRIES, COWSHEDS AND MILKSHOPS.

There is no change in the method of procedure respecting the licensing of cowsheds and the registration of dairies, milkshops and milkstores.

STATISTICS RESPECTING COWSHEDS.

| | <u>1920</u> |
|--|-------------|
| Number of applications to keep cows on premises not previously licensed | 7 |
| „ „ granted | 6 |
| „ „ in abeyance | 1 |
| „ cows applied for | 101 |
| „ „ granted | 61 |
| „ applications for transfer to fresh tenants of cowsheds previously licensed ... | 26 |
| „ „ granted | 26 |
| „ „ for additional stock | 1 |
| „ Cowsheds on the register 31st December, 1919... | 323 |
| „ „ „ „ 1920... | 295 |
| „ cows licensed to be kept within the city area ... | 4,942 |

COWSHED INSPECTION.

| | <u>1919.</u> | <u>1920.</u> |
|--|--------------|--------------|
| Nnnumber of inspections of Cowsheds | 2,806 | 3,147 |
| „ found incorrect | 60 | 45 |

Forty notices were issued to occupiers directing their attention to minor contraventions of regulations.

The number of cowsheds in the City during the years 1911 to 1920, inclusive, together with the number of cows licensed to be kept, and the number of applications for new cowsheds are shown in the following table:—

| Years | | Cowsheds | | Cows | | Applications. |
|-------|-----|----------|-----|-------|-----|---------------|
| 1911 | ... | 436 | ... | 6,428 | ... | 0 |
| 1912 | ... | 432 | ... | 6,589 | ... | 3 |
| 1913 | ... | 415 | ... | 6,431 | ... | 4 |
| 1914 | ... | 429 | ... | 6,734 | ... | 21 |
| 1915 | ... | 423 | ... | 6,460 | ... | 7 |
| 1916 | ... | 383 | ... | 6,013 | ... | 8 |
| 1917 | ... | 393 | ... | 6,516 | ... | 3 |
| 1918 | ... | 339 | ... | 5,487 | ... | 1 |
| 1919 | ... | 323 | ... | 5,228 | ... | 2 |
| 1920 | ... | 295 | ... | 4,942 | ... | 7 |

MILKSHOPS.

| | | | | 1919. | 1920. |
|--|-----|-----|-----|-------|-------|
| Number of applications for registration | ... | ... | ... | 76* | 62* |
| „ „ granted | ... | ... | ... | 70 | 60 |
| „ „ withdrawn | ... | ... | ... | 2 | 2 |
| „ „ in abeyance | ... | ... | ... | 2 | — |
| „ „ refused | ... | ... | ... | 2 | — |
| Number of Milkshops on the register at the end of 1916 | ... | | | | 794 |
| „ „ „ „ „ | | | | 1917 | 740 |
| „ „ „ „ „ | | | | 1918 | 720 |
| „ „ „ „ „ | | | | 1919 | 670 |
| „ „ „ „ „ | | | | 1920 | 655 |

* Forty-four of these applications were transfers.

DAIRIES AND MILKSHOPS.

| | | <u>1919.</u> | <u>1920.</u> |
|--|--------|--------------|--------------|
| Number of Inspections of Dairies and Milkshops | ... | 5,555 | 5,972 |
| „ found incorrect | ... .. | 6 | 22 |

Twenty-nine caution notices were issued to occupiers of milkshops, and two notices were sent to farmers for minor contraventions of the Regulations.

ICE CREAM MAKERS AND VENDORS.

The usual inspections have been made of the premises utilised by street traders solely for manufacturing ice-cream.

The dwellings which these street traders occupy have also been kept under observation, and in no instance during the past year has it been found that ice-cream has been made or stored in or about these dwellings.

A systematic inspection has also been made of shopkeepers' premises which are used for the manufacture or sale of ice-cream.

| | | <u>1919.</u> | <u>1920.</u> |
|-------------------------------------|--------|--------------|--------------|
| Number of premises under inspection | ... .. | 1,020 | 1,002 |
| „ visits made | ... .. | 2,183 | 2,382 |
| „ caution notices issued | ... .. | 7 | 5 |

PIGGERIES.

During the year special attention has been given to the keeping of pigs on suitable premises in continuation of the policy adopted with a view to the encouragement of food production as recommended by the Order in Council dated 10th January, 1917.

At the beginning of 1917 there were 136 piggeries licensed to keep 1,760 pigs. There are now 167 piggeries licensed to keep 2,901, an increase of 1,141 pigs during the past four years.

In 1920, 38 applications involving the keeping of 578 pigs were made; 36 of these applications were granted and 2 refused. 906 inspections were made during the year.

TUBERCULOSIS AND THE MILK SUPPLY.

LIVERPOOL CORPORATION ACT, 1900.

The examination of cows and cowsheds within the City has been duly carried on throughout the year, and all cases of sickness found by the Leavelookers reported to the Veterinary Department. In cases where the cows are reported to be suffering from any disease of the udder, the Medical Officer of Health directs that the animal be submitted to veterinary examination, and if it is found to be affected with disease likely to be inimical to the public health, the milk supply from the affected cow is stopped.

Apart from notifications, the Veterinary Department have submitted a great number of cows in the town to inspection.

The following is a table showing the number of visits made by the Veterinary Inspectors to cowsheds within the City boundary:—

| YEAR. | No. of Visits to Town Cowsheds. | No. of Cases notified by Owners. | Other Visits. | No. of Cows examined. | No. of Cows Suspicious of Tuberculosis of the Udder. | No. of Convictions for Offences under the Act. |
|--------------|---------------------------------|----------------------------------|---------------|-----------------------|--|--|
| 1916 | 216 | 22 | 194 | 3232 | 11 | — |
| 1917 | 64 | 11 | 53 | 896 | 2 | — |
| 1918 | 105 | 2 | 103 | 1570 | 2 | — |
| 1919 | 72 | 14 | 58 | 867 | 2 | — |
| 1920 | 67 | 11 | 56 | 934 | 6 | — |
| Totals | 524 | 60 | 464 | 7499 | 23 | — |

It has been necessary during the routine examination for the Veterinary Inspectors to take 55 samples of milk for bacteriological examination; 37 of these were control samples and 18 were direct. Of the control samples 5 were proved tubercular and 32 non-tubercular. Of the direct samples 6 were proved tubercular and 12 non-tubercular.

All the above figures are included in the table of samples submitted for bacteriological examination within the City.

MILK SUPPLIED FROM OUTSIDE THE CITY BOUNDARIES.

Under the Liverpool Corporation Act, 1900, Inspectors systematically visit various places supplied with milk from the country, including the railway stations and hospitals, and there take samples. These samples are then submitted to bacteriological examination. Should they be found to contain tubercle bacilli the Veterinary Superintendent, or his assistant, accompanied by the Medical Officer of Health or his representative, and furnished with an order signed by a magistrate resident within the county from which the milk is consigned (as prescribed by the Act), visit the farm or dairy and examine the stock therein.

The following table shows the number of visits to farms outside the City boundary during the past 5 years: —

| No. | No. of Farms Visited. | No. of Re-Visits to Farms. | Total No. of Visits to Farms. | No. of Cowsheds Examined. | No. of Cows Examined. | No. of Cows Suspicious of Tuberculosis of the Udder. | No. of Convictions for Offences under the Act. | No. of Orders Prohibiting the Sale of Contaminated Milk within the City. |
|-----|-----------------------|----------------------------|-------------------------------|---------------------------|-----------------------|--|--|--|
| 6 | 22 | 14 | 36 | 68 | 1395 | 5 | — | — |
| 7 | 17 | 2 | 19 | 53 | 898 | 10 | — | — |
| 8 | 6 | 5 | 11 | 14 | 449 | 9 | — | — |
| 9 | 6 | — | 6 | 14 | 312 | 1 | — | — |
| 10 | 23 | 4 | 27 | 48 | 1225 | 4 | — | — |
| ... | 74 | 21 | 99 | 197 | 4279 | 29 | — | — |

During the examination of cattle outside the City, it has been necessary for the Veterinary Department to take 81 samples of milk for bacteriological examination. Of these, 50 were control samples and 31 were direct samples. Of the control samples, 4 were proved tubercular and the remainder non-tubercular. Of the direct samples, 4 proved tubercular and the remainder non-tubercular.

BACTERIOLOGICAL EXAMINATION OF MILK.

From January, 1901, to December, 1920, 7,582 samples of Milk from sources outside the City were submitted for Bacteriological examination, and 442 of the samples were found to be contaminated by tubercle bacilli, this being equal to 5·8 per cent.

All the farms from which the contaminated milk was supplied (209 in number) were visited and the herds examined, the total number of cows being 16,106. 161 cows were regarded as "suspicious," and the farmers were requested to isolate these animals pending a report of the City Bacteriologist on samples of milk taken direct; 291 samples were taken in this way and 55 were reported by the City Bacteriologist to contain tubercle bacilli. In several instances the emaciated condition of the animal was such as to justify immediate slaughter. "Control" samples were also taken, and the examination of these samples generally proved that the remainder of the herds were healthy.

In the earlier years of the operation of the Liverpool Corporation Act, 1900, the action of the Health Committee in regard to the examination of cattle and farms outside the City area was in many cases resented by the farmers concerned, and it became necessary for the Committee to make Orders prohibiting the sending of milk from certain farms into Liverpool. Twenty-three such Orders were made. Twenty-seven convictions were also obtained against farmers, whose premises were outside the City, for failing to notify the Medical Officer of Health of the existence of "suspicious" animals amongst their herds.

As a general rule, when first visiting these country cowsheds, it was found that very little inspection was done by the Rural Authorities, and the cowsheds were devoid of light, ventilation and drainage, the floors were badly paved and covered with filth, the walls and ceilings were extremely dirty and rarely, if ever, limewashed. In some instances the cubic capacity per cow was as low as 200 feet.

During latter years a much better condition has been found, and it is evident that the Rural Authorities are becoming more alive to the necessity for close attention to the sanitation of cowsheds. There can be little doubt that the action of such large milk-consuming centres as Manchester, Sheffield, Liverpool, &c., has been instrumental in bringing about more activity in regard to these matters in country districts.

During the same period 4,289 samples of milk from town cowkeepers were submitted for Bacteriological examination, and 127 of the samples were found to be contaminated by tubercle bacilli, this being equal to 2.9 per cent.

Owing to the neglect to notify the Medical Officer of Health that they had in their dairy a cow "suspicious" of tuberculosis of the udder, it was found necessary up to the year 1905 to prosecute 21 cowkeepers. Since that time the requirements of the Act have been more closely observed.

The accompanying tables give detailed particulars relating to the samples taken and result of examination, together with the number of cows examined:—

MILK SUPPLY.

DETAILED TABLE RELATING TO COUNTRY SAMPLES.

| Y ^R AR. | Samples from Bulk | | FARMS. | | Cows suspicious. | Samples direct from individual cows at farm. | | Orders prohibiting the sale of Contaminated Milk within the City. | No. of Convictions for offences under the Act. |
|--------------------|-------------------|-------|-----------------|----------------|------------------|--|-------|---|--|
| | No. | T. B. | Farms Affected. | Cows examined. | | No. | T. B. | | |
| 1901 | 297 | 18 | 12 | 351 | 20 | 15 | 2 | 4 | 1 |
| 1902 | 352 | 26 | 17 | 760 | 18 | 30 | 6 | 3 | 3 |
| 1903 | 344 | 18 | 12 | 364 | 10 | 7 | 1 | 2 | 1 |
| 1904 | 354 | 33 | 17 | 604 | 19 | 16 | 4 | 5 | 4 |
| 1905 | 338 | 13 | 9 | 266 | 9 | 10 | 1 | 1 | 6 |
| 1906 | 307 | 21 | 14 | 391 | 10 | 14 | 1 | 1 | 1 |
| 1907 | 352 | 12 | 9 | 462 | 7 | 5 | 2 | 1 | 3 |
| 1908 | 267 | 9 | 5 | 568 | 5 | 5 | 1 | 1 | — |
| 1909 | 333 | 6 | 6 | 1,153 | 6 | 8 | 4 | — | 1 |
| 1910 | 318 | 13 | 9 | 871 | 4 | 5 | 2 | 1 | 2 |
| 1911 | 336 | 15 | 7 | 1,365 | 3 | 10 | 3 | 1 | 2 |
| 1912 | 342 | 20 | 7 | 1,121 | 4 | 14 | 6 | 2 | — |
| 1913 | 412 | 28 | 13 | 784 | 4 | 14 | 2 | — | — |
| 1914 | 452 | 42 | 17 | 1,302 | 6 | 47 | 6 | — | — |
| 1915 | 419 | 30 | 4 | 1,265 | 3 | 16 | 3 | — | — |
| 1916 | 439 | 22 | 10 | 1,395 | 5 | 30 | 1 | — | — |
| 1917 | 387 | 20 | 11 | 898 | 10 | 18 | 3 | — | — |
| 1918 | 387 | 14 | 6 | 449 | 9 | 10 | 2 | — | — |
| 1919 | 346 | 26 | 6 | 312 | 1 | 3 | 1 | — | — |
| 1920 | 800 | 56 | 18 | 1,225 | 8 | 14 | 4 | — | — |
| TOTAL ... | 7,582 | 442 | 209 | 16,106 | 161 | 291 | 55 | 23 | 27 |

MILK SUPPLY.

DETAILED TABLE RELATING TO TOWN SAMPLES.

| YEAR. | SAMPLES. | | COWSHEDS. | | Number of Convictions for Offences under the Act. |
|-----------|---------------|------|----------------|------------------|---|
| | Number taken. | T.B. | Cows examined. | Cows suspicious. | |
| 1901 | 254 | 2 | 59 | 27 | — |
| 1902 | 213 | 1 | 13 | 6 | 1 |
| 1903 | 230 | 2 | 121 | 24 | 7 |
| 1904 | 198 | 3 | 665 | 70 | 12 |
| 1905 | 204 | 1 | 298 | 57 | 1 |
| 1906 | 209 | 3 | 225 | 14 | — |
| 1907 | 190 | 4 | 238 | 3 | — |
| 1908 | 247 | 5 | 255 | 3 | — |
| 1909 | 247 | — | 203 | 3 | — |
| 1910 | 282 | 4 | 189 | 1 | — |
| 1911 | 312 | 3 | 215 | 2 | — |
| 1912 | 225 | 9 | 1,755 | 17 | — |
| 1913 | 238 | 18 | 4,732 | 18 | — |
| 1914 | 206 | 11 | 4,043 | 21 | — |
| 1915 | 261 | 14 | 1,781 | 15 | — |
| 1916 | 147 | 5 | 3,232 | 11 | — |
| 1917 | 128 | 9 | 896 | 2 | — |
| 1918 | 113 | 12 | 1,570 | 2 | — |
| 1919 | 163 | 4 | 867 | 2 | — |
| 1920 | 222 | 17 | 934 | 6 | — |
| TOTAL ... | 4,289 | 127 | 22,291 | 304 | 21 |

TABLES SHEWING NUMBER OF SAMPLES OF MILK TAKEN—
NUMBER FOUND TUBERCULAR, AND PERCENTAGE
OF FIVE PERIODS OF FOUR YEARS EACH.

TOWN SAMPLES.

| Period. | Number taken. | Number tubercular. | % |
|--------------------|---------------|--------------------|-----|
| 1901 to 1904 | 895 | 8 | 0·8 |
| 1905 to 1908 | 850 | 13 | 1·5 |
| 1909 to 1912 | 1,066 | 16 | 1·4 |
| 1913 to 1916 | 852 | 48 | 5·6 |
| 1917 to 1920 | 626 | 42 | 6·7 |
| TOTAL | 4,289 | 127 | 2·9 |

COUNTRY SAMPLES.

| Period. | Number taken. | Number tubercular. | % |
|--------------------|---------------|--------------------|-----|
| 1901 to 1904 | 1,347 | 95 | 7·0 |
| 1905 to 1908 | 1,264 | 55 | 4·3 |
| 1909 to 1912 | 1,329 | 54 | 4·0 |
| 1913 to 1916 | 1,722 | 122 | 7·0 |
| 1917 to 1920 | 1,920 | 116 | 6·0 |
| TOTAL | 7,582 | 442 | 5·8 |

DETAILS OF SAMPLES OF MILK OBTAINED FOR CHEMICAL ANALYSIS.

| | <u>1919.</u> | <u>1920.</u> |
|---|--------------|--------------|
| Number of samples purchased on week-days in town ... | 344 | 915 |
| „ informations | 15 | 58 |
| „ samples taken at railway stations on week-days | 187 | 428 |
| „ informations | 5 | 10 |
| „ samples purchased on Sundays in town ... | 92 | 171 |
| „ informations | 7 | 14 |
| „ samples taken at railway stations on Sundays | 30 | 146 |
| „ informations | 4 | 2 |
| „ samples taken at City Hospitals | 145 | 762 |
| „ informations | — | 5 |
| „ samples taken at Corporation Infant Welfare
Centres and Day Nurseries | 125 | 386 |
| „ informations | — | — |

MARGARINE ACT.

| | <u>1919.</u> | <u>1920.</u> |
|--|--------------|--------------|
| Number of visits to wholesale dealers in margarine ... | 288 | 450 |
| „ visits to shops | 3,508 | 3,524 |
| „ visits to other places | — | 2,417 |

SPECIAL EXAMINATIONS.

The total number of samples submitted during 1918, 1919, and 1920 for special examination was 28, 33, and 220 respectively.

POISONS AND PHARMACY ACT, 1908.

The Poisons and Pharmacy Act, 1908, came into operation on the 1st April, 1909.

The object of the Act is to regulate the sale of certain poisonous substances, and to amend the Pharmacy Acts. It is fully referred to in the Annual Report for 1909.

The numbers of licenses renewed under this Act during the year 1920 was 20, and 3 new licenses were granted.

PUBLIC HEALTH (MILK AND CREAM) REGULATIONS, 1912-1917.

Report for the year ending 31st December, 1920:—

1. MILK AND CREAM NOT SOLD AS PRESERVED CREAM.

Number of samples examined for the presence of a preservative:—

Milk, 2,807; Cream, 4.

