

**[Report 1926] / Medical Officer of Health, Liverpool City.**

**Contributors**

Liverpool (England). City Council.

**Publication/Creation**

1926

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PUBLIC HEALTH DEPARTMENT.

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REPORT  
ON THE HEALTH OF THE  
CITY OF LIVERPOOL

DURING THE YEAR

— 1926 —

BY

A. A. MUSSEN, B.A., M.D., D.P.H.,

*Medical Officer of Health.*




LIVERPOOL.

C. TINLING & CO., LTD., PRINTING CONTRACTORS, 53, VICTORIA STREET.

1927.





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#### APPENDIX.

Ministry of Health Tables of Population, Births, Deaths, Infantile Mortality and Infectious Sickness. Tables I, II, III and IV.

Table of Total Deaths registered in the City.

Plan of Liverpool, showing Birth, Death and Infant Mortality Rates, Population of Districts and Proposed Incorporated Area.





## PREFACE.

---

The health of the city during 1926 as shown by the statistics given in the report has been satisfactory.

The birth-rate was 23·3 per 1,000 of the population, being identical with the figure for last year; the average for the previous five years was 25·6. The birth-rate for England and Wales for 1926 was 17·8, and for the 105 large towns was 18·2 per 1,000 of the population.

The death-rate was 13·7 per 1,000, compared with 14·1 for 1925, and an average of 14·1 for the preceding five years. This is only slightly above the lowest death-rate recorded in Liverpool heretofore, namely, 13·6 in 1924.

The infant mortality rate was 104 per 1,000 births, which represents a slight increase upon that of last year, namely, 99, and is also above the average for the past five years, which was 101. This increase is attributable to the prevalence of diarrhœa and enteritis in the central parts of the city during August and September, to which the weather conditions in those months were conducive. The causes of the prevalence of diarrhœa were under investigation throughout the year, and the matter referred to on page 62. One result of this investigation was again to emphasise the importance of breast-feeding in the first year of life.

No case of Smallpox occurred in the city during the year. This is remarkable when the numbers for the country generally are considered. The numbers of cases of Smallpox notified in England and Wales were as follow :—

1924	...	...	...	...	...	...	3,792
1925	...	...	...	...	...	...	5,365
1926	...	...	...	...	...	...	10,205

The danger of the introduction of this disease into the city is always a serious one, and in view of these figures it is doubly so at the present time. Under these circumstances, it cannot be too strongly urged on all classes of citizens that the only preventive against this disease is vaccination and re-vaccination.

Two cases of plague occurred in a house in the city following upon an entire absence of the disease either in rats or man during several years; the persons affected were a boy and his father, the latter being employed in the docks in an area to which vessels from infected ports often come. Extensive investigations failed to reveal the presence of any infected rats in the city or port, but the incident serves to emphasise the necessity of constant vigilance in this regard.

The testing of children as to their immunity or otherwise to diphtheria has been continued at several institutions in the city by means of the Schick test, and those found to be susceptible to the disease were immunised by inoculation with toxoid anti-toxin. Reference is made to this on page 24.

Cases of Encephalitis Lethargica continue to be notified, but there has been a decrease in the number of deaths. Careful enquiries are made into the circumstances of every notified case with the view of obtaining any information which may throw light on this obscure disease, characterised as it is by the development of serious after-effects. The question of after-treatment of children suffering from mental and physical deterioration as the result of this disease was under consideration during the year (see page 44).

The deaths from alcoholism show a further satisfactory decline, only five deaths having been certified as due to this cause during the year, as compared with 125 in 1914. There were only 10 deaths from suffocation of infants, as compared with an average of 42 for the years 1914 to 1918. These figures afford a most eloquent testimony to the improved social conditions of the city.

Both ante-natal and post-natal clinics have been well attended. There were 19,792 children born during the year, and 6,066 new attendances were made at the post-natal clinics.

The Carnegie Infant Welfare Centre and the Corporation Maternity Home have both proved of great value in dealing with mothers and children, and the Seamen's Dispensary has been increasingly made use of by patients suffering from venereal diseases.

The death-rate from all forms of tuberculosis, namely, 1.47 per 1,000 of the population, is the lowest rate recorded for Liverpool. There are



several reasons which combine to retard progress in the decline of this disease, two of which are evident from statistical tables in the report. In Table XI. on page 135 it is shown that 37 per cent. of new pulmonary cases coming under the care of the Tuberculosis Officers were in an extremely advanced stage of the disease, and in the same table it is shown that out of the deaths enquired into many related to patients who had never been notified, and many others related to patients who died within twelve months of the date of notification. The late stage of illness at which so many patients come under observation is a prominent factor in the spread of infection, and also makes it impossible, in many cases, to give treatment with success.

During the year the number of houses built within the city was 4,838, of which 3,102 were erected by the Housing Department, a great advance upon the preceding years. The replacement of insanitary houses in the centre of the city was re-commenced with the Pitt Street area, where 57 tenements are now under construction. The unhealthy areas remaining within the city have been under close observation during the year (see page 245), and further steps will shortly be taken towards their demolition and reconstruction.

A. A. MUSSEN,

*Medical Officer of Health.*

PUBLIC HEALTH DEPARTMENT,  
MUNICIPAL BUILDINGS,  
LIVERPOOL,

31st July, 1927.





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# STATISTICS

RELATING TO

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

ZYMOTIC DISEASES AND THEIR INCIDENCE.

---

# SUMMARY

OF

## VITAL STATISTICS FOR 1926.

---

Area of City ... ..	21,219	Acres.
		(33 square miles)
Population (estimated to the middle of the year) ... ..	849,593	
Births ... ..	19,792,	Birth-rate 23·3.
Deaths ... ..	11,626,	Death-rate 13·7.
Infantile Mortality ... ..	2,066	Deaths under one year.
Infant Mortality Rate ... ..	104	per 1,000 Births.
Zymotic Death-rate (7 principal Zymotic Diseases) ... ..	·76	per 1,000.
All forms of Tuberculosis (including Phthisis) ... ..	1·5	per 1,000.
Phthisis Death-rate ... ..	1·2	per 1,000.

### BIRTHS.

The number of births recorded during the year 1926 within the City was 19,792, equal to a rate of 23·3 per 1,000 of the population, the average of the previous five years (1921-1925) being 25·1. Of the total births, 10,140 were males and 9,652 were females. The number of illegitimate births was 810, or 4·1 per cent. of the total births, 432 being males and 378 females.

The Registrar General intimated that 318 births (157 males and 161 females) should be added to and 394 births (194 males and 200 females) deducted from the total number of births registered in the City. These corrections for transferable births having been made, the net figures are as given above.

The birth-rate in the City of Liverpool is considerably above the average of the great towns, which is 18·2 per 1,000 of the population, as well as of England and Wales taken as a whole, where the rate is 17·8 per 1,000, for the year 1926.

### BIRTHS AND DEATHS IN DISTRICTS.

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 1926 :—

Districts.	Estimated Population 1926.	BIRTHS.		DEATHS.	
		Number of Births.	Rate per 1,000.	Number of Deaths.	Rate per 1,000.
EXCHANGE ... ..	82,771	2,807	33·9	1,671	20·2
ABERCROMBY ... ..	48,106	1,131	23·5	716	14·9
EVERTON ... ..	130,210	3,434	26·4	1,902	14·6
KIRKDALE ... ..	73,833	1,708	23·1	1,033	14·0
EDGE HILL ... ..	91,785	2,086	22·7	1,222	13·3
TOXTETH ... ..	111,306	2,937	26·4	1,500	13·5
WALTON ... ..	87,796	1,421	16·2	974	11·1
WEST DERBY ... ..	87,394	1,848	21·1	1,066	12·2
WAVERTREE ... ..	89,543	1,706	19·1	981	10·9
TOXTETH (EAST)... ..	34,002	482	14·2	429	12·6
FAZAKERLEY ... ..	6,673	117	17·5	67	10·0
WOOLTON ... ..	6,174	115	18·6	65	10·5
	849,593	19,792	23·3	11,626	13·7



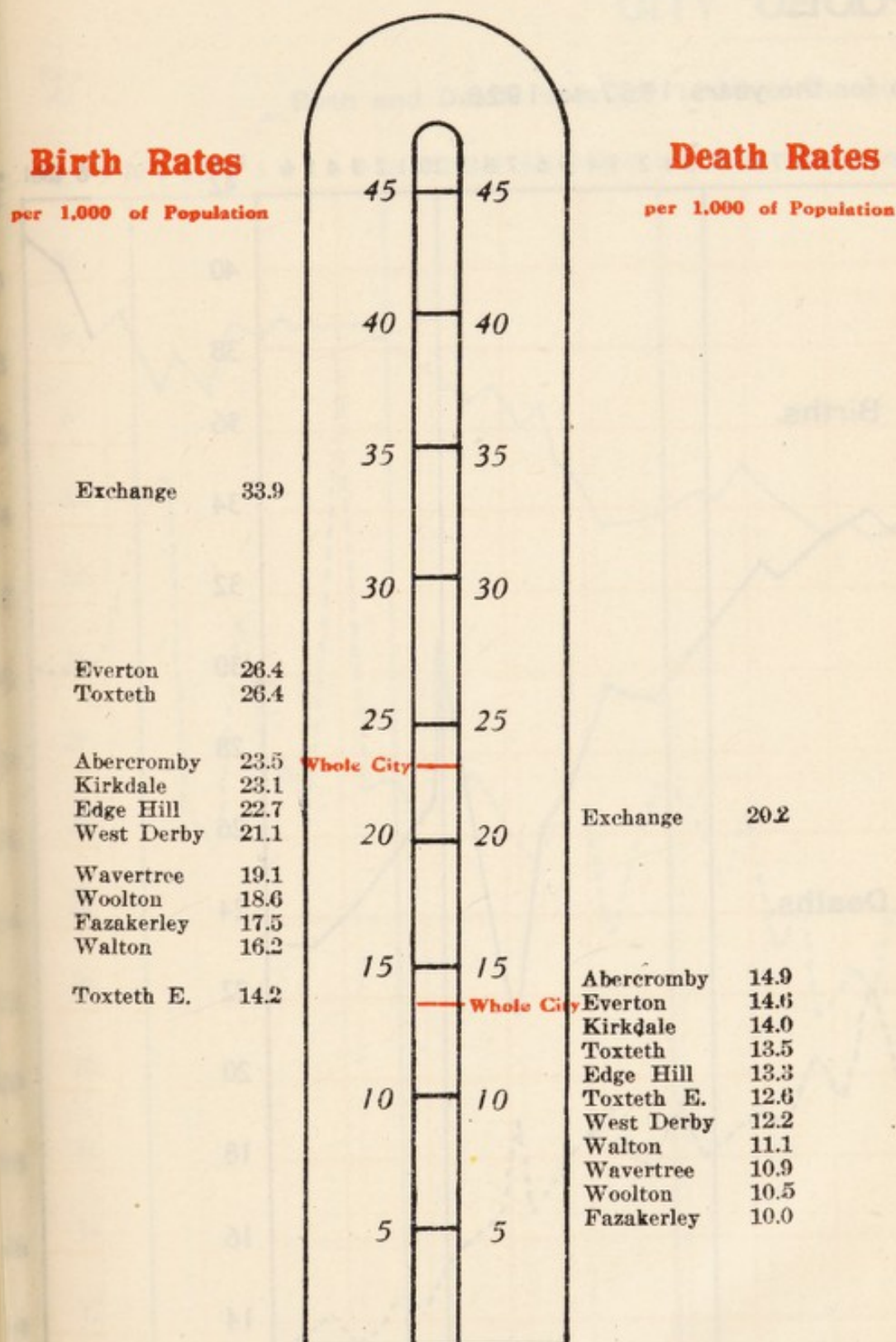
The following table shows the population, births and deaths, with birth and death rates during the last 25 years (1902 to 1926) :—