Number in which a preservative was reported to be present:—

| | | | | | | |
|-----------|-----|-----|-----|-----|-----|---|
| (a) Milk | ... | ... | ... | ... | ... | 2 |
| (b) Cream | ... | ... | ... | ... | ... | 1 |

Nature of Preservative:—Boracic Acid.

ACTION TAKEN.

(a) and (b) Vendors cautioned.

2. CREAM SOLD AS PRESERVED CREAM.

(a) Instances in which samples have been submitted for analysis to ascertain if the statements on the label as to preservatives were correct:—

| | | | | |
|-------------------------|-----|-----|-----|---|
| Number of samples taken | ... | ... | ... | 8 |
| Correct statements made | ... | ... | ... | 8 |

(b) Determinations made of milk fat in cream sold as Preserved Cream:—

| | | | | |
|--------------------|-----|-----|-----|---|
| Above 35 per cent. | ... | ... | ... | 8 |
|--------------------|-----|-----|-----|---|

(c) Instances where (apart from analysis) the requirements as to labelling or declaration of Preserved Cream in Article V (1) and the proviso in Article V (2) of the Regulations were not observed:—

1 and 2—The requirements of the Regulations were observed at the places visited.

3—THICKENING SOLUTIONS: None found.

Summary of Samples submitted for Analysis from January 1st, to December 31st, 1920,
and other Statistical details.

| INFORMAL SAMPLES. | | | | FORMAL SAMPLES. | | | | |
|-------------------|-----------------|--------------|-------------|-----------------|-----------------|--------------|-------------|------------------|
| Number taken. | Number genuine. | Adulterated. | | Number taken. | Number genuine. | Adulterated. | | Number cautions. |
| | | Sch'dule A. | Sch'dule B. | | | Sch'dule A. | Sch'dule B. | |
| — | — | — | — | 15 | 14 | 1 | — | 1 |
| 18 | 16 | 2 | — | 148 | 143 | 5 | — | 2 |
| — | — | — | — | 18 | 18 | — | — | — |
| — | — | — | — | 1 | 1 | — | — | — |
| 3 | 3 | — | — | 17 | 17 | — | — | — |
| — | — | — | — | 49 | 44 | 5 | — | 5 |
| — | — | — | — | 1 | 1 | — | — | — |
| — | — | — | — | 56 | 55 | 1 | — | 1 |
| — | — | — | — | 2 | 2 | — | — | — |
| 7 | 7 | — | — | 1 | 1 | — | — | — |
| 1 | 1 | — | — | — | — | — | — | — |
| — | — | — | — | 2 | 2 | — | — | — |
| — | — | — | — | — | — | — | — | — |
| — | — | — | — | 2 | 2 | — | — | — |

SUMMARY OF SAMPLES, &c.—Continued.

| INFORMAL SAMPLES. | | | | FORMAL SAMPLES. | | | | |
|-------------------|-----------------|--------------|-------------|--------------------------------|-----------------|--------------|-------------|------------------------|
| Number taken. | Number genuine. | Adulterated. | | Number taken. | Number genuine. | Adulterated. | | Number Infor- mations. |
| | | Sch'dule A. | Sch'dule B. | | | Sch'dule A. | Sch'dule B. | |
| — | — | — | — | 5 | 2 | 3 | — | 2 |
| — | — | — | — | 1 | 1 | — | — | — |
| — | — | — | — | 6 | 6 | — | — | — |
| 2 | 2 | — | — | 3 | 3 | — | — | — |
| 1 | 1 | — | — | — | — | — | — | — |
| 2 | 2 | — | — | — | — | — | — | — |
| 1 | 1 | — | — | — | — | — | — | — |
| 1 | 1 | — | — | — | — | — | — | — |
| 1 | 1 | — | — | — | — | — | — | — |
| — | — | — | — | 1 | 1 | — | — | — |
| — | — | — | — | 10 | 10 | — | — | — |
| 1 | 1 | — | — | 13 | 13 | — | — | — |
| 13 | 13 | — | — | 68 | 67 | 1 | — | 1 |
| 2 | 2 | — | — | 46 | 45 | 1 | — | — |
| | | | | | | | | |
| | | | | Borax | | | | |
| | | | | Black Currant Wine | | | | |
| | | | | Bi-Carbonate of Soda | | | | |
| | | | | Blanc-mange Powder | | | | |
| | | | | Bloater Paste | | | | |
| | | | | Baked Beans | | | | |
| | | | | Bismuth Lozenges | | | | |
| | | | | Bun Flour | | | | |
| | | | | Bismuth Magnesia | | | | |
| | | | | Beef Suet and Rice Flour | | | | |
| | | | | Cheese | | | | |
| | | | | Cake Flour and Mixtures | | | | |
| | | | | Coffee and Mixtures | | | | |
| | | | | Cocoa and Mixtures | | | | |

SUMMARY OF SAMPLES, &c.—*continued*.

| INFORMAL SAMPLES. | | | | Nature of Sample. | FORMAL SAMPLES. | | | | |
|-------------------|-----------------|--------------|-------------|-------------------------|-----------------|-----------------|--------------|-------------|---|
| Number taken. | Number genuine. | Adulterated. | | | Number taken. | Number genuine. | Adulterated. | | |
| | | Sch'dule A. | Sch'dule B. | | | | Sch'dule A. | Sch'dule B. | |
| 13 | 13 | — | — | Confectionery | 71 | 71 | — | — | — |
| — | — | — | — | Cayenne Pepper | 3 | 3 | — | — | — |
| — | — | — | — | Curry Powder | 4 | 4 | — | — | — |
| 1 | 1 | — | — | Corn Flour | 16 | 16 | — | — | — |
| 17 | 17 | — | — | Custard Powder | 24 | 24 | — | — | — |
| 60 | 59 | 1 | — | Condensed Milk | 19 | 19 | — | — | — |
| 6 | 6 | — | — | Cream | — | — | — | — | — |
| 6 | 6 | — | — | Cream (Preserved) | — | — | — | — | — |
| 1 | 1 | — | — | Cascara Sagrada | — | — | — | — | — |
| — | — | — | — | Currents | 2 | 2 | — | — | — |
| 1 | 1 | — | — | Camphor | — | — | — | — | — |
| 12 | 12 | — | — | Castor Oil | — | — | — | — | — |
| 1 | 1 | — | — | Crushed Linseed..... | — | — | — | — | — |
| 1 | 1 | — | — | Composition Power | — | — | — | — | — |

SUMMARY OF SAMPLES, &c.—Continued.

| INFORMAL SAMPLES. | | | | Nature of Sample. | FORMAL SAMPLES. | | | | | |
|-------------------|-----------------|--------------|-------------|---------------------------------|-----------------|-----------------|--------------|-------------|----------------|---------------|
| Number taken. | Number genuine. | Adulterated. | | | Number taken. | Number genuine. | Adulterated. | | Number caught. | Informations. |
| | | Sch'dule A. | Sch'dule B. | | | | Sch'dule A. | Sch'dule B. | | |
| 2 | 2 | — | — | Compound Liquorice Powder | 8 | 8 | — | — | — | — |
| 2 | 2 | — | — | Cream of Tartar | 38 | 32 | 3 | 3 | 3 | — |
| — | — | — | — | Chocolate Powder | 1 | 1 | — | — | — | — |
| 4 | 4 | — | — | Cod Liver Oil | — | — | — | — | — | — |
| 1 | 1 | — | — | Chlorodyne | — | — | — | — | — | — |
| 1 | 1 | — | — | Cheese Biscuits | — | — | — | — | — | — |
| — | — | — | — | Caraway Seeds | 1 | 1 | — | — | — | — |
| — | — | — | — | Camphorated Oil | 4 | 4 | — | — | — | — |
| — | — | — | — | Calves Foot Jelly | 1 | 1 | — | — | — | — |
| — | — | — | — | Dripping | 19 | 19 | — | — | — | — |
| — | — | — | — | Dessicated Coconut | 9 | 9 | — | — | — | — |
| — | — | — | — | Digestive Flour | 1 | 1 | — | — | — | — |
| 6 | 6 | — | — | Dried Eggs | 1 | 1 | — | — | — | — |
| — | — | — | — | Do. Apricots | 2 | — | 2 | — | — | — |

SUMMARY OF SAMPLES, &c.—continued.

| INFORMAL SAMPLES. | | | | Nature of Sample. | FORMAL SAMPLES. | | | | | |
|-------------------|-----------------|--------------|-------------|-----------------------------------|-----------------|-----------------|--------------|-------------|----------------|---------------|
| Number taken. | Number genuine. | Adulterated. | | | Number taken. | Number genuine. | Adulterated. | | Number caught. | Informations. |
| | | Sch'dule A. | Sch'dule B. | | | | Sch'dule A. | Sch'dule B. | | |
| — | — | — | — | Dried Peaches..... | 2 | — | 2 | — | — | |
| — | — | — | — | Do. Dates..... | 1 | 1 | — | — | — | |
| 1 | 1 | — | — | Do. Milk | — | — | — | — | — | |
| — | — | — | — | Do. Apples | 1 | 1 | — | — | — | |
| — | — | — | — | Do. Pears | 1 | 1 | — | — | — | |
| 2 | 2 | — | — | Do. Green Peas | 3 | 3 | — | — | — | |
| 1 | 1 | — | — | Epsom Salts | 7 | 7 | — | — | — | |
| 9 | 9 | — | — | Egg Powders and Substitutes | 10 | 10 | — | — | — | |
| 2 | 2 | — | — | Eucalytus Oil | — | — | — | — | — | |
| 1 | 1 | — | — | Essence of Senna | — | — | — | — | — | |
| 1 | 1 | — | — | Emulsion of Cod Liver Oil | — | — | — | — | — | |
| — | — | — | — | Flour | 23 | 23 | — | — | — | |
| — | — | — | — | Fish Cakes | 1 | 1 | — | — | — | |
| — | — | — | — | Fruit Cordial | 2 | — | 1 | 1 | — | |

SUMMARY OF SAMPLES, &c.—continued.

| INFORMAL SAMPLES. | | | | FORMAL SAMPLES. | | | | | | |
|-------------------|--------------------|----------------|----------------|------------------|-------------------------|--------------------|----------------|----------------|--------------------|--------------------|
| Number
taken. | Number
genuine. | Adulterated. | | Number
taken. | Nature of Sample. | Number
genuine. | Adulterated. | | Number
caut'nd. | Infor-
mations. |
| | | Sch'dule
A. | Sch'dule
B. | | | | Sch'dule
A. | Sch'dule
B. | | |
| — | — | — | — | 15 | Fruit Wine | 10 | 3 | 2 | — | — |
| — | — | — | — | 2 | Flower of Sulphur | 2 | — | — | — | — |
| — | — | — | — | 22 | Ground Cinnamon | 11 | 8 | 3 | — | 5 |
| — | — | — | — | 35 | Do. Ginger..... | 35 | — | — | — | — |
| — | — | — | — | 6 | Do. Mace | 6 | — | — | — | — |
| — | — | — | — | 1 | Do. Cayenne | 1 | — | — | — | — |
| — | — | — | — | 15 | Do. Almonds | 15 | — | — | — | — |
| — | — | — | — | 2 | Do. Nutmeg | 2 | — | — | — | — |
| — | — | — | — | 6 | Gin | 5 | 1 | — | — | — |
| 1 | 1 | — | — | 5 | Gregory Powder | 1 | 4 | — | 4 | — |
| — | — | — | — | 2 | Golden Syrup | 2 | — | — | — | — |
| 1 | 1 | — | — | 1 | Gravy Salt | 1 | — | — | — | — |
| — | — | — | — | 7 | Ginger Wine..... | 3 | 2 | 2 | — | — |
| — | — | — | — | 3 | Green Peas | 3 | — | — | — | — |

SUMMARY OF SAMPLES, &c.—continued.

| INFORMAL SAMPLES. | | | Nature of Sample. | FORMAL SAMPLES. | | | | Number taken. | Number genuine. | Adulterated. | | Number caught. | Informations. |
|-------------------|-----------------|--------------|----------------------------|-----------------|----|---|---|---------------|-----------------|--------------|-------------|----------------|---------------|
| Number taken. | Number genuine. | Adulterated. | | | | | | | | Sch'dule A. | Sch'dule B. | | |
| 8 | 8 | — | Glycerine | — | — | — | — | — | — | — | — | — | — |
| — | — | — | Green Ginger Wine..... | 1 | 1 | — | — | — | — | — | — | — | — |
| 6 | 6 | — | Honey | 2 | 2 | — | — | — | — | — | — | — | — |
| 1 | 1 | — | Hard Bread..... | — | — | — | — | — | — | — | — | — | — |
| — | — | — | Ice Cream..... | 3 | 3 | — | — | — | — | — | — | — | — |
| 1 | 1 | — | Iodoform | — | — | — | — | — | — | — | — | — | — |
| — | — | — | Jam | 53 | 51 | — | — | — | — | — | 2 | — | — |
| — | — | — | Lump Ginger | 1 | 1 | — | — | — | — | — | — | — | — |
| 1 | 1 | — | Lemon Curd..... | — | — | — | — | — | — | — | — | — | — |
| 2 | 2 | — | Lard and Substitutes | 77 | 77 | — | — | — | — | — | — | — | — |
| 3 | 3 | — | Lemon Cheese | 3 | 3 | — | — | — | — | — | — | — | — |
| — | — | — | Do. Squash | 8 | 3 | — | — | — | — | 3 | 2 | — | — |
| — | — | — | Do. Cordial | 1 | 1 | — | — | — | — | — | — | — | — |
| — | — | — | Lemonade Powder | 5 | 5 | — | — | — | — | — | — | — | — |

SUMMARY OF SAMPLES, &c.—continued.

| INFORMAL SAMPLES. | | | | Nature of Sample. | FORMAL SAMPLES. | | | | | |
|-------------------|-----------------|--------------|-------------|-----------------------------------|-----------------|-----------------|--------------|-------------|----------------|---------------|
| Number taken. | Number genuine. | Adulterated. | | | Number taken. | Number genuine. | Adulterated. | | Number caught. | Informations. |
| | | Sch'dule A. | Sch'dule B. | | | | Sch'dule A. | Sch'dule B. | | |
| — | — | — | — | Lager Beer | 3 | — | 3 | — | — | — |
| — | — | — | — | Lime Fruit Wine..... | 1 | — | — | 1 | — | — |
| — | — | — | — | Do. Juice Cordial | 14 | 7 | 6 | 1 | — | — |
| 1 | 1 | — | — | Linseed Oil | — | — | — | — | — | — |
| 1 | 1 | — | — | Do. Meal | — | — | — | — | — | — |
| 1 | 1 | — | — | Lemoncream | — | — | — | — | — | — |
| 50 | 50 | — | — | Margarine | 76 | 76 | — | — | — | — |
| — | — | — | — | Mustard and Compounds | 8 | 8 | — | — | — | — |
| 2 | 1 | — | 1 | Mixed Spice | 10 | 8 | 1 | 1 | — | — |
| — | — | — | — | Mince Meat | 6 | 6 | — | — | — | — |
| 21 | 14 | 7 | — | Medicine (per prescription) | 6 | 3 | 3 | — | — | 3 |
| 8 | 2 | 5 | 1 | Milk (Pure) | 2793 | 2425 | 245 | 123 | 44 | 90 |
| — | — | — | — | Do. (Skimmed) | 10 | 9 | — | 1 | — | — |
| — | — | — | — | Do. (Butter) | 3 | 1 | 2 | — | — | 1 |

SUMMARY OF SAMPLES, &c.—continued.

| INFORMAL SAMPLES. | | | | Nature of Sample. | FORMAL SAMPLES. | | | | Infor-
mations. | |
|-------------------|--------------------|----------------|----------------|---------------------------|------------------|--------------------|----------------|----------------|--------------------|---|
| Number
taken. | Number
genuine. | Adulterated. | | | Number
taken. | Number
genuine. | Adulterated. | | | |
| | | Sch'dule
A. | Sch'dule
B. | | | | Sch'dule
A. | Sch'dule
B. | | |
| — | — | — | — | Milk (Separated) | 2 | 1 | 1 | — | — | 1 |
| — | — | — | — | Marmalade | 16 | 15 | 1 | — | — | — |
| 1 | 1 | — | — | Milk Pudding Powder | — | — | — | — | — | — |
| 1 | 1 | — | — | Malted Milk..... | — | — | — | — | — | — |
| — | — | — | — | Oat Kernels..... | 1 | 1 | — | — | — | — |
| — | — | — | — | Oatmeal | 26 | 26 | — | — | — | — |
| 7 | 7 | — | — | Olive Oil | 1 | 1 | — | — | — | — |
| 1 | 1 | — | — | Orange Cream | — | — | — | — | — | — |
| — | — | — | — | Orange Wine | 1 | — | — | 1 | — | — |
| — | — | — | — | Plum Pudding Powder | 1 | 1 | — | — | — | — |
| — | — | — | — | Do. Mixture | 3 | 3 | — | — | — | — |
| 1 | 1 | — | — | Pepper | 68 | 65 | 3 | — | 2 | — |
| 5 | 4 | — | 1 | Pickles | 2 | 2 | — | — | — | — |
| 1 | 1 | — | — | Proteid Food | — | — | — | — | — | — |

Infor-
mations.Number
caut'nd.