Year.	Population.	No. of Births.	Birth Rate per 1,000 of Population.	No. of Deaths.	Death Rate per 1,000 of Population.	
1902	...	*709,635	*24,283	34.2	*15,392	21.6
1903	...	713,628	23,910	33.5	14,240	19.9
1904	...	717,647	24,278	33.8	15,851	22.1
1905	...	*724,583	*24,350	33.6	*14,103	19.5
1906	...	728,155	24,123	33.1	15,001	20.6
1907	...	731,798	23,654	32.3	13,676	18.7
1908	...	735,423	23,891	32.5	13,930	18.9
1909	...	739,073	23,591	31.9	13,945	18.8
1910	...	742,742	23,054	31.0	13,343	17.9
1911	...	747,998	22,493	30.0	14,607	19.5
1912	...	754,143	22,233	29.5	13,364	17.7
1913	...	*760,341	*22,555	29.6	*13,658	18.0
1914	...	773,467	23,065	29.8	15,046	19.4
1915	...	779,535	21,586	27.7	14,478	18.6
1916	...	785,657	20,679	26.3	13,943	17.7
1917	...	791,828	17,906	22.6	13,093	16.5
1918	...	798,048	17,133	21.5	15,267	19.1
1919	...	804,316	18,694	23.2	13,283	16.5
1920	...	810,632	25,039	30.9	12,852	15.8
1921	...	817,000	21,904	26.8	11,666	14.3
1922	...	823,416	21,467	26.1	11,992	14.6
1923	...	829,881	20,695	24.9	11,405	13.7
1924	...	836,396	20,559	24.6	11,390	13.6
1925	...	842,968	19,592	23.3	11,902	14.1
1926	...	849,593	19,792	23.3	11,626	13.7

\* City Area extended.

# CITY OF LIVERPOOL.

Comparative view of the Birth and Death Rates per 1,000 in the different districts of the City during the year 1926.



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



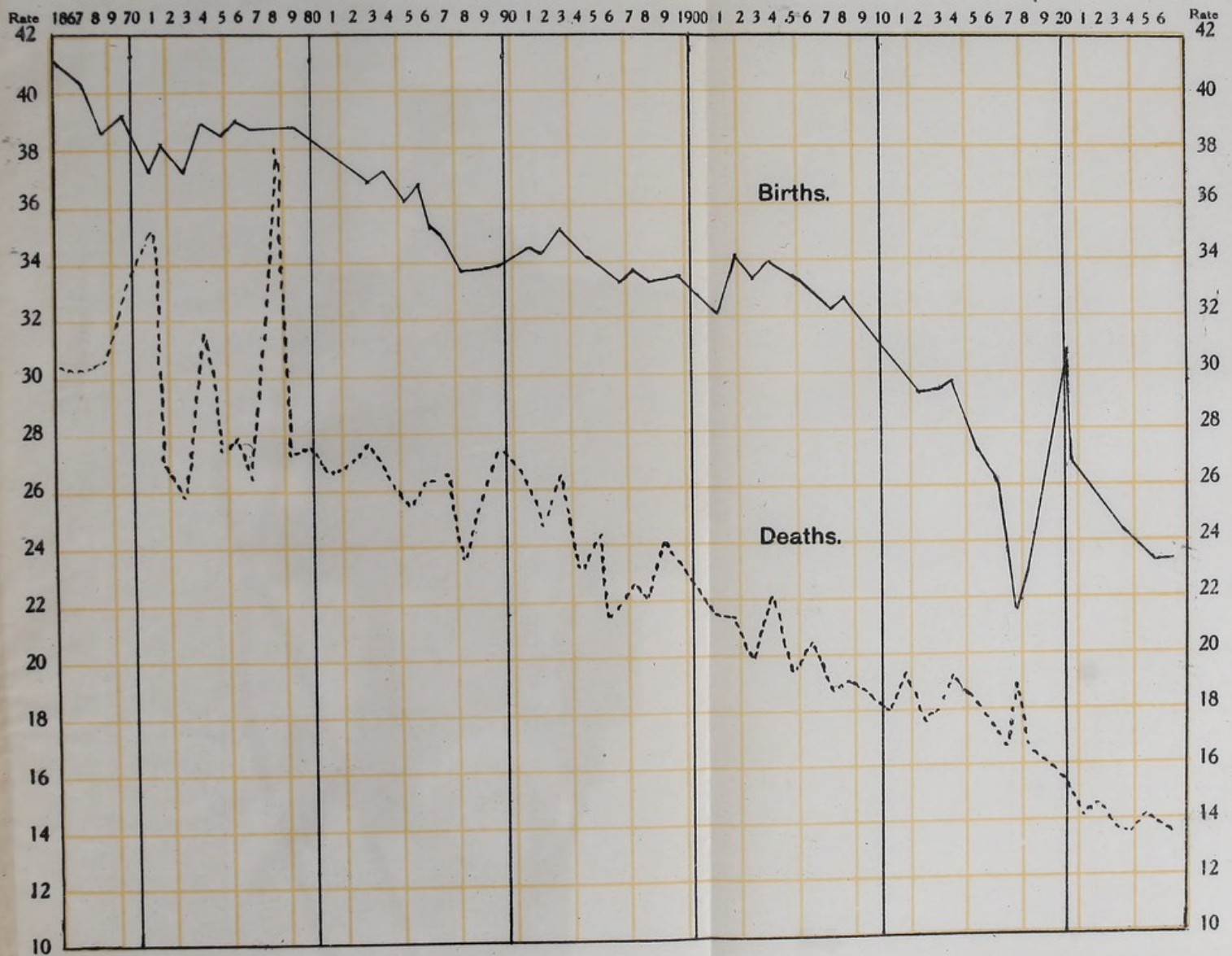
# CITY OF LIVERPOOL

Comparative view of the Birth and Death Rates per 1,000 in the different districts of the City during the year 1926.

Birth Rates		Death Rates	
No. of Births	per 1,000 of Population	No. of Deaths	per 1,000 of Population
1926	207.91	849.948	10.0
1925	209.11	809.248	10.5
1924	203.11	755.02	10.9
1923	204.11	741.11	11.1
1922	206.11	732.12	12.2
1921	208.11	723.13	12.6
1920	210.11	714.14	13.3
1919	212.11	705.15	13.5
1918	214.11	696.16	14.0
1917	216.11	687.17	14.6
1916	218.11	678.18	14.9
1915	220.11	669.19	14.9
1914	222.11	660.20	14.9
1913	224.11	651.21	14.9
1912	226.11	642.22	14.9
1911	228.11	633.23	14.9
1910	230.11	624.24	14.9
1909	232.11	615.25	14.9
1908	234.11	606.26	14.9
1907	236.11	597.27	14.9
1906	238.11	588.28	14.9
1905	240.11	579.29	14.9
1904	242.11	570.30	14.9
1903	244.11	561.31	14.9
1902	246.11	552.32	14.9
1901	248.11	543.33	14.9
1900	250.11	534.34	14.9
1899	252.11	525.35	14.9
1898	254.11	516.36	14.9
1897	256.11	507.37	14.9
1896	258.11	498.38	14.9
1895	260.11	489.39	14.9
1894	262.11	480.40	14.9
1893	264.11	471.41	14.9
1892	266.11	462.42	14.9
1891	268.11	453.43	14.9
1890	270.11	444.44	14.9
1889	272.11	435.45	14.9
1888	274.11	426.46	14.9
1887	276.11	417.47	14.9
1886	278.11	408.48	14.9
1885	280.11	399.49	14.9
1884	282.11	390.50	14.9
1883	284.11	381.51	14.9
1882	286.11	372.52	14.9
1881	288.11	363.53	14.9
1880	290.11	354.54	14.9
1879	292.11	345.55	14.9
1878	294.11	336.56	14.9
1877	296.11	327.57	14.9
1876	298.11	318.58	14.9
1875	300.11	309.59	14.9
1874	302.11	300.60	14.9
1873	304.11	291.61	14.9
1872	306.11	282.62	14.9
1871	308.11	273.63	14.9
1870	310.11	264.64	14.9
1869	312.11	255.65	14.9
1868	314.11	246.66	14.9
1867	316.11	237.67	14.9
1866	318.11	228.68	14.9
1865	320.11	219.69	14.9
1864	322.11	210.70	14.9
1863	324.11	201.71	14.9
1862	326.11	192.72	14.9
1861	328.11	183.73	14.9
1860	330.11	174.74	14.9
1859	332.11	165.75	14.9
1858	334.11	156.76	14.9
1857	336.11	147.77	14.9
1856	338.11	138.78	14.9
1855	340.11	129.79	14.9
1854	342.11	120.80	14.9
1853	344.11	111.81	14.9
1852	346.11	102.82	14.9
1851	348.11	93.83	14.9
1850	350.11	84.84	14.9
1849	352.11	75.85	14.9
1848	354.11	66.86	14.9
1847	356.11	57.87	14.9
1846	358.11	48.88	14.9
1845	360.11	39.89	14.9
1844	362.11	30.90	14.9
1843	364.11	21.91	14.9
1842	366.11	12.92	14.9
1841	368.11	3.93	14.9
1840	370.11	14.94	14.9
1839	372.11	25.95	14.9
1838	374.11	36.96	14.9
1837	376.11	47.97	14.9
1836	378.11	58.98	14.9
1835	380.11	69.99	14.9
1834	382.11	80.00	14.9
1833	384.11	91.01	14.9
1832	386.11	102.02	14.9
1831	388.11	113.03	14.9
1830	390.11	124.04	14.9
1829	392.11	135.05	14.9
1828	394.11	146.06	14.9
1827	396.11	157.07	14.9
1826	398.11	168.08	14.9
1825	400.11	179.09	14.9
1824	402.11	190.10	14.9
1823	404.11	201.11	14.9
1822	406.11	212.12	14.9
1821	408.11	223.13	14.9
1820	410.11	234.14	14.9
1819	412.11	245.15	14.9
1818	414.11	256.16	14.9
1817	416.11	267.17	14.9
1816	418.11	278.18	14.9
1815	420.11	289.19	14.9
1814	422.11	300.20	14.9
1813	424.11	311.21	14.9
1812	426.11	322.22	14.9
1811	428.11	333.23	14.9
1810	430.11	344.24	14.9
1809	432.11	355.25	14.9
1808	434.11	366.26	14.9
1807	436.11	377.27	14.9
1806	438.11	388.28	14.9
1805	440.11	399.29	14.9
1804	442.11	410.30	14.9
1803	444.11	421.31	14.9
1802	446.11	432.32	14.9
1801	448.11	443.33	14.9
1800	450.11	454.34	14.9
1799	452.11	465.35	14.9
1798	454.11	476.36	14.9
1797	456.11	487.37	14.9
1796	458.11	498.38	14.9
1795	460.11	509.39	14.9
1794	462.11	520.40	14.9
1793	464.11	531.41	14.9
1792	466.11	542.42	14.9
1791	468.11	553.43	14.9
1790	470.11	564.44	14.9
1789	472.11	575.45	14.9
1788	474.11	586.46	14.9
1787	476.11	597.47	14.9
1786	478.11	608.48	14.9
1785	480.11	619.49	14.9
1784	482.11	630.50	14.9
1783	484.11	641.51	14.9
1782	486.11	652.52	14.9
1781	488.11	663.53	14.9
1780	490.11	674.54	14.9
1779	492.11	685.55	14.9
1778	494.11	696.56	14.9
1777	496.11	707.57	14.9
1776	498.11	718.58	14.9
1775	500.11	729.59	14.9
1774	502.11	740.60	14.9
1773	504.11	751.61	14.9
1772	506.11	762.62	14.9
1771	508.11	773.63	14.9
1770	510.11	784.64	14.9
1769	512.11	795.65	14.9
1768	514.11	806.66	14.9
1767	516.11	817.67	14.9
1766	518.11	828.68	14.9
1765	520.11	839.69	14.9
1764	522.11	850.70	14.9
1763	524.11	861.71	14.9
1762	526.11	872.72	14.9
1761	528.11	883.73	14.9
1760	530.11	894.74	14.9
1759	532.11	905.75	14.9
1758	534.11	916.76	14.9
1757	536.11	927.77	14.9
1756	538.11	938.78	14.9
1755	540.11	949.79	14.9
1754	542.11	960.80	14.9
1753	544.11	971.81	14.9
1752	546.11	982.82	14.9
1751	548.11	993.83	14.9
1750	550.11	1004.84	14.9
1749	552.11	1015.85	14.9
1748	554.11	1026.86	14.9
1747	556.11	1037.87	14.9
1746	558.11	1048.88	14.9
1745	560.11	1059.89	14.9
1744	562.11	1070.90	14.9
1743	564.11	1081.91	14.9
1742	566.11	1092.92	14.9
1741	568.11	1103.93	14.9
1740	570.11	1114.94	14.9
1739	572.11	1125.95	14.9
1738	574.11	1136.96	14.9
1737	576.11	1147.97	14.9
1736	578.11	1158.98	14.9
1735	580.11	1169.99	14.9
1734	582.11	1180.00	14.9
1733	584.11	1191.01	14.9
1732	586.11	1202.02	14.9
1731	588.11	1213.03	14.9
1730	590.11	1224.04	14.9
1729	592.11	1235.05	14.9
1728	594.11	1246.06	14.9
1727	596.11	1257.07	14.9
1726	598.11	1268.08	14.9
1725	600.11	1279.09	14.9
1724	602.11	1290.10	14.9
1723	604.11	1301.11	14.9
1722	606.11	1312.12	14.9
1721	608.11	1323.13	14.9
1720	610.11	1334.14	14.9
1719	612.11	1345.15	14.9
1718	614.11	1356.16	14.9
1717	616.11	1367.17	14.9
1716	618.11	1378.18	14.9
1715	620.11	1389.19	14.9
1714	622.11	1400.20	14.9
1713	624.11	1411.21	14.9
1712	626.11	1422.22	14.9
1711	628.11	1433.23	14.9
1710	630.11	1444.24	14.9
1709	632.11	1455.25	14.9
1708	634.11	1466.26	14.9
1707	636.11	1477.27	14.9
1706	638.11	1488.28	14.9
1705	640.11	1499.29	14.9
1704	642.11	1510.30	14.9
1703	644.11	1521.31	14.9
1702	646.11	1532.32	14.9
1701	648.11	1543.33	14.9
1700	650.11	1554.34	14.9
1699	652.11	1565.35	14.9
1698	654.11	1576.36	14.9
1697	656.11	1587.37	14.9
1696	658.11	1598.38	14.9
1695	660.11	1609.39	14.9
1694	662.11	1620.40	14.9
1693	664.11	1631.41	14.9
1692	666.11	1642.42	14.9
1691	668.11	1653.43	14.9
1690	670.11	1664.44	14.9
1689	672.11	1675.45	14.9
1688	674.11	1686.46	14.9
1687	676.11	1697.47	14.9
1686	678.11	1708.48	14.9
1685	680.11	1719.49	14.9
1684	682.11	1730.50	14.9
1683	684.11	1741.51	14.9
1682	686.11	1752.52	14.9
1681	688.11	1763.53	14.9
1680	690.11	1774.54	14.9
1679	692.11	1785.55	14.9
1678	694.11	1796.56	14.9
1677	696.11	1807.57	14.9
1676	698.11	1818.58	14.9
1675	700.11	1829.59	14.9
1674	702.11	1840.60	14.9
1673	704.11	1851.61	14.9
1672	706.11	1862.62	14.9
1671	708.11	1873.63	14.9
1670	710.11	1884.64	14.9
1669	712.11	1895.65	14.9
1668	714.11	1906.66	14.9
1667	716.11	1917.67	14.9
1666	718.11	1928.68	14.9
1665	720.11	1939.69	14.9
1664	72		