SUMMARY OF SAMPLES, &c.—continued.

| Informal Samples. | | | | Formal Samples. | | | | |
|-------------------|-----------------|--------------|-------------|-----------------|-----------------|--------------|-------------|------------------------|
| Number taken. | Number genuine. | Adulterated. | | Number taken. | Number genuine. | Adulterated. | | Number Infor- mations. |
| | | Sch'dule A. | Sch'dule B. | | | Sch'dule A. | Sch'dule B. | |
| 1 | 1 | — | — | — | — | — | — | — |
| 1 | 1 | — | — | 1 | 1 | — | — | — |
| 1 | 1 | — | — | 1 | 1 | — | — | — |
| 1 | 1 | — | — | — | — | — | — | — |
| 1 | 1 | — | — | — | — | — | — | — |
| 2 | — | 1 | 1 | — | — | — | — | — |
| — | — | — | — | 1 | 1 | — | — | — |
| 2 | — | 1 | 1 | — | — | — | — | — |
| — | — | — | — | 1 | 1 | — | — | — |
| — | — | — | — | 1 | 1 | — | — | — |
| — | — | — | — | 2 | 2 | — | — | — |
| — | — | — | — | 1 | 1 | — | — | — |
| — | — | — | — | 1 | 1 | — | — | — |
| 1 | 1 | — | — | 1 | 1 | — | — | — |

SUMMARY OF SAMPLES, &c.—continued.

| INFORMAL SAMPLES. | | | | Nature of Sample. | FORMAL SAMPLES. | | | | | |
|-------------------|-----------------|--------------|-------------|--------------------------------------|-----------------|-----------------|--------------|-------------|----------------|---------------|
| Number taken. | Number genuine. | Adulterated. | | | Number taken. | Number genuine. | Adulterated. | | Number caught. | Informations. |
| | | Sch'dule A. | Sch'dule B. | | | | Sch'dule A. | Sch'dule B. | | |
| 1 | 1 | — | — | Pudding Powder | — | — | — | — | — | — |
| 1 | 1 | — | — | Quinine Tablets | — | — | — | — | — | — |
| — | — | — | — | Quinine and Iron Tablets..... | 1 | 1 | — | — | — | — |
| 1 | 1 | — | — | Quinine..... | — | — | — | — | — | — |
| — | — | — | — | Raisins | 3 | 3 | — | — | — | — |
| — | — | — | — | Rangoon Beans..... | 1 | 1 | — | — | — | — |
| 1 | — | 1 | — | Raspberry Cream..... | — | — | — | — | — | — |
| — | — | — | — | Rolled Oats..... | 3 | 3 | — | — | — | — |
| — | — | — | — | Rice and Ground Rice and Flaked..... | 61 | 50 | 0 | 11 | — | — |
| — | — | — | — | Raisin Wine..... | 4 | 3 | — | 1 | — | — |
| — | — | — | — | Rum | 50 | 42 | 8 | — | — | — |
| 2 | 1 | — | 1 | Sarsaparilla | — | — | — | — | — | — |
| — | — | — | — | Suet Mixture..... | 1 | 1 | — | — | — | — |
| — | — | — | — | Self-Raising Flour..... | 74 | 74 | — | — | — | — |

SUMMARY OF SAMPLES, &c.—*continued.*

| INFORMAL SAMPLES. | | | | FORMAL SAMPLES. | | | | |
|-------------------|-----------------|--------------|-------------|-----------------|-----------------|--------------|-------------|------------------------|
| Number taken. | Number genuine. | Adulterated. | | Number taken. | Number genuine. | Adulterated. | | Number Infor- mations. |
| | | Sch'dule A. | Sch'dule B. | | | Sch'dule A. | Sch'dule B. | |
| — | — | — | — | 2 | 2 | — | — | — |
| — | — | — | — | 2 | 2 | — | — | — |
| — | — | — | — | 1 | 1 | — | — | — |
| — | — | — | — | 1 | 1 | — | — | — |
| 1 | 1 | — | — | — | — | — | — | — |
| 2 | 2 | — | — | — | — | — | — | — |
| 3 | 3 | — | — | 17 | 16 | 1 | — | — |
| 1 | 1 | — | — | — | — | — | — | — |
| 1 | 1 | — | — | — | — | — | — | — |
| 1 | 1 | — | — | 2 | 1 | 1 | — | 1 |
| 1 | 1 | — | — | — | — | — | — | — |
| 1 | 1 | — | — | — | — | — | — | — |
| 2 | 2 | — | — | 7 | 7 | — | — | — |
| — | — | — | — | 35 | 35 | — | — | — |

SUMMARY OF SAMPLES, &c.—continued.

| INFORMAL SAMPLES. | | | | Nature of Sample. | FORMAL SAMPLES. | | | | | |
|-------------------|-----------------|--------------|-------------|---------------------------|-----------------|-----------------|--------------|-------------|----------------|---------------|
| Number taken. | Number genuine. | Adulterated. | | | Number taken. | Number genuine. | Adulterated. | | Number caught. | Informations. |
| | | Sch'dule A. | Sch'dule B. | | | | Sch'dule A. | Sch'dule B. | | |
| 3 | 3 | — | — | Sugar Substitute..... | 1 | 1 | — | — | — | — |
| 3 | 3 | — | — | Soup Mixtures..... | — | — | — | — | — | — |
| — | — | — | — | Split Peas..... | 2 | 1 | — | 1 | — | — |
| 1 | 1 | — | — | Tinned Chicken Broth..... | — | — | — | — | — | — |
| 2 | 1 | 1 | — | Do. Pilchards..... | — | — | — | — | — | — |
| 1 | 1 | — | — | Do. Veal Loaf..... | — | — | — | — | — | — |
| 2 | 2 | — | — | Do. Corned Beef..... | — | — | — | — | — | — |
| 1 | 1 | — | — | Do. Breakfast Fish..... | — | — | — | — | — | — |
| 1 | 1 | — | — | Do. Lobster..... | — | — | — | — | — | — |
| 5 | 2 | 1 | 2 | Do. Pork and Beans..... | — | — | — | — | — | — |
| 1 | 1 | — | — | Do. Meat..... | — | — | — | — | — | — |
| 1 | — | 1 | — | Do. Beef..... | — | — | — | — | — | — |
| 1 | 1 | — | — | Do. Beef Loaf..... | — | — | — | — | — | — |
| 4 | 2 | — | 2 | Do. Brislings..... | — | — | — | — | — | — |

SUMMARY OF SAMPLES, &c.—continued.

| INFORMAL SAMPLES. | | | | Nature of Sample. | FORMAL SAMPLES. | | | | | |
|-------------------|-----------------|--------------|-------------|---------------------------------|-----------------|-----------------|--------------|-------------|----------------|---------------|
| Number taken. | Number genuine. | Adulterated. | | | Number taken. | Number genuine. | Adulterated. | | Number caught. | Informations. |
| | | Sch'dule A. | Sch'dule B. | | | | Sch'dule A. | Sch'dule B. | | |
| 1 | 1 | — | — | Tinned Beef and Vegetables..... | — | — | — | — | — | |
| 6 | 5 | 1 | — | Do. Salmon | — | — | — | — | — | |
| 2 | 2 | — | — | Do. Potted Beef..... | — | — | — | — | — | |
| 1 | 1 | — | — | Do. Ham and Beef Paste..... | — | — | — | — | — | |
| 5 | 2 | 1 | 2 | Do. Sardines | — | — | — | — | — | |
| 2 | 1 | — | 1 | Do. Tunny Fish..... | — | — | — | — | — | |
| 2 | 2 | — | — | Do. Green Peas..... | — | — | — | — | — | |
| 2 | 1 | — | 1 | Do. Tomatoes | — | — | — | — | — | |
| 1 | — | 1 | — | Do. Cray Fish..... | — | — | — | — | — | |
| 3 | 3 | — | — | Do. Herrings | — | — | — | — | — | |
| 1 | 1 | — | — | Do. Prawns | — | — | — | — | — | |
| 1 | 1 | — | — | Do. Apricots | 2 | 2 | — | — | — | |
| 2 | 2 | — | — | Do. Peaches | 1 | 1 | — | — | — | |
| 1 | 1 | — | — | Do. Pears | 1 | 1 | — | — | — | |

SUMMARY OF SAMPLES, &c.—continued.

| INFORMAL SAMPLES. | | | | Nature of Sample. | FORMAL SAMPLES. | | | | | |
|-------------------|-----------------|--------------|-------------|--------------------------------|-----------------|-----------------|--------------|-------------|----------------|---------------|
| Number taken. | Number genuine. | Adulterated. | | | Number taken. | Number genuine. | Adulterated. | | Number caught. | Informations. |
| | | Sch'dule A. | Sch'dule B. | | | | Sch'dule A. | Sch'dule B. | | |
| 1 | — | — | 1 | Tinned Pineapple..... | — | — | — | — | — | — |
| 3 | 2 | 1 | — | Table Salt..... | 10 | 5 | — | — | 5 | — |
| — | — | — | — | Do. Jelly..... | 3 | — | — | — | — | — |
| — | — | — | — | Tea | 51 | — | — | — | — | — |
| 4 | 4 | — | — | Treacle | 7 | — | — | — | — | — |
| — | — | — | — | Tapioca | 34 | — | — | — | — | — |
| — | — | — | — | Tartaric Acid..... | 4 | — | — | — | — | — |
| 1 | 1 | — | — | Tincture of Iodine..... | — | — | — | — | — | — |
| — | — | — | — | Vinegar..... | 11 | — | — | — | — | — |
| 2 | 2 | — | — | Vaseline | — | — | — | — | — | — |
| 1 | 1 | — | — | Worm Powders..... | — | — | — | — | — | — |
| — | — | — | — | Whisky..... | 104 | 96 | 8 | — | — | 7 |
| — | — | — | — | Yorkshire Pudding Powders..... | 1 | 1 | — | — | — | — |
| 3 | 3 | — | — | Zinc Ointment..... | 1 | 1 | — | — | — | — |
| 430 | 390 | 25 | 15 | | 4,573 | 4,083 | 334 | 156 | 70 | 112 |

DECEMBER 31st, 1920, TOGETHER WITH RESULT.

| No. of
Infor-
mations. | Nature of Sample. | Nature of Offence. | RESULT OF LEGAL PROCEEDINGS. | | | | Costs. |
|------------------------------|-----------------------|---|------------------------------|--|--|-----------|----------|
| | | | No. of
convic-
tions. | No.
with-
drawn on
payment
of costs. | No. with-
drawn and
dismissed
without
costs. | Fines | |
| | | | | | | £ s. d. | £ s. d. |
| 1 | Butter Milk | Adulterated with water | 1 | — | — | 3 0 0 | 0 10 6 |
| 3 | Butter | Containing fat other than butter fat..... | 2 | 1 | — | 4 0 0 | 3 18 6 |
| 5 | Ground Cinnamon | Containing excess amount of sand and
siliceous matter | 5 | — | 2 | 11 11 0 | 2 12 6 |
| 1 | " | False warranty | — | — | 1 | — | — |
| 39 | Milk | Deficient in cream | 16 | 12 | 11 | 48 0 0 | 28 14 0 |
| 8 | " | Deficient in cream and adulterated with
water | 7 | — | 1 | 46 10 0 | 7 7 0 |
| 40 | " | Adulterated with water | 30 | 6 | 4 | 135 0 0 | 33 6 0 |
| 3 | " | Coloured with Anatto | — | 1 | 2 | — | 0 10 6 |
| 3 | Medicine | Supplying medicine not in accordance with
prescription | 3 | — | — | 17 0 0 | 5 5 0 |
| 1 | Purified Borax..... | Containing 50 parts per million of arsenic ... | 1 | — | — | 4 0 0 | 1 0 0 |
| 1 | Separated Milk ?..... | Adulterated with water | 1 | — | — | 10 0 0 | 1 1 0 |
| 1 | ..... | Refusing to se'l sample of milk..... | 1 | — | — | 10 0 0 | — |
| 5 | ..... | Obstructing Inspector in course of his duties | 5 | — | — | 35 10 0 | 0 5 0 |
| 111 | | | 72 | 20 | 21 | £324 11 0 | £84 10 0 |

FOOD CONTROL WORK.

The large amount of time and attention given by the Officers of the Department in reference to the Food Controller's Orders, as well as the supervision of premises of firms engaged in carrying out Army contracts, may be judged by the following statistics, viz. :—

| | | | | | |
|--|-----|-----|-----|-----|-----------|
| Number of visits to shops | ... | ... | ... | ... | 141,477 |
| Number found correct | ... | ... | ... | ... | 140,322 |
| Number found incorrect (mainly the absence of
Notices and minor irregularities in respect of
Food Registers) | ... | ... | ... | ... | 1,155 |
| Number of complaints investigated | ... | ... | ... | ... | 70 |
| Number of visits in connection with New Business
Applications | ... | ... | ... | ... | — |
| Number of enquiries in respect of Ration Books | ... | ... | ... | ... | 334 |
| Number of reports submitted to Executive Officer | ... | ... | ... | ... | 648 |
| Number of enquiries in respect of Bread Supplies | ... | ... | ... | ... | 189 |
| Number of visits under the Profiteering Act | ... | ... | ... | ... | 155 |
| Total number of informations | ... | ... | ... | ... | 54 |
| Number dismissed | ... | ... | ... | ... | — |
| Number withdrawn | ... | ... | ... | ... | — |
| Number of convictions | ... | ... | ... | ... | 28 |
| Total amount of fines | ... | ... | ... | ... | £311 13 6 |
| Total amount of costs | ... | ... | ... | ... | — |
| Costs allowed | ... | ... | ... | ... | — |

ANNUAL REPORT OF THE CITY BACTERIOLOGIST, 1920.

The report of Professor J. M. Beattie shows that during the year 1920, 27,712 specimens were examined for the Health, Port Sanitary, Water, and Baths' Committee, shewing an increase of more than 6,000 over the number examined in 1919. This increase is largely due to the facilities of the Laboratory being increasingly taken advantage of by medical practitioners, although there has been an increase in the numbers of milks and other food-stuffs sent to the Laboratory from the Public Health Department. The specimens may be grouped as follows:—

1. Milk and other Food-stuffs.
2. Water.
3. Rats, Mice, etc.—for possible infection with the *Bacillus* of Plague.
4. Material from Infectious Diseases in Man (Diphtheria, Typhoid Fever, Tuberculosis, etc.).
5. Material from Infectious Diseases in Animals (Tuberculosis, Anthrax, etc.).
6. Venereal Diseases.
7. Miscellaneous.

1. MILK AND OTHER FOOD-STUFFS.

The following samples have been examined:—

For the Public Health Department:—

(a) Fresh Milks:—

| | | | | | | |
|-----------------------------------|-----|-----|-----|-----|-----|-----|
| City Hospitals | ... | ... | ... | ... | ... | 283 |
| Infant Welfare Centres | ... | ... | ... | ... | ... | 180 |
| Milk Shops, Railway Stations, &c. | ... | ... | ... | ... | ... | 681 |

(b) Dried Milk 1

(c) Condensed Milks 15

Carried forward 1,160

Brought forward ... 1,160

(d) Other Food-stuffs:—

| | | | |
|---|-----|-----|----|
| Preserved Meats, Brawn, and Meat Pastes | ... | ... | 5 |
| Meat Pies | ... | ... | 5 |
| Sausages (bundles) | ... | ... | 12 |
| Tinned or Potted Fish and Fish Pastes | ... | ... | 17 |
| Cheese (portion) | ... | ... | 1 |
| Cakes | ... | ... | 2 |
| Ice Cream | ... | ... | 6 |
| Chocolates (box) | ... | ... | 1 |
| Dates (sample) | ... | ... | 1 |
| Ham Shoulder | ... | ... | 1 |
| Mussels (bags) | ... | ... | 3 |
| Oysters (bags) | ... | ... | 1 |

For Port Sanitary Department:—

(a) Food-stuffs:—

| | | | |
|---------------|-----|-----|---|
| Tinned Meats | ... | ... | 5 |
| Tinned Fruits | ... | ... | 3 |
| Jam | ... | ... | 1 |
| Lunch Tongue | ... | ... | 1 |
| Ideal Milk | ... | ... | 2 |
| Mussels (bag) | ... | ... | 1 |

Total ... 1,228

FRESH MILKS.

CITY HOSPITALS.—Of the 283 samples examined 189 contained *B. coli* in dilutions of 1 in 100, and in 25 samples *B. coli* was entirely absent.

In 53 samples (i.e., over 18 per cent.), *B. enteritidis sporogenes*—a contamination from dust or manure,—was present. In 8 samples streptococci were present, and 4 samples contained *B. Tuberculosis*.

INFANT WELFARE CENTRES.—Of the 180 samples examined 119 contained *B. coli* in dilutions of 1 in 100, and *B. coli* was entirely absent in 23. *B. enteritidis sporogenes* was present in 20 samples (i.e., over 11 per cent.), and streptococci in 6. *B. Tuberculosis* was found in 16 samples.

MILK SHOPS, RAILWAY STATIONS, ETC.—Of the 681 samples examined 325 contained *B. coli* in dilutions of 1 in 100, and in 146 *B. coli* was entirely absent. *B. enteritidis sporogenes* was present in 105 (i.e., over 16 per cent.), and streptococci in 19 samples. *B. Tuberculosis* was found in 68 samples.

Thus in 1,144 samples of milk 88 were found to be infected with tubercle. No deductions as to the percentage of tuberculous cattle, from which these milks were taken, can be drawn from these figures, as in many cases two or more samples may be from the same dairy or from suspected sources. (See also table on page 171.)

DRIED MILK.—The only sample examined was not sterile, but contained numbers of staphylococci—no *B. coli* or *B. tuberculosis* was found in it.

CONDENSED MILKS.—Of the 15 samples examined only 4 were sterile,—one contained putrefactive organisms, one contained streptococci, eight staphylococci, and one an unidentified bacillus. The only really unsatisfactory sample among the dried and condensed milks was the one in which putrefaction had taken place,—the other organisms were probably harmless, and apparently produced no injurious effects on the milks.

FOOD-STUFFS.—The majority of these were found to be in a satisfactory condition, free from putrefactive organisms, and food-poisoning organisms. In 22 samples, however, there were putrefactive changes, and the causal bacteria were isolated. Half of these were samples of sausages, and in 10 of these there was, in addition, the presence of *B. coli*, and in 7 *B. enteritidis sporogenes*—these were very unsatisfactory foods. The shell-fish examined were all free from *B. typhosus*, and their bacterial content (i.e., of other bacteria), was not excessive.

2. WATER.

There were 401 samples of water examined for the Water Engineer, as follows:—

| | | | |
|---|--------|-----|-----|
| Daily samples (from taps in the laboratory) | ... | ... | 356 |
| Vyrnwy Aqueduct (monthly samples) | ... | ... | 12 |
| Rivington Aqueduct (monthly samples when working) | ... | ... | 11 |
| George Holt Well | ditto. | ... | 5 |
| Dudlow Lane Well | ditto. | ... | 11 |
| Oswestry Filters, &c.... | ... | ... | 6 |

The water throughout the year, whether from the wells or from the Rivington and Vyrnwy Aqueducts, was, from the bacterial standpoint, highly satisfactory.