## CITY OF LIVERPOOL.

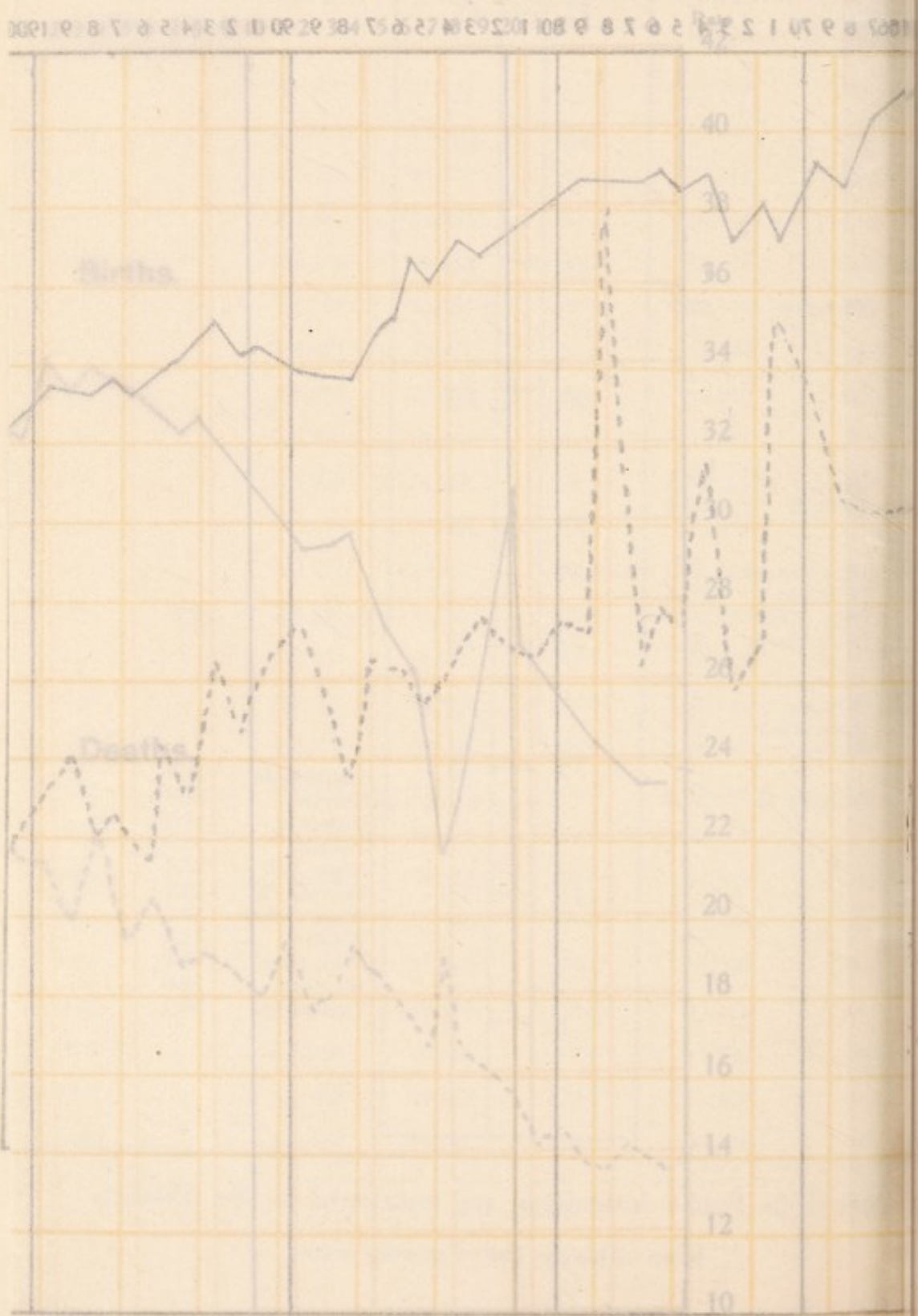
Birth and Death rates per 1000 of the population for the years 1867 to 1926.





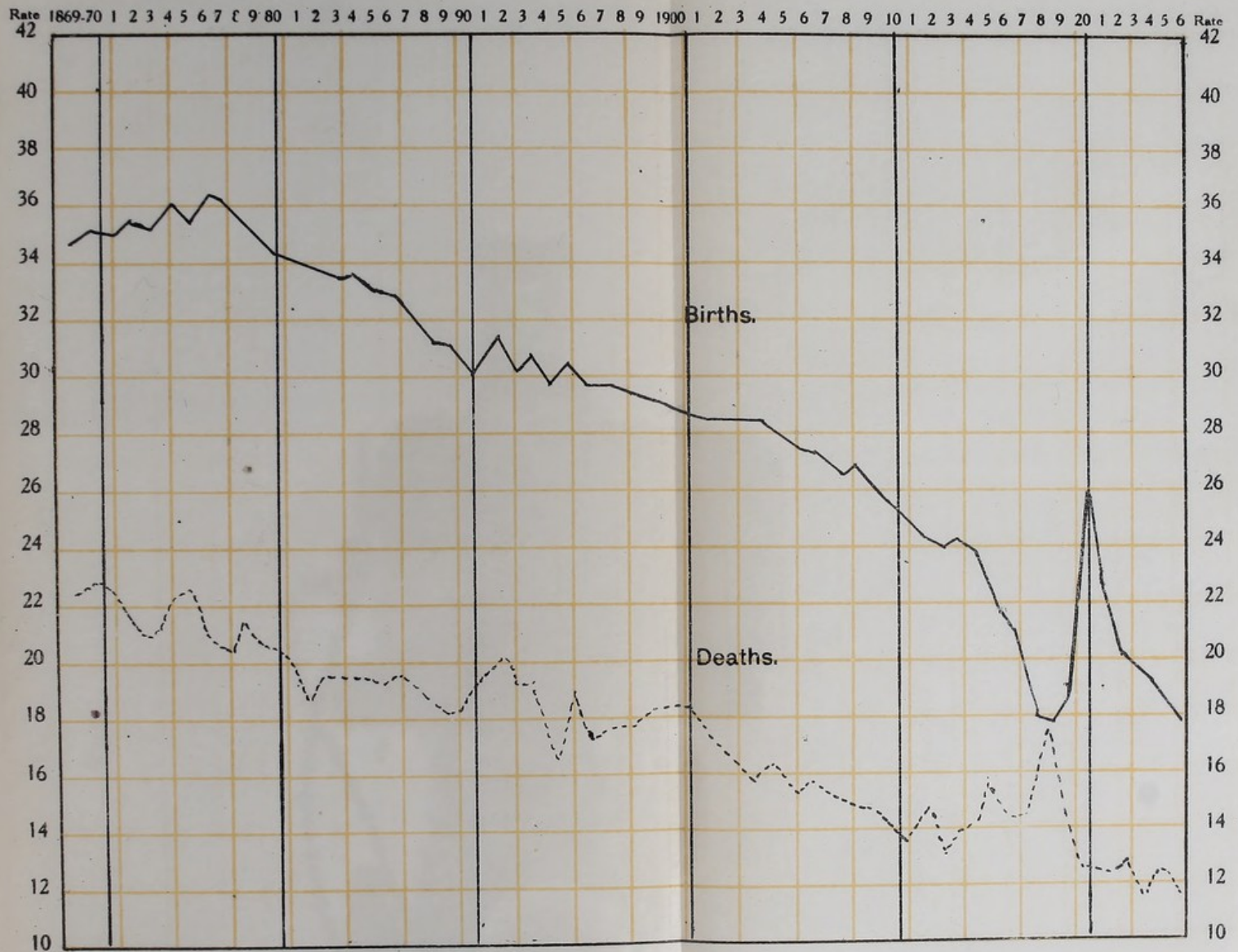
# CITY OF OLIVE

Birth and Death Rates per 1000 of the population



## ENGLAND AND WALES.

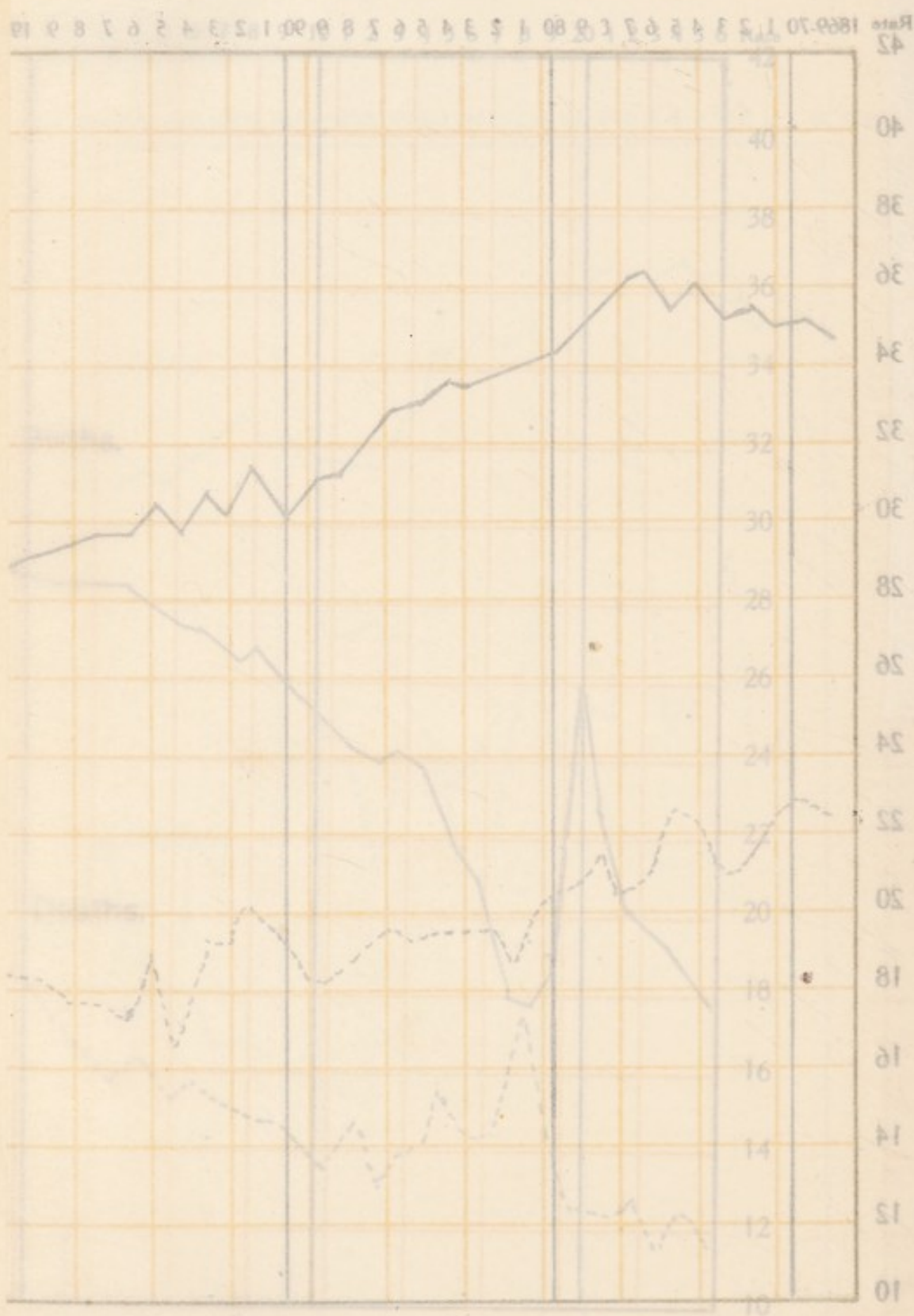
Birth and Death rates per 1000 of the population for the years 1869 to 1926.





# ENGLAND AND

Birth and Death rates per 1000 of the popu



## DEATHS.

The total deaths registered in the City during the year numbered 12,191. Of these deaths 937 were those of non-residents, chiefly occurring in public institutions, nursing homes, &c., and these were excluded from the returns. On the other hand, the deaths of 372 Liverpool residents which occurred in other districts and in the County Asylums, &c., were included in the returns for the year.

This gives a corrected number of deaths of 11,626, being 6,152 males and 5,474 females, for the year, equal to a death rate of 13·7 per 1,000 of the population. This is almost as low as that of the year 1924, which was 13·6, the lowest death rate ever recorded for the City.

It will be seen that in the five years (1907-1911) the average death rate was 18·7 per 1,000, whilst during the last five years (1922-1926) the average rate was 13·9 per 1,000.

A comparison of the table on page 10 with previous reports will show that this improvement is not confined to the infant mortality nor to the mortality at any particular age, but is a general improvement affecting the whole of the population. It is plain that any variation in the *proportions* living at the respective age-periods would affect the death rate, and this with absolutely no change whatever in the condition of municipal sanitation. These proportions, however, vary very slowly and very slightly year by year in each district, so that yearly comparisons of the mortality rate of the same district may be fairly made, but one district should not be put into comparison with another unless the age and sex conditions of each are known, and the necessary corrections made.

## CAUSES OF DEATH.

Full details as to the causes of death are set forth in Table *E* in the Appendix; in the same table the age at which each death took place and the district in which it occurred will also be found.



The following table gives a classification of the causes of death during the four quarters of the year, shown under 15 classes, and the number of deaths at each age-group :—

CLASSES.						QUARTERS.				YEAR 1926.
						March	June	Sept.	Dec.	
ALL CAUSES ... ..						3,256	2,985	2,377	3,008	11,626
I. Infective Diseases ... ..						594	648	399	458	2,099
II. General Diseases ... ..						320	309	333	333	1,295
III. Dis. of Nervous System ... ..						251	239	218	247	955
IV. do. Circulatory do. ... ..						420	353	306	430	1,503
V. do. Respiratory do. ... ..						908	755	274	731	2,668
VI. do. Digestive do. ... ..						164	167	365	256	952
VII. do. Genito Urinary do. ... ..						96	104	105	121	426
VIII. The Puerperal State ... ..						23	19	15	14	71
IX. Dis. of Skin, etc. ... ..						29	26	21	18	94
X. do. Bones, etc. ... ..						5	7	8	5	25
XI. Malformations ... ..						38	29	24	28	119
XII. Dis. of Early Infancy ... ..						152	129	131	153	565
XIII. Old Age ... ..						132	113	92	126	463
XIV. External Causes ... ..						115	82	86	80	363
XV. Ill defined Causes ... ..						9	5	6	8	28
Ages at Death.	{	Under 1 year ... ..				537	468	482	579	2,066
		1 to 5 years ... ..				324	347	205	279	1,155
		5 to 10 years ... ..				76	63	54	46	239
		10 to 15 „ ... ..				34	49	43	29	155
		15 to 20 „ ... ..				58	62	57	48	225
		20 to 25 „ ... ..				78	70	67	68	283
		25 to 45 „ ... ..				404	371	300	343	1,418
		45 to 65 „ ... ..				819	743	560	747	2,869
		65 and upwards ... ..				926	812	609	869	3,216

### ANALYSIS OF DECLINE IN MORTALITY.

The accompanying tables (pages 8 and 9) show the deaths that have occurred in the city of Liverpool during the past 56 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 the greater part of the 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 having nearly doubled since then, the actual numbers of deaths per annum have fallen from an average of 14,700 in the decennium 1871-1880 to 11,626 in the year 1926. The general death rate has fallen from 28.5 to 13.7 per thousand, a fall of over 50 per cent.

The greatest proportional decline has been experienced in the group of infectious 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 84 per cent. during the 56 years.

A similar steady decline has been shown by the tubercular diseases, which have fallen to 40.8 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; there has been a decline to 58 per cent. of the rate recorded in 1871-80 during the period under review, namely, between 1891-1900 and 1926.

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 to 52 per cent. of the 1871-80 rate of 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 (see pages 8 to 9). As little is known of its causation it is not to any great extent amenable to preventive measures.

If the general rate of mortality experienced in 1871-80 had prevailed during the year 1926, there would have been 24,211 deaths instead of 11,626, the number actually recorded, a saving of 12,585 lives being thereby effected.



# CITY OF LIVERPOOL.

DEATHS FROM CERTAIN GROUPS OF DISEASES IN EACH DECADE FROM 1871 to 1920 and DURING 1921 to 1926.

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
1921-1924 .....	3,093	5,249	12,128	3,259	23,429	3,600	46,453
1925 .....	983	1,283	2,947	1,089	6,302	998	11,902
1926 .....	708	1,250	2,809	1,474	6,241	993	11,626

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

Years.	(a)	(b)	(c)	(d)	Total Deaths from Classes (a),(b), (c) & (d)	(e)	Total Deaths from all causes.
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
1921-1924 .....	6.6	11.3	26.1	7.0	50.4	7.7	100.0
1925 .....	8.3	10.8	24.9	9.1	53.0	8.4	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	1.90	4.73	1.59	9.8	1.0	18.1
1921-1924 .....	0.93	1.53	3.66	0.98	7.08	1.08	14.0
1925 .....	1.17	1.52	3.49	1.29	8.47	1.18	14.1
1926 .....	0.84	1.47	3.39	1.73	7.34	1.17	13.3

## 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
1921-1924 .....	17.9	43.8	57.7	35.0	40.6	270.2	49.1
1925 .....	22.5	42.2	61.3	46.1	48.7	295.0	49.5
1926 .....	16.1	40.8	57.7	52.2	42.2	286.5	46.6

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 1926 IN LIVERPOOL.

1926.	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.	* 104.0	32.4	10.0	2.7	2.2	4.2	5.3	9.6	19.9	42.3	99.7	217.5	13.7
Total Number of Deaths at each Age-Period.	2066	710	445	239	380	585	651	1044	1439	1730	1644	693	11626
Approximate Population	20770	21876	44293	88725	170476	138359	123540	108619	72335	40922	16492	3186	849593

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



### DEATHS IN PUBLIC INSTITUTIONS.

In Liverpool the proportion of deaths which takes place in Public Institutions is large, and this tends to show the proportion of people who in times of sickness have recourse to public and charitable institutions in the City, and no doubt also suggests that the institutions have a wide reputation and attract sufferers not only from within the City, but from a distance, as shown by the number of non-resident deaths.