The following special samples were examined:—

| | |
|--|----|
| Public Health Department | 1 |
| Baths and Washhouses Department | 11 |

Thus the total number of samples examined during the year was 413.

With regard to the water from the Baths, it is difficult to get a standard of purity, but no organisms which were likely to cause disease were found, and the general bacterial content of the water was not abnormally high.

(3) RATS, MICE, &C., FOR POSSIBLE INFECTION WITH THE BACILLUS OF PLAGUE.

The total number examined is as follows:—

| | Rats. | Mice. | Cats. | Mongoose. |
|--------------|-------|-------|-------|-----------|
| PORT | 6,614 | 163 | ... | ... |
| CITY | 3,072 | 33 | 2 | 1 |
| TOTAL | 9,686 | 196 | 2 | 1 |

Sixteen plague rats and mice were found in one warehouse during the period 23rd June to the 19th July. Although rats from adjoining warehouses were examined, no plague rat was found in any of these.

From general considerations of inoculation experiments, etc., I believe that the plague bacilli found in the infected rat is of a low type of virulence, and that spread from them, to any extent, is unlikely. At the same time I consider that the value of constant examination of Port and City rats cannot be over estimated.

(4) MATERIAL FROM INFECTIOUS DISEASES IN MAN.

(a) *Throat Infections for Diphtheria.*

| Sent by | Positive. | Negative. | Total. |
|---|-----------|-----------|--------|
| City Hospitals | 559 | 6,199 | 6,758 |
| Private Practitioners within the City | 56 | 365 | 421 |
| | 615 | 6,564 | 7,179 |

(b) Blood from suspected cases of Typhoid Fever.

| Sent by | Positive. | Negative. | Total. |
|---|-----------|-----------|--------|
| City Hospitals | 17 | 44 | 61 |
| Private Practitioners within the City | 8 | 39 | 47 |
| | 25 | 83 | 108 |

(c) Sputa from suspected cases of Tuberculosis.

| Sent by | Positive. | Negative. | Total. |
|---|-----------|-----------|--------|
| City Hospitals | 129 | 579 | 708 |
| Private Practitioners within the City | 230 | 797 | 1,027 |
| | 359 | 1,376 | 1,735 |

(d) Anthrax Infection.

Two suspected malignant pustules from human subjects were examined, but both were negative.

(5) MATERIAL FROM DISEASES IN ANIMALS.*(a) Udders and other tissues.*

One specimen was examined, but there was no evidence of *B. tuberculosis*.

(b) Anthrax.

Wool, Hides, Hair, etc.—24 specimens were examined, but all were negative.

Animal Foods—3 specimens were examined, but all were negative.

Shaving Brushes—258 were examined, and 62 of these were found to be infected.

Blood from Cow—One specimen was examined, but was negative.

With regard to Anthrax Infected Shaving Brushes, the systematic examinations made at regular intervals in various City areas has proved to be a great advantage. Many of the infected brushes would not otherwise have been discovered until possibly a case of infection from their use had occurred. It is important to note that of those examined no less than nearly 23 per cent. were infected with *B. Anthracis*.

(6) VENEREAL DISEASES.

The following are the numbers and particulars of the specimens examined for the Liverpool Clinics, Hospitals, and Private Practitioners:

| | | | | |
|----------------------------------|-----|-----|-----|-------|
| Detection of Spirochætes | ... | ... | ... | 46 |
| „ Gonococci | ... | ... | ... | 453 |
| Wassermann Reaction for Syphilis | ... | ... | ... | 5,081 |
| Still-born Infants | ... | ... | ... | 411 |
| Ophthalmia Neonatorum | ... | ... | ... | 142 |
| Total | ... | ... | ... | 6,133 |

As the majority of the specimens sent are from patients suspected to be suffering from Syphilis, or undergoing treatment, several specimens of blood may be sent from one case at different times, and, therefore, any percentages as to positive and negative results would be of no value.

Of the 411 Still-born Infants examined 43 gave positive evidence of the presence of syphilis (i.e., over 10 per cent.). The importance of the work is apparent, for, where syphilis is established by the finding of the actual causal spirochæte in the fœtus, the mother can be at once advised to submit to treatment.

Of the 142 cases of Ophthalmia Neonatorum 59 shewed the presence of *Gonococcus*, i.e., nearly 42 per cent. Infections of this class are, if not attended to in the early stages, apt to bring about serious impairment of vision or total blindness; whereas, careful and simple treatment very soon destroys the infecting organisms. The importance, therefore, of the constant vigilance, which examinations such as are undertaken in these cases demand, cannot be overestimated. Apart from the saving of the children's eyes, valuable advice can be given to the parents, in regard to treatment for themselves.

It should be noted that all these cases are examined at the earliest possible stage—many of them before the condition of “Purulent Ophthalmia” has developed. There is no doubt that if cases of “Purulent Ophthalmia” only were examined, the percentage of gonococcal infections would be much higher, but the Health Authorities of this City consider that all cases of Ophthalmia in infants should be examined and treated at the earliest possible period so as to avoid, if possible, the development of the “Purulent” condition, and its more serious consequences.

It is not infrequent to find no bacteria in our films, or bacteria of other types,—staphylococci, pneumococci, etc., but I am convinced that some of these cases are gonorrhœal in origin, but the Gonococci are very few in numbers, and our early examination makes it difficult to discover them, and our early treatment prevents their development.

As I have already said, I consider this early examination and early treatment in all cases of Ophthalmia, or even suspicious Ophthalmia, of the very greatest importance.

(7) MISCELLANEOUS.

| Description of Specimens. | Number. |
|---|---------|
| Urine and Fæces (many of these were for Dysentery, Typhoid Fever, etc.) | 244 |
| Fowl for Diphtheria | 1 |
| Toy for Diphtheria | 1 |
| Section of Tissues | 108 |
| Hairs for Ringworm | 32 |
| Secretions (Pus, Pleural Fluid, etc.)..... | 205 |
| Vaccines | 151 |
| Disinfectants | 5 |
| Total | 747 |

Among this group have been specimens for suspected Food-poisoning, and for Dysentery, and some of these have involved a considerable amount of investigation. Reference will be made to these under "Special Investigations."

The disinfectants were undertaken for the Baths Committee; the object being to test the efficiency of them, and to compare one with the other, in order that the best for the purpose of the disinfection of baths might be employed, and also for the purpose of seeing that the guaranteed standard was maintained.

SUMMARY OF EXAMINATIONS DURING THE YEAR 1920.

| Description of Specimens. | Number. |
|---|---------|
| Milks, and other Food Stuffs | 1,228 |
| Waters | 413 |
| Rats, Mice, etc. | 9,885 |
| Diphtheria | 7,179 |
| Typhoid Fever..... | 108 |
| Sputum for Tuberculosis | 1,735 |
| Anthrax | 284 |
| Disinfectants | 5 |
| Venereal Diseases | 6,133 |
| Miscellaneous (not including the disinfectants stated above)..... | 742 |
| Totals | 27,712 |

SPECIAL INVESTIGATIONS.

FOOD-POISONING.—A considerable amount of work has been carried out in relation to several cases of suspected food poisoning. The stomach and bowel contents have been examined, and, also, suspected foods in several cases. In some of these the investigations have enabled the

Health Authorities to exclude infected foods as a causal factor. In the case of one group the causal organism was found to be one of the dysentery group—the children being probably infected by a member of the household who was a carrier. In another group one of the usual organisms which give rise to diarrhœa—especially in children—was isolated, and in these cases where death occurred a “Natural” cause was established. In other cases organisms of the Food-poisoning group were isolated from the stomach and bowel contents, though portions of the actual food used could not be obtained.

Work is still being carried out with these organisms in order to more clearly establish whether, in all their reactions, they are identical with, or a type of, the organisms of a similar nature isolated by other observers.

DIPHTHERIA.—Of the work referred to in my last report the work on the bacteria of the throat had to be abandoned on account of the illness of the Research worker. The study of diphtheria was continued and presented to the University, and was accepted as a Thesis for the M.D. Degree. This work emphasizes the importance of the careful testing of organisms, which seem to be identical with *B. Diphtheria*, as to whether or not they are virulent, and, in this connection I would very strongly urge the great desirability of the full examination of these organisms, especially in prolonged cases, and full records of such cases being sent to the laboratories by Medical Officers at the Hospitals. Such thorough examination would, I am sure, prevent patients being kept for unnecessary long periods in hospitals, merely because a swab shews bacilli which are indistinguishable from *B. diphtheria* by the ordinary simple staining methods.

ELECTRICAL STERILISATION OF MILK.—The work on the Electrical Sterilisation of Milk was published as a monograph by the Medical Research Council, and further investigations to test whether the same results may not be obtained by heating alone, without the aid of electricity, are now being started.

WASSERMANN REACTION.—The work on the Wassermann Reaction is being continued, especially the comparison of the method devised in this laboratory with various other methods. The idea of the work is to try

and establish more precise methods of measurement, etc., in order to obtain a greater degree of accuracy. With the enormous amount of routine work in the Venereal Diseases Section of this Department—there is an increase this year of nearly 3,000 specimens—the investigation would not have been possible had I not been fortunate in obtaining the assistance of an University Fellow (the holder of the John William Garrett International Fellowship).

TUBERCULOSIS AND MILK.—This year, in addition to the one mentioned above, there are several other University Research Workers. Of these, the work of two men is of especial interest from the public health side. One of these is carrying on an investigation with the object of determining the period of infection in guinea pigs with tuberculous milk, in the hope of being able to definitely decide whether a milk is tuberculous or not at a much earlier period than the standard now generally used—this work is very promising.

RINGWORM.—Another piece of work is the treatment of cases of apparently intractable ringworm by autogenous vaccines—this work has just been commenced.

ENCEPHALITIS LETHARGICA.—Several cases of Encephalitis Lethargica have been investigated by the Department.

In concluding his Report, Professor Beattie says:—"I would merely add that though the routine work of the department is now very heavy, yet its importance to the health of the City is so great, that it must always take a primary place in the Laboratories. At the same time there are so many problems calling for investigation by people working both in the Laboratory and in the Hospitals that I look forward to the day, which I hope may not be distant, when some workers may be able to devote their whole attention to these Research problems, and that the department may be adequately financed by Scholarships, or other means, and so enabled to command the full-time services of several experienced Research workers who would have free access to hospitals and other institutions where disease is treated."

DISEASES OF ANIMALS.

THE GLANDERS AND FARCY ORDER OF 1907.

During the year 1920 the City was again entirely free from the disease.

Immediate notification of suspected glanders is received either from the owner, police, or the veterinary surgeon who may be called in to the case. As a further safeguard, the Veterinary Superintendent or his assistant examine the lungs of all equines sent to the horse slaughterer's yard (there is only one in the City for this purpose), and it is by these inspections that unreported cases can be discovered.

This precaution is also taken to ensure owners being notified of the existence of the disease which may be in a latent state, and to detect unscrupulous persons who may not conform to the requirements of the Order.

The following table gives the number examined during the past three years:—

| Year | Lungs Examined. | Affected. | Not Affected. |
|------|-----------------|-----------|---------------|
| 1918 | 2,338 | — | 2,338 |
| 1919 | 2,744 | — | 2,744 |
| 1920 | 1,305 | — | 1,305 |

INSPECTION OF HORSE AUCTIONS.

The sale yards in the City have been regularly visited and the animals exposed for sale therein examined for the presence of any contagious disease, under the Glanders Order of 1907, Parasitic Mange Order, 1911 and 1918, and the Epizootic Lymphangitis Order, 1905; also as to their fitness to travel in accordance with the Horses (Importation and Transit) Order of 1913, and the Protection of Animals Act of 1911.

There were 4,197 animals examined, of which 4 were found affected with parasitic mange.

MARKET INSPECTION.

The following number of animals were examined at the Liverpool Cattle Market during the year 1920. The figures for 1919 are also given for comparison:—

| | 1919. | 1920. |
|----------------------|--------|--------|
| Cattle | 7,618 | 5,411 |
| Sheep | 3,720 | 31,948 |
| Pigs | — | — |
| Other Animals | — | — |
| Total | 11,338 | 37,359 |

THE PARASITIC MANGE ORDER OF 1911 AND AMENDMENTORDER OF 1918.

Under this Order, immediate notification of actual or suspected cases of mange in horses is received from the owner, police, horse slaughterers, or veterinary surgeons, who may be called in to the case. The suspected animals are then examined by the Veterinary Department, and also the entire stud when at rest. Affected animals are immediately isolated and kept under observation until the disease has disappeared. Thorough disinfection of the premises, harness, utensils, feeding troughs, etc., is carried out under the supervision of the Veterinary Inspectors.

During the period of the War, this Order, with the exception of regulations relating to the prohibition to expose or move affected animals, was repealed by the Board of Agriculture and Fisheries on August 6th. Owing, however, to the beneficial results obtained during the previous years, the veterinary surgeons and horse owners continued to report the disease. In this way, although having no legal power, the Veterinary Department were able to keep the disease in check wherever it was reported.

Prosecutions were instituted in three cases and convictions obtained in each.

The total number of outbreaks on premises where the disease was found to exist was 221, and the number of visits paid to these premises was 1,989.

In a number of cases infection was traced to horses outside the City.

The following table shows the figures for 1920, with the previous four years for comparison :—

| Year. | Number of Outbreaks. | Number of Animals and Carcases Examined. | Number affected or suspected. | Recovered. | Died or Slaughtered. |
|-------|----------------------|--|-------------------------------|------------|----------------------|
| 1916 | 146 | 8,016 | 303 | 230 | 73 |
| 1917 | 155 | 7,173 | 309 | 200 | 109 |
| 1918 | 105 | 5,864 | 196 | 142 | 54 |
| 1919 | 268 | 3,213 | 493 | 358 | 135 |
| 1920 | 221 | 1,921 | 263 | 189 | 74 |

THE ANTHRAX ORDER OF 1910.

A number of suspected cases of Anthrax were investigated by the Health Department under this Order. Of these, 7 were referred to the Veterinary Department, and, on microscopical examination, anthrax was suspected to exist in 1 case. This was reported to the Board of Agriculture and Fisheries in accordance with the Order and was confirmed.

In connection with the spread of anthrax to farm animals owing to the contamination of cattle food products with the spores of the bacillus during shipment in foreign parts and during the voyage, the staff of the City and Port have kept this matter constantly before them, and systematic enquiries have been made as to the possibility of the contamination of cattle food products. In addition, the Board of Agriculture and Fisheries have issued a notice to shipowners and others concerned, pointing out that special precautions should be adopted when cargo containing animal products likely to be infected (such as hides, hair, wool, etc.) is carried in the holds and other parts of vessels before such places are used for carrying any cargo to be utilised as cattle food.

THE RABIES ORDER OF 1897.

Ten suspected cases of rabies were dealt with under this Order. These were examined by the Veterinary Department and Corporation Bacteriologist and certified to be free from rabies.

THE IMPORTATION OF CANINE ANIMALS ORDER OF 1909.

This Order was issued by the Board of Agriculture in 1909 to control the importation of animals such as wolves and jackals, and so prevent the introduction of rabies by animals other than dogs whose importation was already controlled by the Importation of Dogs Order of 1901.

No examinations were made under this Order during the year.

THE PROTECTION OF ANIMALS ACTS, 1911.

Under this Act the Police have power to call in a veterinary surgeon in cases of cruelty and act upon his advice. The Veterinary Department is consulted under the Act.

EXAMINATION OF HORSES FOR HUMAN FOOD.

There were two shops in the City licensed under the Horse Flesh Act of 1889 for the sale of horse beef for human food at the end of the year.

Premises have been set apart at three slaughter-houses, viz., Carruthers Street, Foley Street, and High Street, Wavertree, for the slaughter of the horses and dressing of the carcasses.

The animals deemed suitable for human consumption are first submitted whilst alive to veterinary examination, and after slaughter the carcasses are examined by the Inspectors of the Medical Officer of Health, and also in many cases by the Veterinary Inspector.

There were 1,669 animals examined by the Veterinary Inspector, 21 of which were condemned alive as being unfit for slaughter for human consumption. Of the remaining 1,648 animals, 1,504 of these were passed for human consumption by the Inspectors of the Medical Officer of Health and 144 were condemned.

LIVERPOOL DOGS' HOME AND CATS' SHELTER.

During the year 1920 the Liverpool Dogs' Home received from the Police, or otherwise, stray dogs to the total of 2,132. There were also brought by their owners to be destroyed 1,045 dogs, and in addition the Home continued its systematic collection of unwanted dogs from owners' houses, and thus brought in 759 more. The total claimed by owners sold to good homes was 1,040, and the surplus, namely, diseased, dangerous and valueless animals, were, by painless method, destroyed, the number being 2,935. Dogs boarded for their owners numbered 365.

The Liverpool Cats' Shelters received, mainly at their Central and Branch Depots, 13,068 cats during 1920, of which 5,968 were diseased or injured. New homes were found for three and three were claimed, while the enormous balance, being entirely unwanted, were painlessly destroyed.

LIVERPOOL HORSES' REST, BROOMFIELD FARM,

BROAD GREEN.

A grazing farm for the rest and recuperation of the working animals of humble owners, at which 58 Horses and Donkeys benefited during 1920.

THE LIVERPOOL ANIMALS' HOSPITAL, LARCH LEA.

The number of attendances recorded on the 1,262 horses, dogs, cats, rabbits, birds of several kinds, &c., was 2,137, and of these 1,224 were discharged either cured or relieved. Accident cases to the number of 113 were brought to the hospital at all hours. The work is now carried on at Larch Lea, Breck Road, and the Attendant resides on the premises, the entrance to which is 17, The Willows, Breck Road, Everton. The Animals' Ambulance responded to 83 calls during the year.

CLEANSING AND SCAVENGING.

The City Engineer has kindly supplied the following information, which indicates the operations carried out by the cleansing staff under his control:—

The work of the Department consists of cleansing and watering the 563 miles of streets within the City, together with their back passages, the periodical emptying of ash-bins, street gullies, street and court-bins and ashpits, and the disposal of the refuse collected therefrom, etc. During 1920 the quantity of refuse collected and disposed of amounted to approximately 392,000 tons; the quantity removed per working day averaging 1,252 tons.