The deaths during the year numbered 6,083, and included 848 persons who were non-residents in the City area. The number of deaths in the various institutions are shown in the following table:—

	Total Deaths.	Deaths of non-residents.
Parish Institution (Brownlow Hill) ... ..	792	16
Mill Road Infirmary ... ..	810	31
Walton Institution (Rice Lane) ... ..	1,175	276
Toxteth Institution (Smithdown Road) ... ..	667	22
Alder Hey Hospital ... ..	409	52
Belmont Road Institution ... ..	195	20
Kirkdale Homes ... ..	118	13
Cottage Homes, Wavertree ... ..	—	—
Leyfield Poor Law Schools ... ..	2	1
Royal Infirmary ... ..	339	117
David Lewis Northern Hospital ... ..	249	85
Royal Southern Hospital ... ..	201	38
Stanley Hospital ... ..	107	27
Royal Liverpool Children's Hospital ... ..	209	37
Maternity Hospital ... ..	45	11
Hospital for Women ... ..	16	8
Samaritan Hospital ... ..	1	—
Consumption Hospital ... ..	37	22
Carried forward ... ..	5,408	776



					Total Deaths.	Deaths of non-residents.
				Brought forward ...	5,408	776
Hahnemann Hospital	...	...	...	...	23	2
Eye and Ear Infirmary	...	...	...	...	5	1
Garston Hospital	...	...	...	...	9	—
City Hospital North	...	...	...	...	12	—
Do. South	...	...	...	...	24	—
Do. East, Mill Lane	...	...	...	...	79	—
Do. Fazakerley	...	...	...	...	167	8
Do. do. Annexe	...	...	...	...	17	—
Do. Sparrow Hall	...	...	...	...	5	1
Sanatorium Fazakerley	...	...	...	...	94	1
Do. Highfield	...	...	...	...	147	—
St. Joseph's Home	...	...	...	...	21	3
Home for Incurables	...	...	...	...	5	3
House of Providence	...	...	...	...	16	13
Tuebrook Villa Asylum	...	...	...	...	4	1
Turner Memorial Home	...	...	...	...	5	3
St. Augustine's Home	...	...	...	...	18	5
H.M. Prison, Walton	...	...	...	...	3	2
Other Institutions	...	...	...	...	57	29
					<hr/> 6,083 <hr/>	<hr/> 848 <hr/>

Of the above deaths 4,168 took place in poor-law institutions, 1,241 in voluntary hospitals, 545 in city hospitals, and 129 in other institutions.

## INFECTIOUS SICKNESS.

Liverpool is closely associated with all parts of the world by reason of the large volume of shipping continually arriving in the port, and in consequence the City is 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 1926, the case-rate per 1,000 of the population, 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 Fever.	Scarlet Fever.	Measles.	Diphtheria.	Puerperal Fever.	Erysipelas.	Cerebro-spinal Fever.	Poliomyelitis and Polioencephalitis.	Encephalitis Lethargica.	Malaria	Whooping Cough.
.....	—	42	2,244	8,694	1,519	64	567	16	19	114	56	1,971
ate per 1,000 ...	—	0·5	2·6	10·2	1·79	3·2†	0·67	0·02	0·02	0·13	0·07	2·32
.....	—	6	24	221	112	28	30	12	5	29	4	188
rate per 100,000	—	0·7	2·8	26·0	13·2	141*	3·5	1·4	0·6	3·4	0·5	22·1
age of Deaths ses	—	14·3	1·1	2·6	7·4	43·8	5·3	75·0	26·3	25·5	7·1	9·5

\* Death rate per 100,000 Births.

† Case rate per 1,000 Births.



### PLAGUE.

It is several years since a case of plague was notified in the city or port, but in the month of August the disease occurred in a house in the Vauxhall Road area. The house was of the old cottage type of four apartments, with small yard at rear, and occupied by a family of six persons.

There were two patients, one of whom (a boy) died in hospital after a few days' illness. This boy's father, who developed symptoms of plague about the same time, was removed to hospital, where he subsequently recovered. He was employed as a lavatory attendant at the docks.

The premises were thoroughly disinfected, lime-washed and cleansed and, as in all such cases, a complete survey of the areas where the man lived and worked was made for the presence of dead or sick rats. Ships arriving in the neighbourhood of the dock where the man worked were visited, and an extensive rat-catching campaign was inaugurated in all likely centres of infection, but fortunately no evidence of plague-infected rats could be discovered—although some hundreds were caught and bacteriologically examined.

All contacts, 20 to 30 in number, were visited and kept under supervision by a staff and a thorough house-to-house enquiry was made in the district. No further case developed.

Past experience shows that when localised and sporadic cases of the character reported arise, they can be speedily dealt with by reliable and modern methods, and no spread of infection takes place.

### SMALLPOX.

No cases of smallpox occurred in the city during the year.

The following figures shew the increase of the disease in England and Wales during the last four years. They shew a gradual and remarkable spread of an exceedingly mild type of smallpox, only a few deaths occurring amongst the thousands of cases reported :—

Year.	Cases.	Deaths.
1923    ...    ...	2,485	7
1924    ...    ...	3,792	13
1925    ...    ...	5,365	9
1926    ...    ...	10,205	19

(Extracted from the Registrar General's Quarterly Returns.)



This striking increase in the disease may be attributed to the neglect of vaccination in the invaded districts. There is every possibility that sooner or later the disease will make its appearance in this neighbourhood, and it may be appropriate to urge that the only safeguard against infection is vaccination and re-vaccination.

On account of its world-wide trade, Liverpool must always be one of the channels through which smallpox may be imported. Furthermore, its constantly moving population—inwards and outwards—renders it particularly liable to infection.

In Liverpool, however, the child population is relatively well vaccinated, as the most recent available figure for 1925 shows that 71 per cent. of the children born in Liverpool have been successfully vaccinated. This is satisfactory when compared with the rest of the country, and reflects credit on the public vaccinators and others concerned in the administration of the Vaccination Acts.

The appended figures shew the primary vaccinations for five years in the city of Liverpool :—

	1921.	1922.	1923.	1924.	1925.
1.—No. of Children born ...	21,904	21,467	20,695	20,559	19,592
2.—No. of primary vaccinations ... ..	15,801	15,396	15,537	15,246	13,976
3.—No. of Exemption Certificates granted ... ..	1,787	1,916	1,360	1,263	1,408
4.—No. of Certificates of insusceptibility sent ...	110	165	192	125	111

#### TYPHUS FEVER.

No case occurred in Liverpool during 1926 and no indigenous cases have occurred during the course of the past eight years.

#### ANTHRAX.

Five cases of anthrax occurred during the year in persons residing in the city. One of the patients was engaged in handling wool in warehouse, one in discharging dry hides from a vessel in the docks, and

one as a "lime jobber" in a tannery. Two were women occupied as hair washers in a factory, and were washing and manipulating foreign pig hair at the time of infection. Two of the five patients died.

The dissemination of information regarding this disease and its dangers has been emphasised from year to year, and it is undoubtedly true that fewer cases have occurred in recent years.

### ENTERIC FEVER.

The decline in the prevalence of this disease which has been continuous for the past 30 years has now almost led to its extinction. The death-rate has fallen since 1894 from 46 to 0·7 per 100,000; of the six deaths which occurred in the year, two were those of seamen or emigrants infected abroad, and one was that of a nurse infected whilst nursing a case outside the city; only three of the six deaths were of persons infected in Liverpool, or a mortality of 0·4 per 100,000.

Fifty cases of Enteric Fever (including one case of Paratyphoid A.—the first indigenous case reported in the city—and 12 cases of Paratyphoid B.) were reported during 1926 in the city and port of Liverpool. Of these, 12 cases were imported from overseas, leaving 38 cases of indigenous origin, as against 34 in the preceding year. In the case of one of these indigenous cases the development of illness followed the consumption of shellfish (cockles) picked up on the shore at Moreton. Three persons were infected whilst away on holidays or otherwise.

Four nurses who had been nursing cases which eventually proved to be Enteric Fever, were infected in this way. In March two cases occurred in one family; on investigation it was found that two children had been ill during January and another in February, all with gastric symptoms; a Widal examination of the blood of the latter case gave a positive result, and he was removed to hospital. It is probable that all three children had suffered mild attacks of typhoid fever. All the remaining cases were isolated and sporadic in nature.

The results of inquiry into the probable causation of the reported cases is shown in the following table, the figures for the years 1920 to 1925 being shown for the purpose of comparison :—



## CITY AND PORT OF LIVERPOOL. ENTERIC FEVER, 1921-26.

	CASES.						PERCENTAGE.					
	1921.	1922.	1923.	1924.	1925.	1926.	1921.	1922.	1923.	1924.	1925.	1926.
Imported by sea ...	16	12	5	12	14	12	37.2	30.0	25.0	20.0	29.2	24.0
Imported by land ...	1	1	—	8	3	3	2.3	2.5	—	13.3	6.2	6.0
Food ...	3	3	2	3	1	1	7.0	7.5	10.0	5.0	2.1	2.0
Water infection ...	4	10	1	7	9	7	9.3	25.0	5.0	11.7	18.7	14.0
Water infection from ...	1	2	2	2	1	1	2.3	5.0	10.0	3.3	2.1	2.0
Food carrier ...	—	—	—	—	—	—	—	—	—	—	—	—
Only not Typhoid	2	3	1	1	—	—	4.7	7.5	5.0	1.7	—	—
From which source ...	27	31	11	33	28	24	62.8	77.5	55.0	55.0	58.4	48.0
Area ...	11	5	3	7	10	7	25.6	12.5	15.0	11.7	20.8	14.0
Area ...	5	4	6	20	10	19	11.7	10.0	30.0	33.3	20.8	38.0
From which sources ...	16	9	9	27	20	26	37.3	22.5	45.0	45.0	41.6	52.0
City and Port	43	40	20	60	48	50						
Due to B. Typhus ...	41	37	17	36	43	37	95.1	91.9	85.0	60.0	89.5	74.0
Paratyphus B ...	2	3	3	24	3	12	4.9	8.1	15.0	40.0	6.2	24.0
Paratyphus A ...	—	—	—	—	2	1	—	—	—	—	4.2	2.0

*Paratyphoid B.* Twelve cases of this type of enteric infection were reported. This is above the average, higher indeed than in any year except 1924, when a definite outbreak involving 24 cases occurred. Of the cases reported in 1926 one was imported by sea, two were infected on a holiday in North Wales, and one was a nurse infected whilst nursing a case in a neighbouring borough. Of the remainder three were in Toxteth, two in Garston, and one each in three other districts, so that there was a definite excess of cases in the South end of the city. This is the reverse of the distribution of typhoid fever, which has the highest incidence towards the centre of the city.



### SPIROCHAETAL JAUNDICE (WEILS' DISEASE).

A woman aged 23 years, who was probably suffering from this disease, was removed to Fazakerley Hospital from a house in the vicinity of the docks on March 4th. The history given was that the onset was on February 20th with bleeding from the gums. Fever continued throughout the following week, and on February 28th a hæmorrhagic eruption appeared. Jaundice appeared on March 5th. The patient recovered after a further period of fever. The clinical history was characteristic of Ictero-hæmorrhagic Spirochaetosis, although bacteriological confirmation was not obtained.

This disease is spread by rats; cases were not uncommon during the war, and have since been occasionally reported in this country. There were no rats in the house occupied by the patient, but rats were caught in the vicinity and in the factory at which she worked, and were forwarded to the City Bacteriologist for examination; none, however, were found infected with the *Leptosira icterohæmorrhagiæ*, the causal organism of the disease.

### DIPHTHERIA.

During 1926 1,519 cases of Diphtheria were reported, giving an attack rate of 1.79 per 1,000 of the population. Of these cases 112 proved fatal, making a fatality rate of 7.4 per 100 cases, and a mortality rate of 13.2 per 100,000 population. Although the case-rate shows increase above the rates of the past five years, the fatality rate remains low.

Table 1.