The whole of the 563 miles of streets with their passages are swept weekly, the principal streets, and streets in congested areas, receiving constant daily attention. In addition, certain streets and passages are washed by hose pipe at night time. During 1920 street washing was carried out as follows:—

182 streets washed once a week.

71 streets washed twice a week.

14 streets washed three times a week, and

259 streets washed as occasion required.

and all passages and tunnel entrances to courts were also regularly washed.

On Sunday mornings a number of the principal streets are cleansed.

During 1920, approximately 58,000 tons of street sweepings were collected and disposed of as manure.

In connection with street watering upwards of 10½ million gallons of water were distributed during the season, in addition to the large quantity used for street washing.

272,638 square yards of carriageway were treated with dust-laying compositions, of which 19,583 square yards were in Sefton Park.

The frequent flushing of trough water closets is a sanitary measure, this type of closet being provided principally in the more densely populated areas of the City. The number of trough water closets in existence on 31st December, 1920, was 729.

There are 33 underground urinals with 280 stalls and 150 overground urinals with 541 stalls in Liverpool, which are cleansed and disinfected at least once daily. During the summer season a large number of urinals and trough water closets are cleansed and disinfected twice daily. All private, domestic and office drains are flushed twice a year by the City Engineer's staff.

An improved type of fixture ash-bin was first supplied to Liverpool premises in 1898, and at the end of 1920 the number of bins in use of this type was 82,200, and the number of ashpits had been reduced to approximately 7,500. More than 45,000 loose bins had been supplied to premises unsuitable for fixture bins. In the year 1900 an improved sanitary ash-bin was introduced for the use of courts, some of which have been removed owing to property being demolished. The number in use at the end of the year was 1,342, which are emptied daily. Ash-bins at domestic premises are emptied approximately once weekly, and ashpits about once a month. The Bell-Cart service provides for the daily removal of domestic refuse from shops, business premises, and dwelling-houses, where no provision can conveniently be made for the storage of this description of refuse. This service has to be conducted within limited hours during the morning to suit the convenience of occupiers and the exigencies of business.

Middens have been practically abolished in the Old City, and consequently the operations of the night service are limited to the removal of domestic and office refuse from the neighbourhood of the Exchange, where it is impracticable to perform the work during business hours. 1,308 clearances of ashpits by night were made during 1920, and 1,337 tons of refuse removed.

Horse middens are emptied weekly and abattoir garbage is removed nightly. 2,630 tons of abattoir garbage were removed during 1920.

All ashpit and ash-bin refuse is tipped direct into the carts, and all loaded carts traversing the streets are covered.

The refuse collected is disposed of by burning at six destructors, by disposing at sea, by sale to farmers, and by other use for agricultural purposes. During the year 162,394 tons were burned at the destructors, 57,271 tons were deposited at sea by hopper barge, 42,895 tons were sold to farmers, and 83,479 tons were otherwise disposed of for filling up pits, and agricultural purposes, etc. In addition, approximately 46,000 tons of clinker residue from destructors were used almost entirely in the construction and maintenance of roads, tramways, and in the manufacture of mortar and concrete slabs, etc.

HOUSING.

UNHEALTHY AREAS AND INSANITARY DWELLINGS.

Approximately 6,300 houses unfit for human habitation were dealt with under the Local Acts, up to and including 1904.

Operations under the Housing of the Working Classes Act were commenced in 1901, and up to the present 2,454 insanitary houses have been dealt with under that Act.

No action has been taken since the year 1915, but the Housing Committee are now giving careful consideration to the schemes for demolition and rebuilding, which had been held over on account of war conditions. All insanitary areas still existing in various parts of the City have now been reported on, or included in proposed schemes.

The Areas may therefore be divided into two sections, as follows:—

“ A ”—Unhealthy Areas previously scheduled but not finally disposed of, and

“ B ”—Unhealthy Areas in respect to which no proceedings have yet been taken.

Under the first heading “ A ” the following Areas are comprised, viz.:—

1. Beau Street.
2. Prince Edwin Street.
3. Rathbone Street.
4. Mason Street.
5. Saltney Street and Dublin Street.
6. Blenheim Street.
7. Penrhyn Street.

These Unhealthy Areas were engaging the attention of the Housing Committee prior to the outbreak of War, and but for the War there is no reason to doubt that the whole of them would have been finally dealt

with. Since the conclusion of the War, certain proposals affecting these Areas have come to the front which may facilitate or modify the methods originally proposed for dealing with them.

The present position in respect to these Unhealthy Areas is as follows:

| Date of Representation. | Area. | Original Population. | No. of existing Houses. | No. of Houses occupied. |
|--|-------------------------------------|----------------------|-------------------------|-------------------------|
| 1 March, 1907 | Beau Street | 532 | 128 | 2 |
| 2 June, 1912 | Prince Edwin Street | 737 | 170 | 107 |
| 3 June, 1912 | Rathbone Street | 445 | 125 | 21 |
| 4 June, 1912 | Mason Street | 301 | 91 | 9 |
| 5 June, 1912
Liverpool Housing
Confirmation
Order, 1914 | Saltney Street and
Dublin Street | 558 | 124 | 108 |
| 6 June, 1912 | Blenheim Street | 230 | 48 | 48 |
| 7 June, 1912 | Penrhyn Street | 488 | 116 | 26 |
| | | 3,291 | 802 | 321 |

The obvious difficulty which confronts the Committee in regard to the majority of these Unhealthy Areas is the question of replacing any persons who may be dispossessed, and this in effect limits for the present the activities of the Committee to districts which are already wholly derelict and from which the whole of the inhabitants have gone. Nos. 1 and 2, the Beau Street Area and the Prince Edwin Street Area, come largely within this category.

With regard to Beau Street, demolition is in progress, but final adjustments with the Reconstruction Committee have not yet been settled. As regard Prince Edwin Street the City Council, on the recommendation of the Reconstruction Committee, have now authorised a comprehensive scheme. So soon as an adjustment is reached allocating the relative portions of the Prince Edwin Street Area to the proposed new road and to the proposed new building respectively, the erection of dwellings on the Prince Edwin Street site will be proceeded with, the

derelict portions being dealt with first, to afford accommodation for tenants still resident in the scheduled area, the site of whose dwellings will be dealt with so soon as the new dwellings are ready for occupation.

(3) The propositions in regard to Rathbone Street Area are not yet finally adjusted.

(4) In regard to Mason Street Area the plans for the rebuilding have been approved by the City Council and tenders accepted for the erection of 28 self-contained houses. The work is now in progress.

(5) The number of occupied houses in Saltney Street and Dublin Street preclude further action for the present.

(6) Plans have also been approved and tenders accepted for the erection of 18 Cottage Flats on the Blenheim Street Area.

(7) Plans having been approved and tenders accepted for the erection of 26 self-contained houses in Penrhyn Street, and when these and the Blenheim Street houses are completed the whole of the Scheduled Area in Blenheim Street can be dealt with.

WOOLTON DISTRICT.—The Corporation are also under an obligation to carry out a Housing Scheme in the Added Area of Woolton, and but for the War, this obligation would have been fulfilled.

In the Liverpool (Extension) Order, 1913, an Agreement with the Much Woolton Council, dated March 4th, 1913, is confirmed, which contains the following clause:—

“At least one-third of the Area bounded by Vale Road, Castle Street, Quarry Street, and the Woolton Gas Works, in the Added Area, shall be included in a Scheme of Improvement to be carried out by the Corporation within six years from the commencement of the Order, viz., November 9th, 1913.”

It is proposed to erect 290 self-contained houses on land fronting Long Lane, Garston, which is in close proximity to the Woolton Insanitary Area. This proposal, when given effect to, will greatly facilitate the fulfilment of the obligation in regard to dealing with the Woolton Insanitary Area, since it will afford accommodation for those who will necessarily be displaced pending the reconstruction of that Area.

" B "—Unhealthy Areas in respect to which Schemes have not yet been decided upon are indicated on the accompanying table and are suitable for being dealt with as " Unhealthy Areas " under Part 1 of the Housing of the Working Classes Act, 1909. In each case details are submitted shewing the population, total number of houses, number of insanitary houses, together with the mortality rates.

| Area. | Total Area :
sq. yds. | Popula-
tion. | Total
No. of
Houses. | Number
Insani-
tary. | Number
Sub-let. | AVERAGE DEATH
RATE PER 1,000
FOR SIX YEARS,
1914-1919. | | AVERAGE. | |
|---|--------------------------|------------------|----------------------------|----------------------------|--------------------|---|-------------------|--|---|
| | | | | | | General
Rate. | Phthisis
Rate. | Infant
Mor-
tality
Rate
per 1,000
Births,
1914-
1919. | Birth
Rate
per
1,000
1914-
1919. |
| ft Street | 2,970 | 401 | 82 | 69 | 6 | 23·27 | 2·49 | 112·90 | 25·76 |
| gton Street | 5,800 | 951 | 190 | 184 | 47 | 33·12 | 2·97 | 181·39 | 37·67 |
| Street | 1,430 | 189 | 71 | 42 | 9 | 37·91 | 3·52 | 200·0 | 39·68 |
| Street | 2,320 | 320 | 73 | 28 | 6 | 40·10 | 3·12 | 301·20 | 43·22 |
| Richmond Street | 1,420 | 155 | 34 | 31 | 5 | 46·23 | 2·15 | 413·79 | 31·18 |
| od Street | 3,650 | 306 | 68 | 55 | 18 | 49·18 | 2·72 | 287·50 | 43·57 |
| ce Street | 2,830 | 329 | 65 | 63 | 11 | 21·28 | 0·50 | 162·16 | 37·48 |
| Street | 2,376 | 167 | 34 | 31 | 6 | 43·91 | 3·99 | 250·0 | 35·92 |
| Vernon View ... | 4,170 | 306 | 56 | 36 | 3 | 20·69 | 2·72 | 181·81 | 23·96 |
| Street | 4,126 | 392 | 87 | 44 | 6 | 26·39 | 1·7 | 132·65 | 41·66 |
| Lane | 5,550 | 531 | 98 | 89 | 17 | 27·30 | 1·25 | 191·91 | 31·07 |
| Street | 5,933 | 459 | 104 | 30 | 7 | 30·50 | 2·17 | 171·42 | 38·12 |
| Street | 4,645 | 611 | 118 | 101 | 26 | 35·18 | 2·18 | 263·15 | 31·09 |
| Statistics for the City, and for the Corporation Dwellings during
same period, are as follows :— | | | | | | | | | |
| City | | | | | | 18·24 | 1·61 | 124·0 | 25·52 |
| Corporation Dwellings | | | | | | 26·25 | 1·79 | 165·9 | 42·06 |

With regard to the Bancroft Street Area it is anticipated that the requirements of adjacent works will lead to the demolition of all the insanitary houses, but the present difficulty of obtaining dwellings has delayed operations.

All the insanitary houses in Comus Street Area are Corporation leasehold, and with the exception of approximately 60 square yards, the whole of the area is in possession of the Corporation.

The City Council have decided to deal with the greater portion of the Hopwood Street Area by Presentment under the Liverpool Sanitary Amendment Act, 1864, and when suitable houses are available the work on this Area can be proceeded with.

It was anticipated that the Sutton Trustees might deal with the Burlington Street and Slade Street Areas, but they prefer to use the money at their disposal in the provision of cottages on Garden City lines.

The Medical Officer of Health in a report to the Housing Committee dated July 2nd, 1920, expressed the opinion that the preliminary steps should be taken in respect to the Unhealthy Areas " B " which have not yet been dealt with, in order to obtain the full benefit of the financial assistance which will be given by the Ministry of Health towards the reconstruction of Unhealthy Areas under Part 1 of the Housing of the Working Classes Act.

These preliminary steps would not involve further proceedings until dwellings are available for the dispossessed.

Approximately 2,585 houses now remain to be dealt with. These are mainly of the back-to-back type, the majority being court houses. Of this number approximately 930 houses are so grouped together as to be suitable for being dealt with as an " Unhealthy Area "; the remainder would require to be dealt with by Closing Orders when houses are available for the dispossessed.

NEW DWELLINGS.

The Housing Committee have entered into contracts for the erection of the following dwelling-houses:—

| | "A" * | "B" * |
|----------------------------------|-------------|-------------|
| Elms House Estate | 252 | — |
| Larkhill Estate and Clubmoor ... | 560 | 2,246 |
| Edge Lane Drive Estate | 200 | 382 |
| Fazakerley Estate | 106 | 130 |
| Allerton | 668 | 1,332 |
| Private Enterprise | — | 554 |
| Penrhyn Street | 26 | — |
| Mason Street | 28 | — |
| | <hr/> 1,840 | <hr/> 4,644 |

Of the above 234 "A" type and 348 "B" type (582 in all), have been completed and are occupied; while 665 "A" type and 1845 "B" type (2,510 in all) are in course of erection.

| | "A" | "B" | Total |
|---------------------------|-----------|-------------|-------------|
| Completed | 234 | 348 | 582 |
| In course of erection ... | 665 | 1,845 | 2,520 |
| Total | <hr/> 899 | <hr/> 2,193 | <hr/> 3,092 |
| Thus there are | 941 | 2,451 | 3,392 |
| houses not yet commenced. | | | |

In addition to the above, 488 military huts have been converted for temporary occupation as dwellings on a site at Knotty Ash formerly used as a military camp, of these 487 are tenanted.

UNOCCUPIED HOUSES.

According to a return submitted by the Chief Constable the number of unoccupied houses in Liverpool at the end of 1919 was 304. The houses referred to in the return have since been revisited, and only 145 are now unoccupied (24 in addition have been demolished).

The number of unoccupied houses at rents of 5s. and under per week was 1, and over 5s. and under 8s. per week was 14, making a total of 15, all of which are insanitary.

Of the 15 insanitary houses 2 are situated in unhealthy areas, and have been scheduled for demolition.

* "A" Type contains 1 Living Room and 3 Bedrooms.

* "B" Type contains 1 Living Room, Parlour and 3 Bedrooms.

RE-HOUSING.

The number of dwellings provided by the Corporation up to the present is 2,863, their situations and dates of opening are as follows:—

| Situation. | Date
Opened. | Number of
Tenements. |
|---------------------------------------|-----------------|-------------------------|
| St. Martin's Cottages | 1869 | 124 |
| Victoria Square | 1885 | 270 |
| Juvenal Dwellings | 1891 | 101 |
| Arley Street | 1897 | 46 |
| | (1902/3) | |
| Gildart's Gardens | 1897 | 229 |
| | 1904 | |
| Dryden Street | 1901 | 181 |
| Kempston Street | 1902 | 79 |
| Kew Street | 1902/3 | 114 |
| Adlington Street Area | 1902/3 | 272 |
| Stanhope Cottages | 1904 | 60 |
| Mill Street | 1904 | 55 |
| Hornby Street | 1904 | 449 |
| | 1906/7 | |
| Clive Street and Shelley Street | 1905 | 84 |
| Eldon Street | 1905 | 12 |
| Upper Mann Street | 1905/6 | 87 |
| Combermere Street | 1909 | 49 |
| Burlington Street | 1910 | 114 |
| Saltney Street | 1911 | 48 |
| Grafton Street | 1911 | 60 |
| Bevington Street Area | 1912 | 218 |
| Northumberland Street Area | 1913 | 68 |
| St. Anne Street Area | 1914 | 72 |
| Gore Street | 1916 | 24 |
| Jordan Street | 1916 | 31 |
| Sparling Street | 1916 | 16 |
| Total | — | 2,863 |

DESCRIPTION OF TENEMENTS.

| | | | | | |
|------------------------------|-----|-----|-----|-----|-------|
| Number of 1 roomed dwellings | ... | ... | ... | ... | 193 |
| Number of 2 roomed dwellings | ... | ... | ... | ... | 1,283 |
| Number of 3 roomed dwellings | ... | ... | ... | ... | 1,105 |
| Number of 4 roomed dwellings | ... | ... | ... | ... | 282 |

 2,863

| | | | | | |
|--|-----|-----|-----|-----|----|
| Number of self-contained dwellings (included in above) | ... | ... | ... | ... | 79 |
| Number of shops | ... | ... | ... | ... | 32 |

RENTALS.

The rentals of the tenements vary from 2s. 5d. to 8s. 6d., and those of the self-contained cottages from 8s. 6d. to 9s. 10½d. per week.

CORPORATION TENEMENTS.

VITAL STATISTICS.

Comparative Table.

ALL DWELLINGS.

| | | | | |
|------------------|-----|-----|-----|--------|
| Population, 1915 | ... | ... | ... | 11,393 |
| Population, 1916 | ... | ... | ... | 11,334 |
| Population, 1917 | ... | ... | ... | 11,897 |
| Population, 1918 | ... | ... | ... | 12,139 |
| Population, 1919 | ... | ... | ... | 12,286 |
| Population, 1920 | ... | ... | ... | 12,664 |

| | 1915. | | 1916. | | 1917. | | 1918. | | 1919. | | 1920. | |
|---------------------------|---------------|-------------------|---------------|-------------------|---------------|-------------------|---------------|-------------------|---------------|-------------------|---------------|-------------------|
| | Total number. | Rate per 1,000. | Total number. | Rate per 1,000. | Total number. | Rate per 1,000. | Total number. | Rate per 1,000. | Total number. | Rate per 1,000. | Total number. | Rate per 1,000. |
| Births | 524 | 45.9 | 462 | 40.7 | 462 | 38.8 | 424 | 34.9 | 438 | 35.6 | 583 | 46.03 |
| Deaths | 307 | 26.9 | 327 | 28.8 | 259 | 21.7 | 358 | 29.4 | 262 | 21.3 | 279 | 22.03 |
| Infantile Mortality | 95 | 181.2 | 75 | 162.3 | 70 | 151.5 | 73 | 172.1 | 62 | 141.5 | 92 | 157.80 |
| Deaths under 1 year | | per 1,000 Births. | | per 1,000 Births. | | per 1,000 Births. | | per 1,000 Births. | | per 1,000 Births. | | per 1,000 Births. |
| Phthisis | 20 | 1.7 | 22 | 1.9 | 18 | 1.5 | 27 | 2.2 | 24 | 1.9 | 26 | 2.05 |

CORPORATION TENEMENTS.

VITAL STATISTICS.

Comparative Table.

RESTRICTED DWELLINGS.

| | | | | |
|------------------|-----|-----|-----|--------|
| Population, 1915 | ... | ... | ... | 9,511 |
| Population, 1916 | ... | ... | ... | 9,461 |
| Population, 1917 | ... | ... | ... | 10,027 |
| Population, 1918 | ... | ... | ... | 10,235 |
| Population, 1919 | ... | ... | ... | 10,324 |
| Population, 1920 | ... | ... | ... | 10,642 |

| | 1915. | | 1916. | | 1917. | | 1918. | | 1919. | | 1920. | |
|---------------------------|---------------|-------------------|---------------|-------------------|---------------|-------------------|---------------|--------------------|---------------|-------------------|---------------|-------------------|
| | Total number. | Rate per 1,000. | Total number. | Rate per 1,000. | Total number. | Rate per 1,000. | Total number. | Rate per 1,000. | Total number. | Rate per 1,000. | Total number. | Rate per 1,000. |
| Births | 432 | 45.4 | 378 | 39.9 | 380 | 37.8 | 357 | 34.8 | 371 | 35.9 | 485 | 45.57 |
| Deaths | 267 | 28.0 | 277 | 29.2 | 226 | 22.5 | 308 | 30.09 | 220 | 21.3 | 240 | 22.55 |
| Infantile Mortality | 82 | 189.8 | 60 | 158.7 | 62 | 163.1 | 63 | 176.4 | 52 | 140.1 | 81 | 167.01 |
| Deaths under 1 year | | per 1,000 Births. | | per 1,000 Births. | | per 1,000 Births. | | per 1,000 Birth s. | | per 1,000 Births. | | per 1,000 Births. |
| Phthisis | 17 | 1.7 | 21 | 2.2 | 16 | 1.5 | 23 | 2.2 | 20 | 1.9 | 22 | 2.06 |

CORPORATION TENEMENTS.

VITAL STATISTICS.

Comparative Table.

UNRESTRICTED DWELLINGS.

| | | | | |
|------------------|-----|-----|-----|-------|
| Population, 1915 | ... | ... | ... | 1,882 |
| Population, 1916 | ... | ... | ... | 1,873 |
| Population, 1917 | ... | ... | ... | 1,870 |
| Population, 1918 | ... | ... | ... | 1,904 |
| Population, 1919 | ... | ... | ... | 1,962 |
| Population, 1920 | ... | ... | ... | 2,022 |

| | 1915. | | 1916. | | 1917. | | 1918. | | 1919. | | 1920. | |
|---------------------------|---------------|-------------------|---------------|-------------------|---------------|-------------------|---------------|-------------------|---------------|-------------------|---------------|-------------------|
| | Total number. | Rate per 1,000. | Total number. | Rate per 1,000. | Total number. | Rate per 1,000. | Total number. | Rate per 1,000. | Total number. | Rate per 1,000. | Total number. | Rate per 1,000. |
| Births | 92 | 48·8 | 84 | 44·8 | 82 | 43·8 | 67 | 35·1 | 67 | 34·1 | 98 | 48·46 |
| Deaths | 40 | 21·2 | 50 | 26·6 | 33 | 17·6 | 50 | 26·2 | 42 | 21·4 | 39 | 19·28 |
| Infantile Mortality | 13 | 141·3 | 15 | 178·5 | 8 | 97·5 | 10 | 149·2 | 10 | 149·2 | 11 | 112·24 |
| Deaths under 1 year | | per 1,000 Births. | | per 1,000 Births. | | per 1,000 Births. | | per 1,000 Births. | | per 1,000 Births. | | per 1,000 Births. |
| Phthisis | 3 | 1·5 | 1 | 0·5 | 2 | 1·0 | 4 | 2·1 | 4 | 2·03 | 4 | 1·9 |

CORPORATION TENEMENTS.

VITAL STATISTICS.

ALL DWELLINGS.

Statistics as to Birth Rate and Infantile Mortality Rate in Corporation Dwellings as a whole for the four years 1917 to 1920 :—

| Year | Birth
Rate per 1,000
of population. | Infantile Mortality.
Deaths under 1 year
per 1,000 births. |
|-----------|---|--|
| 1917..... | 38·8 | 151·5 |
| 1918..... | 34·9 | 172·1 |
| 1919..... | 35·6 | 141·5 |
| 1920..... | 46·03 | 157·8 |

CORPORATION TENEMENTS.

ALL DWELLINGS.

| | | |
|---|--------|--------|
| Average Birth Rate for the 4 years 1917 to 1920 | ... | 38·92 |
| Average Death Rate for the 4 years 1917 to 1920 | ... | 23·63 |
| Average Infantile Mortality Rate (under 1 year) | | |
| 1917 to 1920 | ... .. | 155·74 |
| Average Phthisis Death Rate for the 4 years 1917 to | | |
| 1920 | ... .. | 1·9 |

During the past fifteen years 3,037 insanitary dwellings have been demolished, 42 have been closed and await demolition or reconstruction, and 688 have been reconstructed and rendered sanitary, making a total for the fifteen years (excluding those still occupied) of 3,767 as follows:

| | | | | | | |
|------------------|-----|-----|-----|-----|-----|-------------|
| 1906 | ... | ... | ... | ... | ... | 1159 |
| 1907 | ... | ... | ... | ... | ... | 400 |
| 1908 | ... | ... | ... | ... | ... | 320 |
| 1909 | ... | ... | ... | ... | ... | 380 |
| 1910 | ... | ... | ... | ... | ... | 336 |
| 1911 | ... | ... | ... | ... | ... | 193 |
| 1912 | ... | ... | ... | ... | ... | 515 |
| 1913 | ... | ... | ... | ... | ... | 168 |
| 1914 | ... | ... | ... | ... | ... | 236 |
| 1915 | ... | ... | ... | ... | ... | 60 |
| 1916-17-18-19-20 | ... | ... | ... | ... | ... | — |
| Total | | | | | | <u>3767</u> |

On the 31st December, 1912, there were 1,614 cellars let as separate dwellings.

All of the cellars have been re-visited with the following results:—

| | | | | | |
|--|-----|-----|-----|-----|-----|
| Number at present unoccupied | ... | ... | ... | ... | 764 |
| Number occupied as kitchens or wash-cellars | ... | ... | ... | ... | 410 |
| Number occupied as a kitchen and separately let with the front parlour | ... | ... | ... | ... | 111 |
| Number permanently closed | ... | ... | ... | ... | 208 |
| Number demolished | ... | ... | ... | ... | 9 |
| Number of cellars occupied as separate dwellings, 31st March, 1921 | ... | ... | ... | ... | 112 |

The Building Surveyor has kindly furnished the following Return of Houses erected in the City:—

RETURN OF HOUSES ERECTED 1900-1920.

| | 1900 | 1901 | 1902 | 1903 | 1904 | 1905 | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 |
|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|
| Under £12 | ... | 222 | 85 | 201 | 258 | 78 | 243 | 115 | ... | 149 | ... | 132 | ... | 68 | 37 | ... | 6 | ... | ... | ... | ... |
| £12 to £18 | 436 | 558 | 590 | 363 | 284 | 394 | 547 | 609 | 418 | 283 | 119 | 151 | 41 | 92 | 38 | 21 | 49 | 1 | ... | ... | ... |
| £18 to £25 | 602 | 633 | 962 | 1,058 | 1,067 | 872 | 1,039 | 1,022 | 1,102 | 1,369 | 1,279 | 768 | 717 | 537 | 539 | 337 | 99 | 16 | 1 | ... | ... |
| £25 to £35 | 402 | 441 | 323 | 706 | 449 | 638 | 422 | 444 | 195 | 191 | 168 | 109 | 64 | 43 | 147 | 83 | 18 | 2 | ... | ... | ... |
| £35 and upwards.. | 133 | 109 | 101 | 125 | 116 | 204 | 202 | 152 | 135 | 157 | 144 | 74 | 56 | 27 | 74 | 57 | 14 | 3 | ... | 11 | 276 |
| | 1,573 | 1,963 | 2,061 | 2,453 | 2,174 | 2,186 | 2,453 | 2,342 | 1,850 | 2,149 | 1,710 | 1,234 | 878 | 767 | 835 | 498 | 186 | 22 | 1 | 11 | 276 |

NUMBER OF HOUSES ERECTED AND TAKEN DOWN
DURING THE YEAR ENDING DECEMBER, 1920.

| DISTRICTS. | Number
Erected. | Number
Taken Down. |
|--------------------------|--------------------|-----------------------|
| Scotland... .. | — | 4 |
| Exchange | — | 2 |
| Abercromby | — | 61 |
| Everton | — | 278 |
| Kirkdale... .. | — | — |
| West Derby (West) | — | 94 |
| Toxteth | — | — |
| Walton | 55 | — |
| West Derby (East) | 122 | — |
| Wavertree | 14 | — |
| Toxteth (East) | 14 | — |
| Garston | 50 | — |
| Fazakerley | 6 | — |
| Woolton | 15 | — |
| Totals... .. | 276 | 439 |

Of the 276 dwelling-houses erected during 1920, 242 were built under the direction of the Housing Department, these forming parts of Government assisted schemes.

Of the 439 houses taken down, 396 were demolished under the direction of the Housing Committee and the Estate Committee, all of which houses had been unoccupied for a considerable time and were judged to be quite unfit for habitation. The sites of these houses are being reserved for housing schemes. The remaining 43 taken down were either dilapidated and uninhabited or were found to be in such a dangerous condition as to necessitate their demolition.

PARLIAMENTARY POWERS.

The following matters were referred to the Town Clerk with a view to the necessary Parliamentary Powers being obtained in respect to them:—

1. To ensure continuity of treatment of patients suffering from Venereal Diseases in a communicable form and to prevent the spread of such disease.

2. Registration and supervision of lying-in Homes.

3. To make Bye-laws for the conveyance of the carcasses of dead horses through the public streets.

4. To make Bye-laws for prohibiting the manufacture, preparation, storage, transport or exposure for sale of any article intended to be sold for food for man in such a manner as to render such article liable to infection or contamination by dust, flies, animals or offensive matter.

5. To deal with diseased, starved, and worthless cats and dogs.

6. On the occasion of an outbreak of Infectious Disease, to prevent children assembling in Sunday School, Cinemas, and other places of amusement.

7. For the removal to a suitable hospital of persons about to be discharged from Gaols, Poor Law Institutions, or Asylums, and who are at the time under Medical treatment for Venereal Disease in a communicable form.

8. To prohibit infected persons, or persons living in houses in which there is a case of infectious disease, carrying on a business connected with food.

9. To medically examine inmates of Common Lodging-houses where infectious disease is believed to exist.

10. To extend the provisions of Section 44 of the Liverpool Corporation Act, 1902 (Street Vendors of Ice Cream, Fried Fish, to have their names painted on side of cart, barrow or stand), to all food purveyors in streets.

11. To make further provision in respect to the service of Notices and applying for the provisions of Section 267 of the Public Health Act, 1875, to be made applicable.

12. To obtain additional powers for the cleansing of verminous parents where there is evidence of the children being found constantly verminous. This section should give the necessary power of entry, and provide a penalty in the case of obstruction.

13. To obtain additional powers to ensure that houses infested with vermin should be cleansed by the occupier or by the owner.

14. To provide that Ashbins shall be kept in good repair by owners or tenant.

15. To enable the Deputy Medical Officer of Health or other officer appointed to take proceedings to act on behalf of the Medical Officer.

16. To make provision that on the Certificate of the Medical Officer of Health the abolition of ashpits shall be enforced and ashbins provided in their place.

17. To provide a penalty against the occupier of a house for wilful damage to the drains or water-closet, or the improper use of same.

18. To simplify the procedure in respect to the serving of Notices under the Liverpool Corporation (General Powers) Act, 1908, Section 28.

19. To prohibit the re-letting of houses scheduled as insanitary, and to prevent the erection of undesirable buildings on the sites of insanitary property in cases where compensation has not been paid.

20. To facilitate the reconstruction, alteration, or demolition of property, which is rendered insanitary by defective arrangements of outbuildings, and which reasonably admit of improvement by structural alteration.

21. To provide that foreign-going steamers whilst in dock shall be amenable to the provisions of the local Act dealing with smoke prevention.

22. To provide that the occupier of a cowshed within the City shall be required to notify the Medical Officer of Health in the event

of sickness or injury amongst the cattle when the emergency slaughter of cattle for human food has become necessary.

23. To provide penalty for contraventions of Section 47 and 48 of the Liverpool Improvement Act, 1867, relating to the inspection of premises licensed by the Health Committee.

24. To provide that in the event of the Milk and Dairies (Consolidation) Act, 1915, being repealed, all existing powers of the local Acts with regard to milk supply shall be continued.

25. To prevent injury to health caused by unnecessary noise (animals, street vendors, etc.).

26. To provide for the location and control of new stables.

27. To provide for the authorisation of proceedings to suppress serious nuisances prior to confirmation by the Health Committee.

28. To secure protection of and minimise waste of foodstuffs from contamination by dust, vermin (rats), etc., in case of premises where food is prepared and stored.

29. For the better control of Fried Fish Shops.

30. For the further control of slaughtering animals and method of handling dead meat.

31. For the better sanitary provision, water supply, sinks, etc., in houses let in lodgings, offices, workshops. For marking specifically "Drinking" tap direct from the main in dwelling-houses, factories, workshops, offices, etc.

32. To provide that the houses let in lodgings shall be inspected and approved prior to registration, as in the case of Common Lodging-houses.

33. For regulating the hours of employment of young persons.

34. For the registration of Undertakers and the control of Private Mortuaries.

35. For the control of premises used as Grottoes in which animals, e.g., Donkeys, Monkeys, etc., are temporarily housed.

APPENDIX.

PROPOSED LEGISLATION IN REGARD TO VENEREAL DISEASE.

The following is the form in which the clauses were finally drawn up so that the Parliamentary Committee could consider them and form a definite opinion as to the advisability of their acceptance:—

The expression “ venereal disease ” means gonorrhœa gonorrhœal ophthalmia syphilis soft chancre venereal warts or venereal granuloma :

The expression “ medical adviser ” means a duly qualified medical practitioner practising within the City :

The expression “ treatment ” means medical treatment by a medical practitioner or medical adviser :

Any reference to a medical practitioner or medical adviser shall in any case where a person attends for treatment at a hospital centre or other place provided by the Corporation mean the medical practitioner of such hospital centre or other place for the time being in charge of cases of venereal disease thereat :

“ Person ” means any person for the time being resident within the City except where used in conjunction with the word “ any.”

The Corporation may make effective provision for the gratuitous reception, accommodation, examination and treatment of persons suffering from venereal disease and may do or provide any such other act or thing, as may in the opinion of the Corporation be necessary, for securing such effective provision as aforesaid.

Every person suffering from any venereal disease as soon as he is aware or has reason to believe that he is suffering from such disease shall forthwith consult a medical adviser with respect thereto and shall furnish to him his correct name and address and shall place himself under his treatment.

Every such person shall until he has received a certificate of freedom from infection in accordance with the provisions of this Part of this Act or until he has ceased to be resident within the City continue to attend or cause himself to be attended by his medical adviser at least once in every two weeks or at such other shorter interval as may be prescribed by the Minister of Health and shall as far as possible follow the advice given and carry out the treatment prescribed by such medical adviser.

If such person shall at any time decide to change his medical adviser or if the medical adviser treating such person die or for any reason be unable or unwilling to attend him further, then such person shall forthwith consult and place himself under the treatment of another medical adviser and immediately after so doing shall inform his new medical adviser of his correct name and address, and of the name and address of his last previous medical adviser, and the medical adviser so informed shall thereupon send a notification of the change made by such person to such previous medical adviser if he be alive.

Any person offending against or failing to comply with any of the provisions of this section shall be liable to a penalty not exceeding twenty shillings in respect of each day during or in which he so offends or fails to comply.

Any parent guardian or any person in charge of any child or defective suffering from any venereal disease who knows or has reason to believe that such child or defective is so suffering, shall cause such child or defective to be treated for such disease by a medical adviser and to carry out and continue such treatment in accordance with the provisions of this Part of this Act relating to persons suffering from venereal disease.

In this section the expression "child" means a person under the age of sixteen years and the expression "defective" means a person who would be deemed to be a defective under the provisions of Section 1 of the Mental Deficiency Act 1913 and in either case resident within the City.

Any parent guardian or any person as aforesaid offending against or failing to comply with any of the provisions of this section shall be liable to a penalty not exceeding twenty shillings in respect of each day during or in which he so offends or fails to comply.

Every medical adviser attending or treating a person who is suffering from any venereal disease in an infectious stage—

Shall by written notice direct the attention of such person to the infectious character of the disease and to the necessity of continuing treatment until free from liability to infect in respect thereof and to the penalties prescribed by this Part of this Act for infecting any other person with such disease :

Shall when such person informs such medical adviser that he intends to change his medical adviser issue to such person a treatment card containing particulars of the stage of treatment which such person has reached for the information of the new medical adviser :

Shall when such person shall have ceased to be liable to convey infection in respect thereof, and on being satisfied of the fact, issue to such person a certificate accordingly :

Shall in the event of such person not having received from such medical adviser a certificate of cesser of liability to infect in respect thereof failing to consult or attend such medical adviser for a period of three weeks and of such medical adviser not having received within that period from another medical adviser a notice that such person has changed his medical adviser send to the medical officer a notice of the facts stating the name and address of such person.

The Corporation shall supply to any medical adviser on demand for the purposes of this Part of this Act cards and certificates in blank in such form as the Corporation with the approval of the Minister of Health may prescribe and shall subject to such regulations as may be prescribed with respect thereto by the Minister of Health pay to any medical adviser in private practice for each such card or certificate issued by him such sum as shall be prescribed in such regulations.

Any medical adviser issuing any certificate knowing the same to be false in any particular shall be liable to a penalty not exceeding fifty pounds.

The medical officer upon receipt from any medical adviser of a notice under the provisions of the section of this Act of which the marginal note is "As to duties of medical adviser" shall make inquiries of the

person named in such notice as to the reason of such person's discontinuance of treatment and unless satisfied of the existence of any adequate reason therefor shall lay an information against such person before a court of summary jurisdiction.