#### DIPHTHERIA IN THE CITY OF LIVERPOOL, 1917-1926

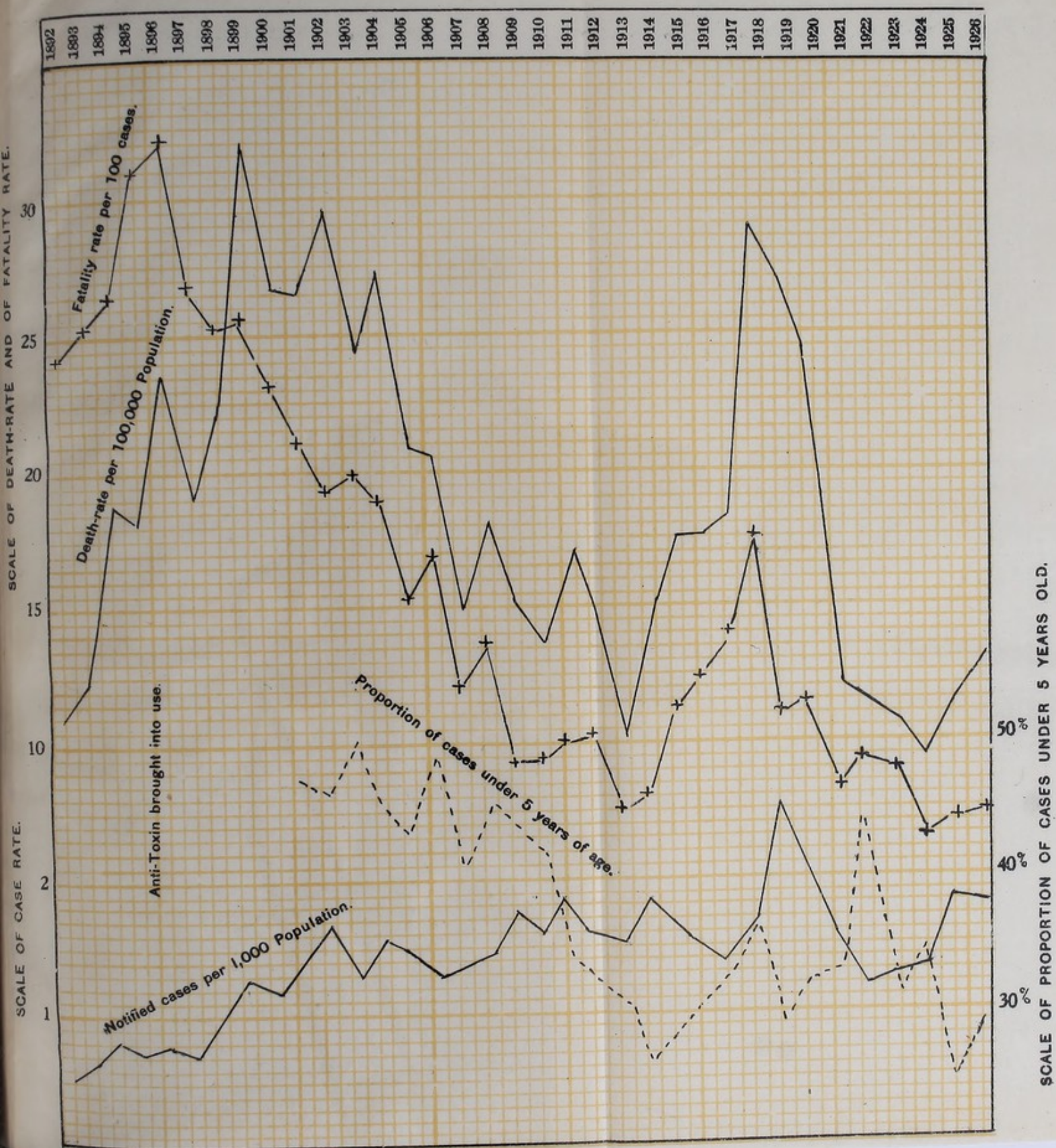
	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.
Cases .. ...	1,022	1,302	1,959	1,654	1,182	953	993	1,105	1,504	1,519
Deaths ... ..	143	228	212	188	97	91	87	71	106	112
Case rate per 1,000 population ...	1.3	1.6	2.5	2.1	1.4	1.2	1.2	1.3	1.8	1.79
Death rate per 100,000 population	18.1	28.6	26.3	23.2	12.0	11.5	10.5	8.5	12.6	13.2
Fatality rate per 100 cases ... ..	13.9	17.5	10.8	11.4	8.2	9.5	8.8	6.4	7.0	7.4

The accompanying graphs, and the table numbered 2, show the great decline in the mortality and fatality of this disease during the period for which records for the City of Liverpool exist. Prior to 1857 there were



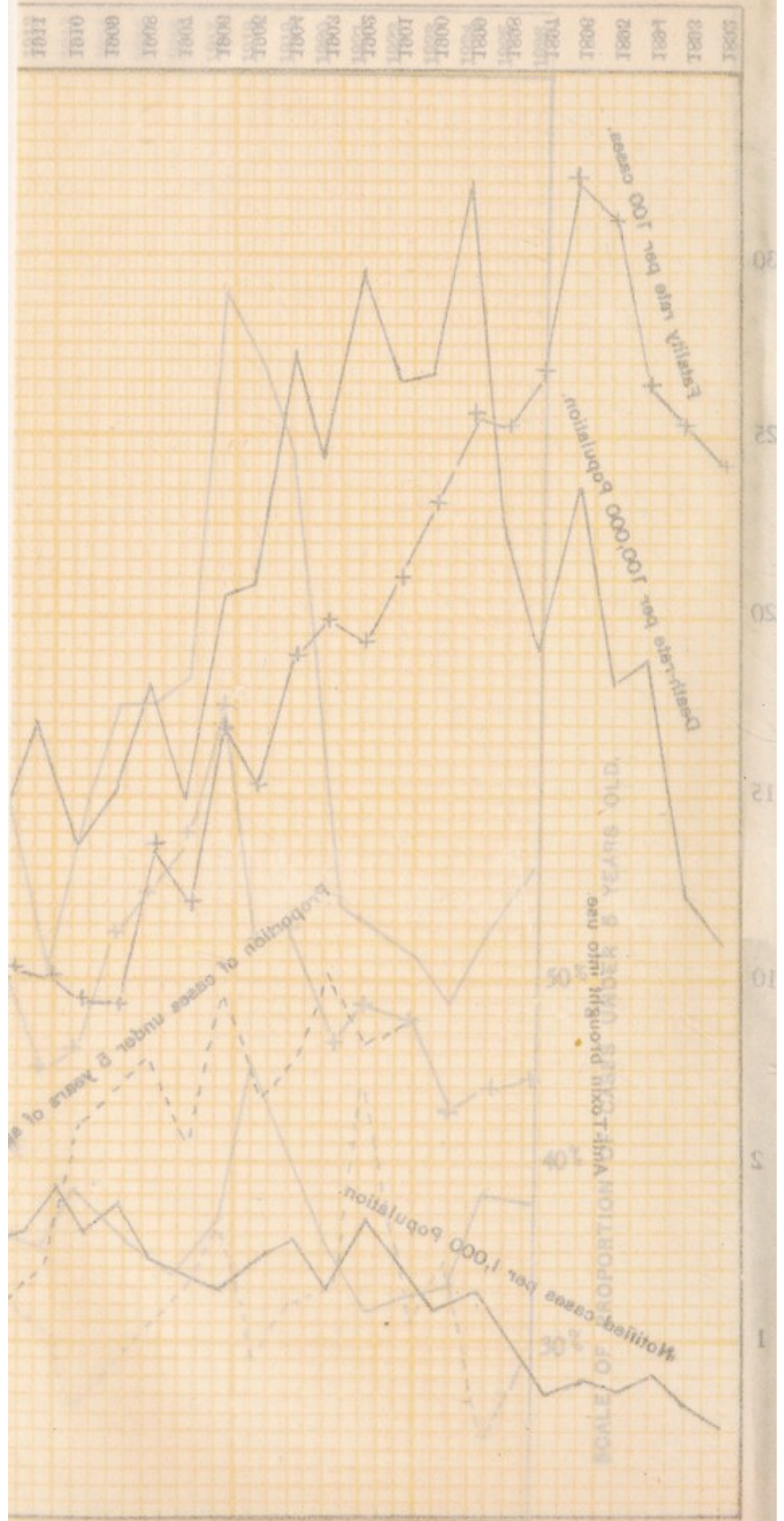
# DIPHTHERIA (& MEMBRANOUS CROUP IN CITY OF LIVERPOOL DURING 1892—1926.

DEATH RATE PER 100,000 POPULATION, NOTIFIED CASES PER 1,000 POPULATION, FATALITY RATE PER 100 CASES NOTIFIED AND PROPORTION OF CASES UNDER 5 YEARS OF AGE TO TOTAL CASES.





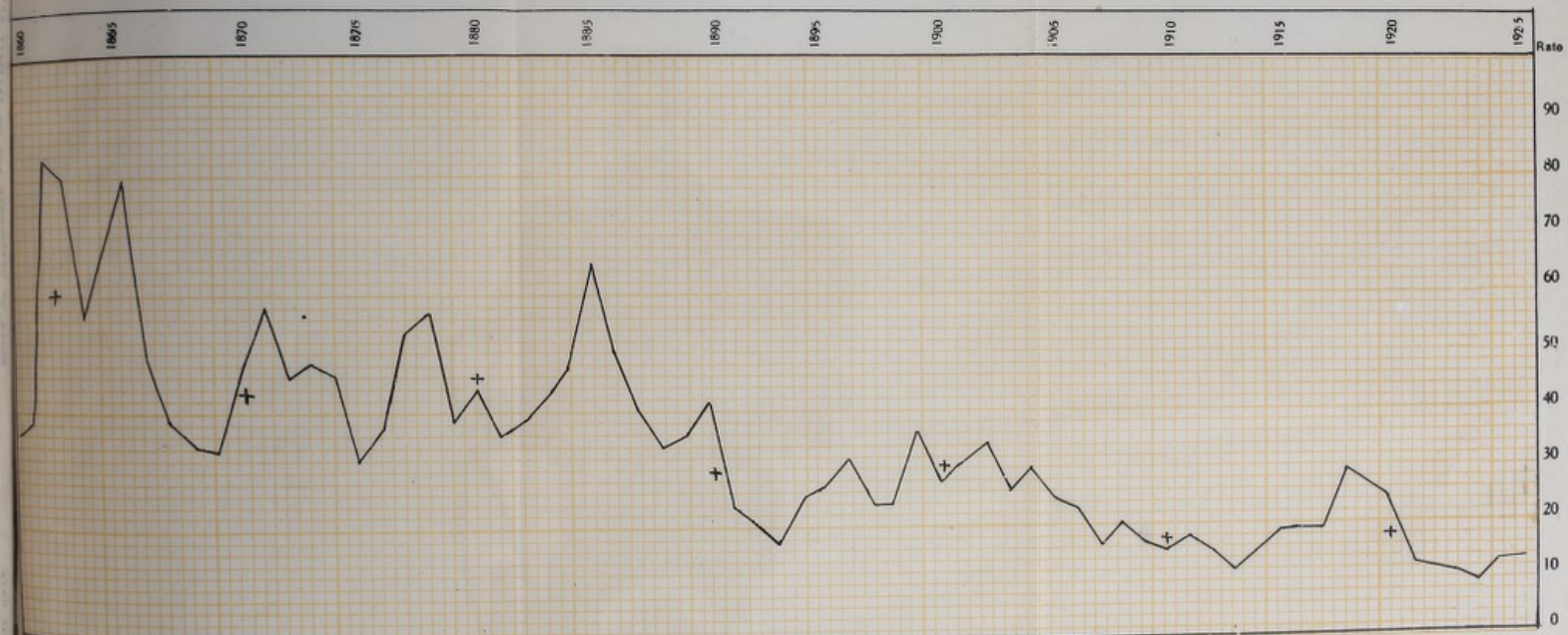
Diphtheria (& Membranous Group) in City of I  
 DEATH RATE PER 100,000 POPULATION, NOTIFIED CASES PER  
 CASES NOTIFIED AND PROPORTION OF CASES UNDER 5





# CITY OF LIVERPOOL

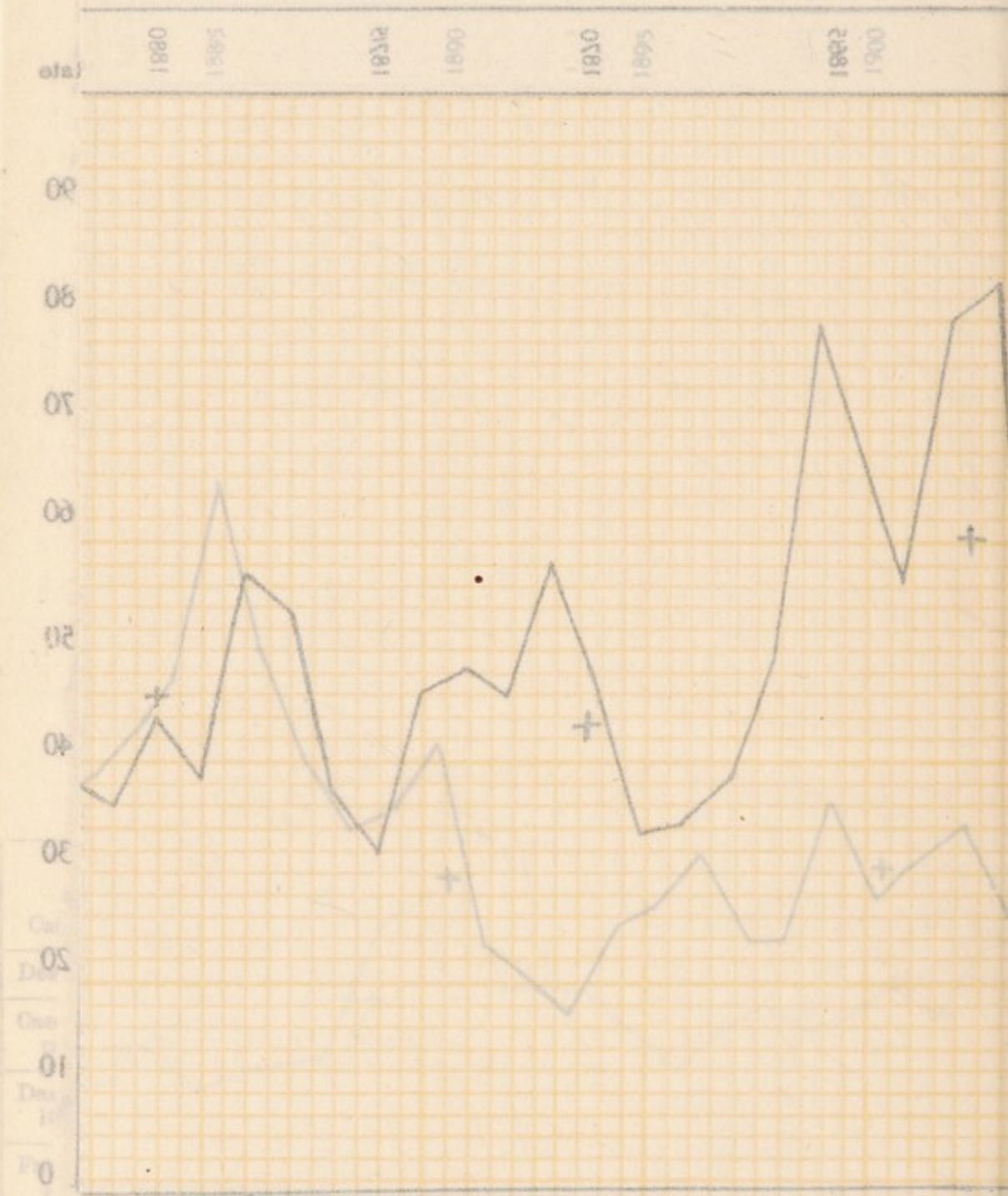
Death-Rate from Diphtheria (including Group) per 100,000 Population 1858-1926.



The crosses indicate the average mortality of the decade centred round the cross; a line joining the crosses indicates the descending trend of this disease.

# CITY OF LIVERPOOL

Scarlet Fever (including Group) per 100,000 Population 1858-1926



The crosses indicate the average mortality of the decade centred round the year indicated. The light line indicates the descending trend of the



no records of the deaths from diphtheria, the heading croup presumably containing all the deaths from this disease; from 1858 onwards the term diphtheria has steadily replaced croup as a certified cause of death, and the graphs and table accordingly give the combined death rates from these two headings.

It will be observed that prior to 1890 severe epidemics of diphtheria occurred at intervals of four to seven years.

In 1892 diphtheria and membranous croup were made notifiable.

In 1895 treatment by anti-toxin was introduced during a rising wave of prevalence of diphtheria, and the fatality rate fell steadily from 1896 onwards till 1913, as the value of this method of treatment became more recognised.

During the years of the war the prevalence, incidence upon young children, and fatality—and therefore the mortality also—rose, reaching a maximum in 1918-1919; there was a slight tendency to increased prevalence and mortality during 1925 and 1926, but the fatality remained low. The length of time elapsing between one epidemic and the next has been increased and the height of the epidemic wave greatly diminished.

Since 1920 observations have been made to determine with greater exactitude facts of the distribution of these diseases in the different parts of the City; for this purpose the City was divided into three zones:—(I.) Central, comprising Exchange and Abercromby; (II.) middle, comprising Everton, Kirkdale, Edge Hill, Toxteth and Walton, and (III.) outer, comprising the suburban areas of West Derby East, Wavertree, Sefton Park, Fazakerley and Woolton. Examination of Table II. shows the following points:—

(1) The incidence or case-rate is persistently higher in the outer than in the middle or central parts of the city. This is almost certainly due to a larger proportion of cases of a mild character receiving adequate medical attention in the outer districts. In other words a low case-rate, in this case, indicates incomplete notification of the disease. It is probable that the increase of the case-rate affecting the whole of the city during the past 30 years is due to similar causes.

(2) The death rate has, on the whole, been highest in the central districts during the past six years, 1921-26.



**Table 2.**  
**CITY OF LIVERPOOL.—DIPHTHERIA.**

Districts	Case Rates per 1,000 population.					Death Rates per 100,000 population.					Fatality Rates.				
	1922	1923	1924	1925	1926	1922	1923	1924	1925	1926	1922	1923	1924	1925	1926
Central (1-2)	0.9	1.16	1.24	1.67	1.43	11.0	11.6	10.0	14.6	18.3	11.5	10.6	8.0	8.7	12.8
Middle (3-7)	1.1	0.99	1.21	1.68	1.05	11.1	10.7	7.2	13.0	11.5	10.4	12.9	6.0	7.7	7.0
Outer (8-12)	1.3	1.29	1.63	2.06	2.30	11.3	9.9	9.2	10.3	13.9	8.6	7.6	6.4	5.0	6.0
Whole City	1.1	1.11	1.32	1.78	1.77	11.6	10.4	10.5	12.5	13.2	9.9	9.5	6.4	7.0	7.4

Districts	Percentage Proportion of Secondary to Primary Cases.					Percentage Proportion of Children 0-2 years old to Total cases.					Percentage Proportion of Children 0-5 years old to Total cases.				
	1922	1923	1924	1925	1926	1922	1923	1924	1925	1926	1922	1923	1924	1925	1926
Central (1-2)	6.2	5.3	5.8	11.5	0.6	9.2	15.1	9.2	11.5	11.2	32	43.0	32.7	25.4	35.8
Middle (3-7)	5.8	4.0	7.9	7.0	5.0	5.5	9.9	9.3	8.8	9.2	19	36.3	34.7	27.0	32.5
Outer (8-12)	7.4	10.5	4.8	11.6	20.2	5.0	4.4	5.6	5.4	4.5	25	23.0	33.7	18.7	22.6
Whole City	6.0	7.5	7.5	10.5	11.9	5.7	9.3	8.1	8.2	7.8	32	30.2	34.1	24.4	29.6

Table No. 3.  
DIPHTHERIA, YEAR 1926.

District.	Estimated Population, 1926.	Cases.	Deaths.	Attack Rate per 1,000.	Death Rate per 100,000.	Case Fatality Rate %.	Percentage Proportion of Secondary to Primary Cases. *	Percentage Proportion of Children 0-2 years to Total Cases.	Percentage Proportion of Children 0-5 years to Total Cases.
1. Exchange .....	82,771	91	19	1.1	22.9	20.9	1.0	15	47
2. Aberromby .....	48,106	96	5	1.9	10.3	4.2	0.0	7	25
3. Everton .....	130,210	200	11	1.5	8.4	5.5	5.3	7	34
4. Kirkdale .....	73,833	97	9	1.3	12.2	9.3	2.2	16	37
5. Edge Hill .....	91,785	186	15	2.0	16.3	8.1	6.4	8	30
6. Toxteth .....	111,306	180	12	1.6	10.8	6.7	4.3	8	37
7. Walton.....	87,796	156	10	1.8	11.4	6.4	5.7	13	25
8. West Derby East .....	87,394	252	9	2.9	10.3	3.6	25.2	4	24
9. Wavertree .....	89,543	193	19	2.1	21.3	9.8	27.0	6	24
10. Toxteth E. (Sefton P.) .....	34,002	35	3	1.0	8.1	8.5	2.3	3	14
11. Fazakerley .....	6,673	9	...	1.4	...	11.1	3.4	...	11
12. Woolton .....	6,174	24	...	3.9	...	...	...	...	4
Central Districts (1 to 2) ...	130,877	187	24	1.43	18.3	12.8	0.6	11.2	35.8
Middle Districts (3 to 7) ...	494,882	819	57	1.05	11.5	7.0	5.0	9.2	32.5
Outer Districts (8 to 12) ...	223,834	513	31	2.30	13.9	6.0	20.2	4.5	22.6
Whole City .....	849,593	1,519	112	1.77	13.2	7.3	11.9	7.8	29.6

\* Cases are those with onset in 1925.



(3) The fatality rates are persistently higher in the central than in the middle, with the exception of the year 1923, and in the middle than in the outer districts.

(4) This higher rate of fatality coincides with the age distribution of the cases in the three zones. The proportion of children under two years and under five years (the ages when the disease is especially fatal) is also, on the whole, higher in the central than in the middle, and in the middle than in the outer zone. This is sufficient to account for the variations in fatality.

(5) The proportion of secondary to primary cases—that is the proportion of second and further cases in a house to first cases—shows on the average little variation. But during 1926 it was markedly highest in the outer districts and least in the central districts. This is probably to some extent due to the occurrence of one or two outbreaks in institutions in the outer districts (see below), but other influences were also operative.