Upon the hearing of any such information the court if satisfied that the person named therein is suffering from any venereal disease in an infectious stage and is not undergoing treatment in respect thereof may make an order requiring such person forthwith to resume treatment in respect of such disease and to continue such treatment until he has received a certificate of freedom from infection in accordance with the provisions of this Part of this Act.

Any person not complying with any such order shall upon summary conviction be liable to a penalty not exceeding one hundred pounds or to imprisonment for not more than six months with or without hard labour or to both such penalty and imprisonment.

Any person in charge of any hospital workhouse gaol asylum or other public institution within the City shall at least forty-eight hours prior to the discharge therefrom of any person therein undergoing treatment in respect of any venereal disease inform the medical officer in writing of the date on which such person is intended to be discharged.

The Corporation may remove any such person on his discharge from such hospital workhouse gaol asylum or other public institution to any hospital or other place provided by the Corporation.

If any such person is found to be suffering from any venereal disease in an infectious stage and is in the opinion of the medical officer or other medical adviser called in by or on behalf of the medical officer likely unless detained to infect any other persons such person (subject to the provisions of this section) may be detained in such hospital or other place until he has ceased to be liable to convey infection in respect of such disease.

Any person so detained may from time to time apply in writing to a court of summary jurisdiction to be examined by two medical advisers and thereupon the court shall direct two or more medical advisers named in the order (one of whom shall be nominated by the medical officer and

the other by or on behalf of the person detained) to examine such person accordingly and report the result of such examination to the court and any person in whose charge such person is shall permit such examination.

After considering such report the court shall unless of opinion that such person is still liable to convey infection in respect of such disease and is likely unless detained to infect others, order the release of such person from detention and he shall be released accordingly.

No such application shall be made by any person so detained within less than three months after he has made a like prior application.

Any person who knowingly infects any other person with a venereal disease or knowingly does or permits or suffers any act likely to lead to the infection of any such other person with any such disease shall be liable upon summary conviction to a penalty not exceeding one hundred pounds or to imprisonment with or without hard labour for not more than twelve months or to both such penalty and imprisonment.

All proceedings in any court in respect of any offence committed against or under the provisions of this Part of this Act or anything arising thereunder shall be heard in camera and any person publishing in any newspaper any report of any such proceedings shall be liable to a penalty not exceeding fifty pounds.

Any and every person employed in the administration or execution of this Part of this Act shall preserve secrecy with regard to all matters that may come to his knowledge in consequence of such employment and shall not communicate any such matter to any other person except in the performance of his duties under this Part of this Act.

Any person offending against the provisions of this section shall be liable to a penalty not exceeding one hundred pounds.

All expenses incurred by the Corporation in carrying into execution the provisions of this Part of this Act shall be chargeable upon the general rate.

the other in person (behalf of the person detained) to examine such person and report the result of such examination to the court and the person in whose charge such person is shall permit such examination. After considering such report the court shall advise of opinion that such person is still liable to convey detention in respect of such offence and is likely again to offend, or, if not, the release of such person from detention and he shall be released accordingly.

Any application shall be made by any person so detained within less than three months after he has made a like prior application.

Any person who knowingly induces any other person with a view to the release or knowingly does or permits or suffers any act likely to lead to the release of any such person with any such charge shall be liable upon summary conviction to a penalty not exceeding one hundred pounds or to imprisonment with or without hard labour for not more than twelve months or to both such penalty and imprisonment.

All proceedings in any court in respect of any offence committed under or under the provisions of this Part of the Act or anything done thereunder shall be heard in camera and any person publishing in any newspaper any report of any such proceedings shall be liable to a penalty not exceeding fifty pounds.

Any and every person employed in the administration or execution of this Part of the Act shall preserve secrecy with regard to all matters that may come to his knowledge in consequence of such employment and shall not communicate any such matter to any other person except in the performance of his duties under this Part of the Act.

Any person offending against the provisions of this section shall be liable to a penalty not exceeding one hundred pounds. All expenses incurred by the Commission in carrying into execution the provisions of this Part of the Act shall be chargeable upon the general rate.

And further in regard to the said Part of the Act, it is hereby enacted that the Commission shall have power to make such regulations as they may think fit for the better carrying into effect the provisions of this Part of the Act.

The fo
the Min

YEAR.

1

1915.....

1916.....

1917.....

1918.....

CITY OF LIVERPOOL

TABLE I

STATISTICS OF WHOLE-SALE IMPORTS

| Year | Wine | Beer | Spices | Tea | Coffee | Sugar | Oil | Flour | Wool | Iron | Steel | Coal | Gas | Electricity | Other |
|------|-------|-------|--------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|-------|
| 1900 | 1,200 | 2,500 | 1,500 | 1,000 | 800 | 1,200 | 1,500 | 1,000 | 1,200 | 1,500 | 1,000 | 1,200 | 1,500 | 1,000 | 1,200 |
| 1901 | 1,300 | 2,600 | 1,600 | 1,100 | 900 | 1,300 | 1,600 | 1,100 | 1,300 | 1,600 | 1,100 | 1,300 | 1,600 | 1,100 | 1,300 |
| 1902 | 1,400 | 2,700 | 1,700 | 1,200 | 1,000 | 1,400 | 1,700 | 1,200 | 1,400 | 1,700 | 1,200 | 1,400 | 1,700 | 1,200 | 1,400 |
| 1903 | 1,500 | 2,800 | 1,800 | 1,300 | 1,100 | 1,500 | 1,800 | 1,300 | 1,500 | 1,800 | 1,300 | 1,500 | 1,800 | 1,300 | 1,500 |
| 1904 | 1,600 | 2,900 | 1,900 | 1,400 | 1,200 | 1,600 | 1,900 | 1,400 | 1,600 | 1,900 | 1,400 | 1,600 | 1,900 | 1,400 | 1,600 |
| 1905 | 1,700 | 3,000 | 2,000 | 1,500 | 1,300 | 1,700 | 2,000 | 1,500 | 1,700 | 2,000 | 1,500 | 1,700 | 2,000 | 1,500 | 1,700 |
| 1906 | 1,800 | 3,100 | 2,100 | 1,600 | 1,400 | 1,800 | 2,100 | 1,600 | 1,800 | 2,100 | 1,600 | 1,800 | 2,100 | 1,600 | 1,800 |
| 1907 | 1,900 | 3,200 | 2,200 | 1,700 | 1,500 | 1,900 | 2,200 | 1,700 | 1,900 | 2,200 | 1,700 | 1,900 | 2,200 | 1,700 | 1,900 |
| 1908 | 2,000 | 3,300 | 2,300 | 1,800 | 1,600 | 2,000 | 2,300 | 1,800 | 2,000 | 2,300 | 1,800 | 2,000 | 2,300 | 1,800 | 2,000 |
| 1909 | 2,100 | 3,400 | 2,400 | 1,900 | 1,700 | 2,100 | 2,400 | 1,900 | 2,100 | 2,400 | 1,900 | 2,100 | 2,400 | 1,900 | 2,100 |
| 1910 | 2,200 | 3,500 | 2,500 | 2,000 | 1,800 | 2,200 | 2,500 | 2,000 | 2,200 | 2,500 | 2,000 | 2,200 | 2,500 | 2,000 | 2,200 |
| 1911 | 2,300 | 3,600 | 2,600 | 2,100 | 1,900 | 2,300 | 2,600 | 2,100 | 2,300 | 2,600 | 2,100 | 2,300 | 2,600 | 2,100 | 2,300 |
| 1912 | 2,400 | 3,700 | 2,700 | 2,200 | 2,000 | 2,400 | 2,700 | 2,200 | 2,400 | 2,700 | 2,200 | 2,400 | 2,700 | 2,200 | 2,400 |
| 1913 | 2,500 | 3,800 | 2,800 | 2,300 | 2,100 | 2,500 | 2,800 | 2,300 | 2,500 | 2,800 | 2,300 | 2,500 | 2,800 | 2,300 | 2,500 |
| 1914 | 2,600 | 3,900 | 2,900 | 2,400 | 2,200 | 2,600 | 2,900 | 2,400 | 2,600 | 2,900 | 2,400 | 2,600 | 2,900 | 2,400 | 2,600 |
| 1915 | 2,700 | 4,000 | 3,000 | 2,500 | 2,300 | 2,700 | 3,000 | 2,500 | 2,700 | 3,000 | 2,500 | 2,700 | 3,000 | 2,500 | 2,700 |
| 1916 | 2,800 | 4,100 | 3,100 | 2,600 | 2,400 | 2,800 | 3,100 | 2,600 | 2,800 | 3,100 | 2,600 | 2,800 | 3,100 | 2,600 | 2,800 |
| 1917 | 2,900 | 4,200 | 3,200 | 2,700 | 2,500 | 2,900 | 3,200 | 2,700 | 2,900 | 3,200 | 2,700 | 2,900 | 3,200 | 2,700 | 2,900 |
| 1918 | 3,000 | 4,300 | 3,300 | 2,800 | 2,600 | 3,000 | 3,300 | 2,800 | 3,000 | 3,300 | 2,800 | 3,000 | 3,300 | 2,800 | 3,000 |
| 1919 | 3,100 | 4,400 | 3,400 | 2,900 | 2,700 | 3,100 | 3,400 | 2,900 | 3,100 | 3,400 | 2,900 | 3,100 | 3,400 | 2,900 | 3,100 |
| 1920 | 3,200 | 4,500 | 3,500 | 3,000 | 2,800 | 3,200 | 3,500 | 3,000 | 3,200 | 3,500 | 3,000 | 3,200 | 3,500 | 3,000 | 3,200 |
| 1921 | 3,300 | 4,600 | 3,600 | 3,100 | 2,900 | 3,300 | 3,600 | 3,100 | 3,300 | 3,600 | 3,100 | 3,300 | 3,600 | 3,100 | 3,300 |
| 1922 | 3,400 | 4,700 | 3,700 | 3,200 | 3,000 | 3,400 | 3,700 | 3,200 | 3,400 | 3,700 | 3,200 | 3,400 | 3,700 | 3,200 | 3,400 |
| 1923 | 3,500 | 4,800 | 3,800 | 3,300 | 3,100 | 3,500 | 3,800 | 3,300 | 3,500 | 3,800 | 3,300 | 3,500 | 3,800 | 3,300 | 3,500 |
| 1924 | 3,600 | 4,900 | 3,900 | 3,400 | 3,200 | 3,600 | 3,900 | 3,400 | 3,600 | 3,900 | 3,400 | 3,600 | 3,900 | 3,400 | 3,600 |
| 1925 | 3,700 | 5,000 | 4,000 | 3,500 | 3,300 | 3,700 | 4,000 | 3,500 | 3,700 | 4,000 | 3,500 | 3,700 | 4,000 | 3,500 | 3,700 |
| 1926 | 3,800 | 5,100 | 4,100 | 3,600 | 3,400 | 3,800 | 4,100 | 3,600 | 3,800 | 4,100 | 3,600 | 3,800 | 4,100 | 3,600 | 3,800 |
| 1927 | 3,900 | 5,200 | 4,200 | 3,700 | 3,500 | 3,900 | 4,200 | 3,700 | 3,900 | 4,200 | 3,700 | 3,900 | 4,200 | 3,700 | 3,900 |
| 1928 | 4,000 | 5,300 | 4,300 | 3,800 | 3,600 | 4,000 | 4,300 | 3,800 | 4,000 | 4,300 | 3,800 | 4,000 | 4,300 | 3,800 | 4,000 |
| 1929 | 4,100 | 5,400 | 4,400 | 3,900 | 3,700 | 4,100 | 4,400 | 3,900 | 4,100 | 4,400 | 3,900 | 4,100 | 4,400 | 3,900 | 4,100 |
| 1930 | 4,200 | 5,500 | 4,500 | 4,000 | 3,800 | 4,200 | 4,500 | 4,000 | 4,200 | 4,500 | 4,000 | 4,200 | 4,500 | 4,000 | 4,200 |
| 1931 | 4,300 | 5,600 | 4,600 | 4,100 | 3,900 | 4,300 | 4,600 | 4,100 | 4,300 | 4,600 | 4,100 | 4,300 | 4,600 | 4,100 | 4,300 |
| 1932 | 4,400 | 5,700 | 4,700 | 4,200 | 4,000 | 4,400 | 4,700 | 4,200 | 4,400 | 4,700 | 4,200 | 4,400 | 4,700 | 4,200 | 4,400 |
| 1933 | 4,500 | 5,800 | 4,800 | 4,300 | 4,100 | 4,500 | 4,800 | 4,300 | 4,500 | 4,800 | 4,300 | 4,500 | 4,800 | 4,300 | 4,500 |
| 1934 | 4,600 | 5,900 | 4,900 | 4,400 | 4,200 | 4,600 | 4,900 | 4,400 | 4,600 | 4,900 | 4,400 | 4,600 | 4,900 | 4,400 | 4,600 |
| 1935 | 4,700 | 6,000 | 5,000 | 4,500 | 4,300 | 4,700 | 5,000 | 4,500 | 4,700 | 5,000 | 4,500 | 4,700 | 5,000 | 4,500 | 4,700 |
| 1936 | 4,800 | 6,100 | 5,100 | 4,600 | 4,400 | 4,800 | 5,100 | 4,600 | 4,800 | 5,100 | 4,600 | 4,800 | 5,100 | 4,600 | 4,800 |
| 1937 | 4,900 | 6,200 | 5,200 | 4,700 | 4,500 | 4,900 | 5,200 | 4,700 | 4,900 | 5,200 | 4,700 | 4,900 | 5,200 | 4,700 | 4,900 |
| 1938 | 5,000 | 6,300 | 5,300 | 4,800 | 4,600 | 5,000 | 5,300 | 4,800 | 5,000 | 5,300 | 4,800 | 5,000 | 5,300 | 4,800 | 5,000 |
| 1939 | 5,100 | 6,400 | 5,400 | 4,900 | 4,700 | 5,100 | 5,400 | 4,900 | 5,100 | 5,400 | 4,900 | 5,100 | 5,400 | 4,900 | 5,100 |
| 1940 | 5,200 | 6,500 | 5,500 | 5,000 | 4,800 | 5,200 | 5,500 | 5,000 | 5,200 | 5,500 | 5,000 | 5,200 | 5,500 | 5,000 | 5,200 |
| 1941 | 5,300 | 6,600 | 5,600 | 5,100 | 4,900 | 5,300 | 5,600 | 5,100 | 5,300 | 5,600 | 5,100 | 5,300 | 5,600 | 5,100 | 5,300 |
| 1942 | 5,400 | 6,700 | 5,700 | 5,200 | 5,000 | 5,400 | 5,700 | 5,200 | 5,400 | 5,700 | 5,200 | 5,400 | 5,700 | 5,200 | 5,400 |
| 1943 | 5,500 | 6,800 | 5,800 | 5,300 | 5,100 | 5,500 | 5,800 | 5,300 | 5,500 | 5,800 | 5,300 | 5,500 | 5,800 | 5,300 | 5,500 |
| 1944 | 5,600 | 6,900 | 5,900 | 5,400 | 5,200 | 5,600 | 5,900 | 5,400 | 5,600 | 5,900 | 5,400 | 5,600 | 5,900 | 5,400 | 5,600 |
| 1945 | 5,700 | 7,000 | 6,000 | 5,500 | 5,300 | 5,700 | 6,000 | 5,500 | 5,700 | 6,000 | 5,500 | 5,700 | 6,000 | 5,500 | 5,700 |
| 1946 | 5,800 | 7,100 | 6,100 | 5,600 | 5,400 | 5,800 | 6,100 | 5,600 | 5,800 | 6,100 | 5,600 | 5,800 | 6,100 | 5,600 | 5,800 |
| 1947 | 5,900 | 7,200 | 6,200 | 5,700 | 5,500 | 5,900 | 6,200 | 5,700 | 5,900 | 6,200 | 5,700 | 5,900 | 6,200 | 5,700 | 5,900 |
| 1948 | 6,000 | 7,300 | 6,300 | 5,800 | 5,600 | 6,000 | 6,300 | 5,800 | 6,000 | 6,300 | 5,800 | 6,000 | 6,300 | 5,800 | 6,000 |
| 1949 | 6,100 | 7,400 | 6,400 | 5,900 | 5,700 | 6,100 | 6,400 | 5,900 | 6,100 | 6,400 | 5,900 | 6,100 | 6,400 | 5,900 | 6,100 |
| 1950 | 6,200 | 7,500 | 6,500 | 6,000 | 5,800 | 6,200 | 6,500 | 6,000 | 6,200 | 6,500 | 6,000 | 6,200 | 6,500 | 6,000 | 6,200 |
| 1951 | 6,300 | 7,600 | 6,600 | 6,100 | 5,900 | 6,300 | 6,600 | 6,100 | 6,300 | 6,600 | 6,100 | 6,300 | 6,600 | 6,100 | 6,300 |
| 1952 | 6,400 | 7,700 | 6,700 | 6,200 | 6,000 | 6,400 | 6,700 | 6,200 | 6,400 | 6,700 | 6,200 | 6,400 | 6,700 | 6,200 | 6,400 |
| 1953 | 6,500 | 7,800 | 6,800 | 6,300 | 6,100 | 6,500 | 6,800 | 6,300 | 6,500 | 6,800 | 6,300 | 6,500 | 6,800 | 6,300 | 6,500 |
| 1954 | 6,600 | 7,900 | 6,900 | 6,400 | 6,200 | 6,600 | 6,900 | 6,400 | 6,600 | 6,900 | 6,400 | 6,600 | 6,900 | 6,400 | 6,600 |
| 1955 | 6,700 | 8,000 | 7,000 | 6,500 | 6,300 | 6,700 | 7,000 | 6,500 | 6,700 | 7,000 | 6,500 | 6,700 | 7,000 | 6,500 | 6,700 |
| 1956 | 6,800 | 8,100 | 7,100 | 6,600 | 6,400 | 6,800 | 7,100 | 6,600 | 6,800 | 7,100 | 6,600 | 6,800 | 7,100 | 6,600 | 6,800 |
| 1957 | 6,900 | 8,200 | 7,200 | 6,700 | 6,500 | 6,900 | 7,200 | 6,700 | 6,900 | 7,200 | 6,700 | 6,900 | 7,200 | 6,700 | 6,900 |
| 1958 | 7,000 | 8,300 | 7,300 | 6,800 | 6,600 | 7,000 | 7,300 | 6,800 | 7,000 | 7,300 | 6,800 | 7,000 | 7,300 | 6,800 | 7,000 |
| 1959 | 7,100 | 8,400 | 7,400 | 6,900 | 6,700 | 7,100 | 7,400 | 6,900 | 7,100 | 7,400 | 6,900 | 7,100 | 7,400 | 6,900 | 7,100 |
| 1960 | 7,200 | 8,500 | 7,500 | 7,000 | 6,800 | 7,200 | 7,500 | 7,000 | 7,200 | 7,500 | 7,000 | 7,200 | 7,500 | 7,000 | 7,200 |
| 1961 | 7,300 | 8,600 | 7,600 | 7,100 | 6,900 | 7,300 | 7,600 | 7,100 | 7,300 | 7,600 | 7,100 | 7,300 | 7,600 | 7,100 | 7,300 |
| 1962 | 7,400 | 8,700 | 7,700 | 7,200 | 7,000 | 7,400 | 7,700 | 7,200 | 7,400 | 7,700 | 7,200 | 7,400 | 7,700 | 7,200 | 7,400 |
| 1963 | 7,500 | 8,800 | 7,800 | 7,300 | 7,100 | 7,500 | 7,800 | 7,300 | 7,500 | 7,800 | 7,300 | 7,500 | 7,800 | 7,300 | 7,500 |
| 1964 | 7,600 | 8,900 | 7,900 | 7,400 | 7,200 | 7,600 | 7,900 | 7,400 | 7,600 | 7,900 | 7,400 | 7,600 | 7,900 | 7,400 | 7,600 |
| 1965 | 7,700 | 9,000 | 8,000 | 7,500 | 7,300 | 7,700 | 8,000 | 7,500 | 7,700 | 8,000 | 7,500 | 7,700 | 8,000 | 7,500 | 7,700 |
| 1966 | 7,800 | 9,100 | 8,100 | 7,600 | 7,400 | 7,800 | 8,100 | 7,600 | 7,800 | 8,100 | 7,600 | 7,800 | 8,100 | 7,600 | 7,800 |
| 1967 | 7,900 | 9,200 | 8,200 | 7,700 | 7,500 | 7,900 | 8,200 | 7,700 | 7,900 | 8,200 | 7,700 | 7,900 | 8,200 | 7,700 | 7,900 |
| 1968 | 8,000 | 9,300 | 8,300 | 7,800 | 7,600 | 8,000 | 8,300 | 7,800 | 8,000 | 8,300 | 7,800 | 8,000 | 8,300 | 7,800 | 8,000 |
| 1969 | 8,100 | 9,400 | 8,400 | 7,900 | 7,700 | 8,100 | 8,400 | 7,900 | 8,100 | 8,400 | 7,900 | 8,100 | 8,400 | 7,900 | 8,100 |
| 1970 | 8,200 | 9,500 | 8,500 | 8,000 | 7,800 | 8,200 | 8,500 | 8,000 | 8,200 | 8,500 | 8,000 | 8,200 | 8,500 | 8,000 | 8,200 |
| 1971 | 8,300 | 9,600 | 8,600 | 8,100 | 7,900 | 8,300 | 8,600 | 8,100 | 8,300 | 8,600 | 8,100 | 8,300 | 8,600 | 8,100 | 8,300 |
| 1972 | 8,400 | 9,700 | 8,700 | 8,200 | 8,000 | 8,400 | 8,700 | 8,200 | 8,400 | 8,700 | 8,200 | 8,400 | 8,700 | 8,200 | 8,400 |
| 1973 | 8,500 | 9,800 | 8,800 | 8,300 | 8,100 | 8,500 | | | | | | | | | |

TABLE II
CITY OF LIVERPOOL.
Cases of Infectious Disease notified during the Year 1920.

| NOTIFIABLE DISEASE | NUMBER OF CASES NOTIFIED. | | | | | | | |
|---|---------------------------|----------------|---------|----------|-----------|-----------|-----------|----------------|
| | At all Ages. | At Ages—Years. | | | | | | |
| | | Under 1 | 1 to 5. | 5 to 15. | 15 to 25. | 25 to 45. | 45 to 65. | 65 and upwards |
| Small-pox | 9 | ... | ... | ... | 3 | ... | 6 | ... |
| Scarlet fever | 1 | ... | ... | ... | 1 | ... | ... | ... |
| Diphtheria (and Croup)... | 1654 | 43 | 422 | 895 | 199 | 87 | 8 | ... |
| Erysipelas | 505 | 21 | 22 | 45 | 203 | 79 | 95 | 40 |
| Measles | 3230 | 29 | 668 | 2185 | 260 | 82 | 6 | ... |
| Whooping cough | ... | ... | ... | ... | ... | ... | ... | ... |
| Typhoid fever | 44 | ... | 2 | 14 | 13 | 10 | 4 | 1 |
| Relapsing fever | 2 | ... | ... | 2 | ... | ... | ... | ... |
| Intermittent fever | 69 | ... | ... | ... | 20 | 47 | 2 | ... |
| Typho-Spinal Fever | 27 | 10 | 4 | 6 | 4 | 3 | ... | ... |
| Polio-myelitis | 6 | 4 | 2 | ... | ... | ... | ... | ... |
| Ophthalmia Neonatorum | 766 | 766 | ... | ... | ... | ... | ... | ... |
| Pulmonary Tuberculosis | 2074 | 2 | 50 | 350 | 384 | 835 | 406 | 47 |
| Tuberculosis other than Pulmonary | 488 | 18 | 69 | 241 | 104 | 37 | 15 | 4 |
| Pharyngitis | 4 | ... | ... | ... | ... | 3 | 1 | ... |
| Scarlet fever and German Measles | 7254 | 426 | 3273 | 3368 | 118 | 66 | 2 | 1 |
| Pneumonia and Influenzal Pneumonia | 2104 | 185 | 486 | 303 | 305 | 538 | 212 | 75 |
| Malaria | 172 | ... | ... | ... | 38 | 133 | 1 | ... |
| Typhus Fever | 2 | ... | ... | ... | 1 | ... | 1 | ... |
| Shigellosis | 14 | ... | ... | 1 | 3 | 6 | 4 | ... |
| Encephalitis Lethargica... .. | 17 | 1 | ... | 7 | 6 | 2 | 1 | ... |
| Totals | 18442 | 1505 | 4998 | 7417 | 1662 | 1928 | 764 | 168 |

City Hospital North, Netherfield Road.
 " " South, Grafton Street.
 " " East, Mill Lane, Old Swan.
 " " Fazakerley Isolation.
 " " do. Annexe.
 " " Sparrow Hall, Fazakerley.
 Sanatorium, Fazakerley.
 " Park Hill.

} All within the City.

Deysbrook Hospital, West Derby. Outside the City.

All the above Institutions are provided by the Corporation of Liverpool.

| | |
|----------------|---------|
| | Cat |
| | |
| All causes | (C
U |
| 1. Enteric Fe | |
| 2. Small-pox | |
| 3. Measles ... | |
| 4. Scarlet Fev | |
| 5. Whooping | |
| 6. Diphtheria | |
| 7. Influenza | |
| 8. Erysipelas | |

The classification and numbering
of the Manual of the International
all cases of doubt.

(a) All "Transferable Deaths" of resi
are *included* with the other d
persons resident elsewhere in l
excluded from these columns. I
to Table I.

The total deaths in Column 2 of T.

(b) All deaths occurring in institution
or of non-residents, are entered

(c) All deaths certified by registered M
other deaths are regarded as "

(d) Exclusive of "Tuberculous Mening

(e) Title 19 has been used for deaths t
"Short List" deaths from Dia
at 2 years and over being plac

NOTES TO TABLE III.

of Causes of Death are those of the "Short List" on page XXV.
List of Causes of Death, which has been consulted and followed in

dents, *i.e.*, of persons resident in the District who have died outside it, deaths in Columns 2-10. Transferable deaths of non-residents, *i.e.*, of England and Wales who have died in the District, are in like manner or the precise meaning of the term "transferable deaths" *see* footnote

ble III. equal the figures for the year in Column 12 of Table I.

for the sick and infirm situated within the district, whether of residents in the last column of Table III.

Medical Practitioners and all Inquest cases are classed as "Certified"; all Uncertified."

itis" (10), but inclusive of Cerebro-Spinal Meningitis.

om Diarrhœa and Enteritis of children under 2 years of age. (In the rhœa, and Enteritis under 2 years are included under Title 19; those d under Title 28.)

TABLE IV.

CITY OF LIVERPOOL.

INFANT MORTALITY.

Deaths from 1st January to 31st December 1901.

The following are the

| | Total
Deaths
under
the
Year. | Deaths
under
the
Year. | Deaths
under
the
Year. | Deaths
under
the
Year. | Deaths
under
the
Year. | Deaths
under
the
Year. |
|------------|--|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| All Causes | 1,201 | 225 | 101 | 101 | 25 | 101 |

small-pox
Chicken-pox
Measles

NO

(a) The total in the last column of Table IV
3 of Table III.

(b) Under Abdominal Tuberculosis are to be
from Tabes Mesenterica.

(c) The total deaths from Congenital Malformations
should equal the total in Table III.
Premature Birth.

Want of Breast Milk is included under

(d) For references to the meaning of any other

In recording the facts under the various headings
drawn to the notes on the Tables.

DTI

NOTES TO TABLE IV.

of
List . should equal the total in column 10 of Table I., and in column

included deaths from Tuberculous Peritonitis and Enteritis and
deaths
eaths
ngla
for thormations, Premature Birth, Atrophy, Debility and Marasmus,
under the heading Congenital Debility and Malformation, including

ble I
Atrophy and Debility.

s for r headings, see notes attached to Table III.
in th

edical
Uncerious headings of Tables I., II., III. and IV., attention has been

itis

rom I
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d unc

CITY OF LIVERPOOL.

Deaths of Soldiers and Sailors on Active Service, in the City of Liverpool during the year 1920 and recorded as per Memorandum of the Registrar General dated 1st November, 1915.

| Cause of Death. | Number of Deaths | Cause of Death. | Number of Deaths. |
|---|------------------|----------------------------|-------------------|
| Influenza | 2 | Broncho Pneumonia | 4 |
| Malaria | 1 | Pneumonia | 4 |
| Tuberculosis, Pulmonary ... | 1 | Nephritis | 1 |
| Cancer, other forms | 1 | Suicide by Coal Gas | 1 |
| Other Diseases of Nervous System | 1 | Gunshot Wounds | 1 |
| Genereal Diseases | 1 | Ill-defined Cause... .. | 1 |
| | | | 19 |

10

CITY OF LIVERPOOL

Report of the Mayor and Council for the year 1930 and recorded as per Memorandum of the Council dated 1st November, 1931.

| Year | Amount | Particulars |
|------|-------------|--------------|
| 1930 | £ 1,000,000 | General Fund |
| 1931 | £ 1,000,000 | General Fund |
| 1932 | £ 1,000,000 | General Fund |
| 1933 | £ 1,000,000 | General Fund |
| 1934 | £ 1,000,000 | General Fund |
| 1935 | £ 1,000,000 | General Fund |
| 1936 | £ 1,000,000 | General Fund |
| 1937 | £ 1,000,000 | General Fund |
| 1938 | £ 1,000,000 | General Fund |
| 1939 | £ 1,000,000 | General Fund |
| 1940 | £ 1,000,000 | General Fund |
| 1941 | £ 1,000,000 | General Fund |
| 1942 | £ 1,000,000 | General Fund |
| 1943 | £ 1,000,000 | General Fund |
| 1944 | £ 1,000,000 | General Fund |
| 1945 | £ 1,000,000 | General Fund |
| 1946 | £ 1,000,000 | General Fund |
| 1947 | £ 1,000,000 | General Fund |
| 1948 | £ 1,000,000 | General Fund |
| 1949 | £ 1,000,000 | General Fund |
| 1950 | £ 1,000,000 | General Fund |
| 1951 | £ 1,000,000 | General Fund |
| 1952 | £ 1,000,000 | General Fund |
| 1953 | £ 1,000,000 | General Fund |
| 1954 | £ 1,000,000 | General Fund |
| 1955 | £ 1,000,000 | General Fund |
| 1956 | £ 1,000,000 | General Fund |
| 1957 | £ 1,000,000 | General Fund |
| 1958 | £ 1,000,000 | General Fund |
| 1959 | £ 1,000,000 | General Fund |
| 1960 | £ 1,000,000 | General Fund |
| 1961 | £ 1,000,000 | General Fund |
| 1962 | £ 1,000,000 | General Fund |
| 1963 | £ 1,000,000 | General Fund |
| 1964 | £ 1,000,000 | General Fund |
| 1965 | £ 1,000,000 | General Fund |
| 1966 | £ 1,000,000 | General Fund |
| 1967 | £ 1,000,000 | General Fund |
| 1968 | £ 1,000,000 | General Fund |
| 1969 | £ 1,000,000 | General Fund |
| 1970 | £ 1,000,000 | General Fund |
| 1971 | £ 1,000,000 | General Fund |
| 1972 | £ 1,000,000 | General Fund |
| 1973 | £ 1,000,000 | General Fund |
| 1974 | £ 1,000,000 | General Fund |
| 1975 | £ 1,000,000 | General Fund |
| 1976 | £ 1,000,000 | General Fund |
| 1977 | £ 1,000,000 | General Fund |
| 1978 | £ 1,000,000 | General Fund |
| 1979 | £ 1,000,000 | General Fund |
| 1980 | £ 1,000,000 | General Fund |
| 1981 | £ 1,000,000 | General Fund |
| 1982 | £ 1,000,000 | General Fund |
| 1983 | £ 1,000,000 | General Fund |
| 1984 | £ 1,000,000 | General Fund |
| 1985 | £ 1,000,000 | General Fund |
| 1986 | £ 1,000,000 | General Fund |
| 1987 | £ 1,000,000 | General Fund |
| 1988 | £ 1,000,000 | General Fund |
| 1989 | £ 1,000,000 | General Fund |
| 1990 | £ 1,000,000 | General Fund |
| 1991 | £ 1,000,000 | General Fund |
| 1992 | £ 1,000,000 | General Fund |
| 1993 | £ 1,000,000 | General Fund |
| 1994 | £ 1,000,000 | General Fund |
| 1995 | £ 1,000,000 | General Fund |
| 1996 | £ 1,000,000 | General Fund |
| 1997 | £ 1,000,000 | General Fund |
| 1998 | £ 1,000,000 | General Fund |
| 1999 | £ 1,000,000 | General Fund |
| 2000 | £ 1,000,000 | General Fund |
| 2001 | £ 1,000,000 | General Fund |
| 2002 | £ 1,000,000 | General Fund |
| 2003 | £ 1,000,000 | General Fund |
| 2004 | £ 1,000,000 | General Fund |
| 2005 | £ 1,000,000 | General Fund |
| 2006 | £ 1,000,000 | General Fund |
| 2007 | £ 1,000,000 | General Fund |
| 2008 | £ 1,000,000 | General Fund |
| 2009 | £ 1,000,000 | General Fund |
| 2010 | £ 1,000,000 | General Fund |
| 2011 | £ 1,000,000 | General Fund |
| 2012 | £ 1,000,000 | General Fund |
| 2013 | £ 1,000,000 | General Fund |
| 2014 | £ 1,000,000 | General Fund |
| 2015 | £ 1,000,000 | General Fund |
| 2016 | £ 1,000,000 | General Fund |
| 2017 | £ 1,000,000 | General Fund |
| 2018 | £ 1,000,000 | General Fund |
| 2019 | £ 1,000,000 | General Fund |
| 2020 | £ 1,000,000 | General Fund |
| 2021 | £ 1,000,000 | General Fund |
| 2022 | £ 1,000,000 | General Fund |
| 2023 | £ 1,000,000 | General Fund |
| 2024 | £ 1,000,000 | General Fund |
| 2025 | £ 1,000,000 | General Fund |
| 2026 | £ 1,000,000 | General Fund |
| 2027 | £ 1,000,000 | General Fund |
| 2028 | £ 1,000,000 | General Fund |
| 2029 | £ 1,000,000 | General Fund |
| 2030 | £ 1,000,000 | General Fund |

Report of the Mayor and Council for the year 1930 and recorded as per Memorandum of the Council dated 1st November, 1931.



| | | | | | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| ... | ... | ... | 0 | ... | ... | ... | 3 | ... | 1 | ... | 43 |
| ... | ... | ... | 15 | ... | ... | ... | 3 | ... | ... | ... | 37 |
| ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 10 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 |
| ... | ... | ... | 3 | 1 | ... | ... | 1 | ... | 2 | ... | 31 |
| ... | ... | ... | 4 | 1 | ... | ... | 2 | ... | 1 | ... | 18 |
| ... | ... | ... | 3 | 1 | ... | ... | 1 | ... | 4 | ... | 28 |
| ... | 2 | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 12 |
| ... | 1 | ... | ... | ... | ... | ... | ... | ... | 3 | ... | 103 |
| ... | ... | ... | 12 | ... | ... | ... | 7 | ... | 1 | ... | 499 |
| ... | ... | ... | 20 | 1 | ... | ... | 12 | ... | 72 | ... | 331 |
| ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 38 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 14 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 10 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 6 |
| 20 | ... | ... | 97 | 20 | ... | ... | 42 | ... | 9 | ... | 528 |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 3 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 13 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 12 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 5 |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 8 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 |
| ... | 3 | ... | 2 | ... | ... | ... | ... | ... | 1 | ... | 66 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 28 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 41 |
| 228 | ... | ... | 13 | ... | ... | ... | 7 | ... | 10 | 1 | 244 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 7 |
| ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 8 |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | 6 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 |
| 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 6 |
| ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 27 |
| 1099 | 8 | 78 | 427 | 54 | 75 | 2 | 256 | 50 | 253 | 2 | 6891 |
| 2653 | 11 | 42 | 387 | 48 | 63 | ... | 193 | 39 | 209 | ... | 5961 |