(6) The proportion of secondary to primary cases steadily increased since 1921, the proportions rising from 5·9 to 11·7 per cent.; this probably indicates the growth of a non-immune population since the severe outbreak of 1914-1920. The infection of diphtheria has once more spread from the more crowded parts of the City towards the periphery; it probably affects the central districts more severely because of the greater proportion of young children affected in those districts. This proportion depends in part upon the higher birth rate in that zone, but probably also depends to some extent upon housing and social conditions there. The central districts were affected by an increase in 1923 both in incidence and mortality, though the rest of the city then showed a decline in both; since then the increase has affected the rest of the city.



Table No. 4.  
DEATHS FROM DIPHTHERIA.

DISTRICTS.	QUARTERS.								YEAR 1926		
	March.		June.		Sept.		Dec.		M.	F.	Total.
	M.	F.	M.	F.	M.	F.	M.	F.			
Exchange .....	2	2	...	...	4	1	4	6	10	9	19
Abercromby .....	...	2	...	...	...	...	1	2	1	4	5
Everton .....	1	3	1	1	...	2	2	1	4	7	11
Kirkdale .....	...	2	1	2	...	...	3	1	4	5	9
Edge Hill .....	1	2	2	2	3	1	3	1	9	6	15
Toxteth .....	2	3	1	1	1	1	2	1	6	6	12
Walton .....	2	4	...	1	1	...	1	1	4	6	10
West Derby .....	1	2	3	1	...	...	...	2	4	5	9
Wavertree .....	2	7	5	...	2	...	2	1	11	8	19
Toxteth (East) .....	...	...	3	...	...	...	...	...	3	...	3
Fazakerley .....	...	...	...	...	...	...	...	...	...	...	...
Woolton .....	...	...	...	...	...	...	...	...	...	...	...
City .....	11	27	16	8	11	5	18	16	56	56	112

## AGES AT DEATH.

Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	60—	All Ages.
15	19	13	9	10	33	9	2	...	...	1	1	...	112

## AGES OF NOTIFIED CASES.

35	72	100	104	135	517	262	85	124	60	16	7	2	1519
63.4%						36.6%							

## PERCENTAGE FATALITY AT EACH AGE.

29 4	26.4	13.0	8.6	7.4	6.4	3.4	2.3	...	...	6.2	14.3	...	7.37
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N.B.—Deaths in public institutions are transferred to the districts whence the patients came.

PREVENTIVE MEASURES.—The most effectual method of preventing diphtheria in the past has been the removal of such cases to hospital; the great reduction in the fatality from the disease, which has fallen from 32·6 per cent. of the notified cases in 1891 to 7·4 per cent. in 1926, is due to the administration of anti-toxin promptly and in adequate amount; 93·1 per cent. of the notified cases were removed to hospital for treatment during 1926.

Recently, by the Schick test, it has become possible to distinguish between those who are and those who are not liable to attack; those susceptible can be immunised in a high proportion of cases by three subcutaneous injections of toxoid-antitoxin, and this has been carried out in a number of institutions during the year. In the case of children under 5 or 6 years of age the proportion of susceptibles is so high that the preliminary Schick test can be dispensed with and the three immunising injections given at once.

This method of immunisation has been used by the Liverpool Public Health Department during the past two years. Up to March 31st, 1927, 73 children have been inoculated without testing, and of 796 persons tested 342 (43 per cent.) have been found susceptible and immunised. A total of 869 persons have been tested and/or inoculated without any ill effects beyond, in a few cases mainly amongst adults, a transient soreness of the arm. In addition, 53 nurses were tested during 1926 at the City Hospital East, and of these 36 were found susceptible and were immunised.

The results of immunisation in a number of institutions are shown in the following table:—

Institution.			Cases in period of 6 months prior to Schick-testing.	Cases in period of 6 months following testing and inoculation.
A.	...	...	16	0
B.	...	...	13	3*
C.	...	...	6	1*
D.	...	...	5	0
E.	...	...	2	0
F.	...	...	4	0
			46	4

\* 1 case in each institution occurred amongst persons neither tested nor inoculated indicating that the infection still persisted in the institution although cases were no longer occurring amongst the immune or immunised population. Three cases also occurred at institution B which were removed to hospital where they were regarded as instances of tonsillitis and diphtheria carriers.



In the first five months of the year 1927 no cases of diphtheria occurred in any of these five institutions.

At an institution for children outside the city 32 cases occurred from March till the end of July. The throats of all the inmates were swabbed and 16 carriers discovered. On July 17th all the children received a prophylactic dose of anti-toxin—this has only a temporary value—and on July 23rd and 25th the staff, 71 in number, were Schick-tested, and 36 were found susceptible: these were all immunised with three doses of toxoid-antitoxin during August. Other extensive precautions were adopted, a considerable number of children being sent home after a swab taken from the throat was found negative: subsequent admissions were kept apart from the infected population. All feeding utensils were boiled after every meal. These precautions were effectual for the time, but in November, December and January a further eight cases occurred, six being in children admitted since August. The new members of the nursing staff admitted since July were now Schick-tested, and all who had received prophylactic doses re-tested; four were found still susceptible and received two further doses. All the children, both those already within the institution and also newly admitted children on admission, were given from now onwards three doses of toxoid-antitoxin. Up till the end of March only two further cases occurred, one being a nurse who had not been tested, as she was in hospital with nasal diphtheria at the time of the test, the second being a newly admitted child. A further case occurred in April, a newly come wardmaid, who had not been tested, falling sick.

This outbreak is most instructive; as in the other institutions referred to above the Schick-testing and/or inoculation of the persons in the institution brought the outbreak to an end. But in this case it was done in two stages. Cases continued to occur amongst those not tested or immunised, whilst those immunised or not reacting to the Schick test escaped.

From the above experience in a number of institutions it can be stated with confidence that by Schick-testing and subsequent inoculation of those found susceptible an instrument is available by which an outbreak of diphtheria in an institution for children can be brought to an end in the course of a few weeks; without this preventive method an outbreak of diphtheria might persist almost indefinitely in such an

institution if susceptible persons are being frequently admitted. If subsequently newcomers are tested and immunised against diphtheria, an institution can be kept free of the disease.

A much wider field, however, is open for this method of prevention. The risk of dying from diphtheria is much greater during the first few years of life than in subsequent years. It was with this purpose and following on a report of the Medical Officer of Health that authority was given by the Health Committee in 1926 to issue supplies of diphtheria (and also scarlet fever) prophylactics for medical practitioners and to give assistance in testing older children as to susceptibility to diphtheria and scarlet fever at the request of a medical practitioner.

### SCARLET FEVER.

Scarlet Fever has shown a steady decline in mortality during the past 50 years. Whilst the number of cases has shown a distinct reduction, the fatality (or proportion of deaths to cases) has shown a very marked reduction, being in 1926 only 1·1 per cent., as against 19·2 in the year 1889. The death rate from scarlet fever was 2·8 per 100,000 inhabitants, which is the lowest ever recorded in this city. This decline in the severity of scarlet fever is well shown in the attached diagram.

The following table shows the incidence and mortality from scarlet fever during the past 11 years.

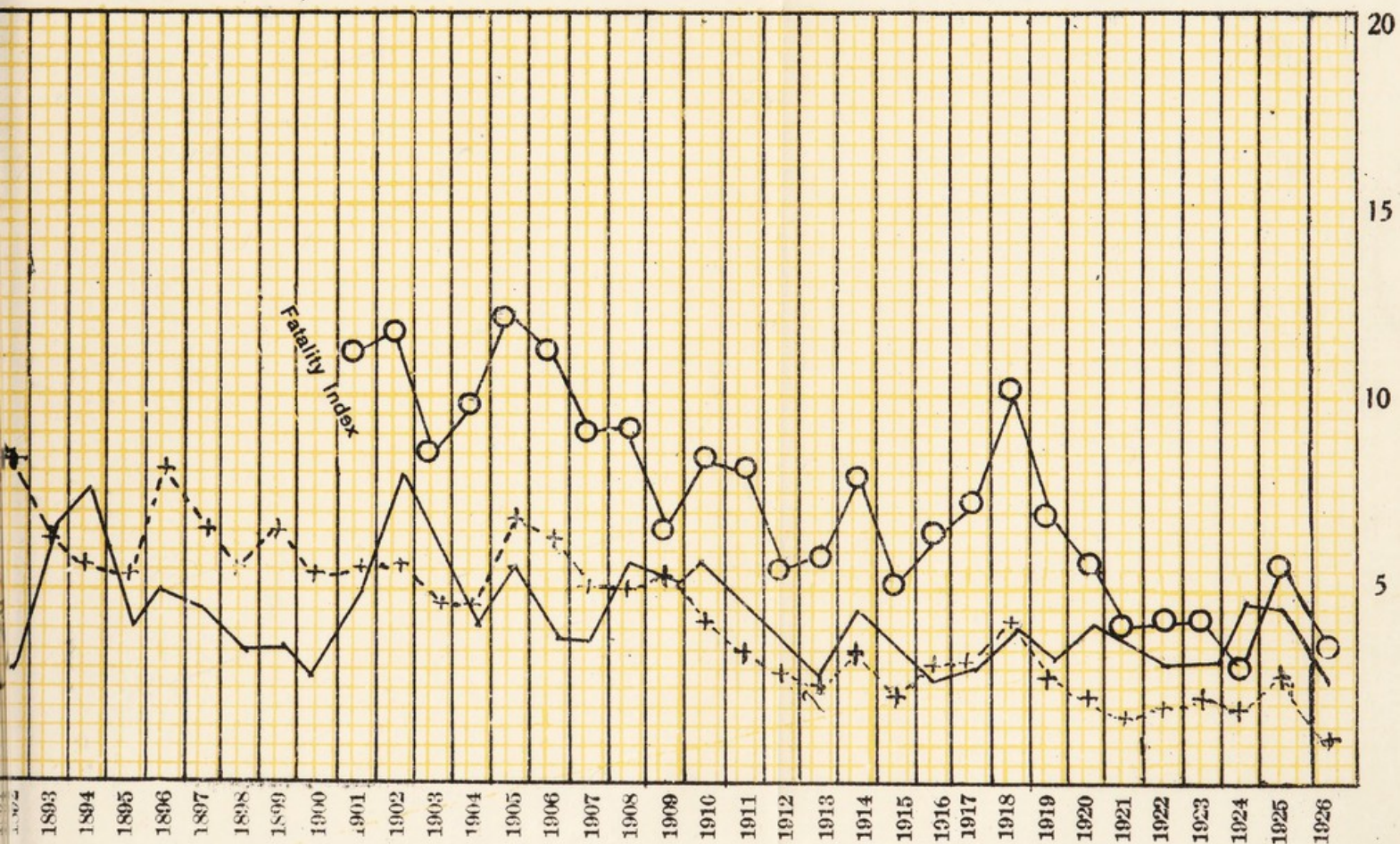
**Table I.**  
**SCARLET FEVER IN THE CITY OF LIVERPOOL, 1916-1926.**

	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.
Cases ... ..	2,148	2,277	3,020	2,735	3,230	3,062	2,419	2,307	3,790	3,561	2,241
Deaths ... ..	59	69	125	74	70	45	39	43	63	93	2
Case-rate per 1,000 inhabitants ...	2·7	2·9	3·8	3·1	4·1	3·7	2·9	2·8	4·5	4·2	2·
Death-rate per 100,000 inhabitants ...	7·6	8·8	16·0	9·3	8·9	5·5	4·7	5·2	7·4	11·0	2·
Fatality rate per 100 cases ... ..	2·8	3·0	4·1	2·6	2·2	1·5	1·6	1·8	1·7	2·6	1·



## CITY OF LIVERPOOL.

Scarlet Fever 1890-1926. Case Rate per 1000 Population,  
Fatality Rate per 100 Cases & Fatality Index (corrected for age at attack of cases.)

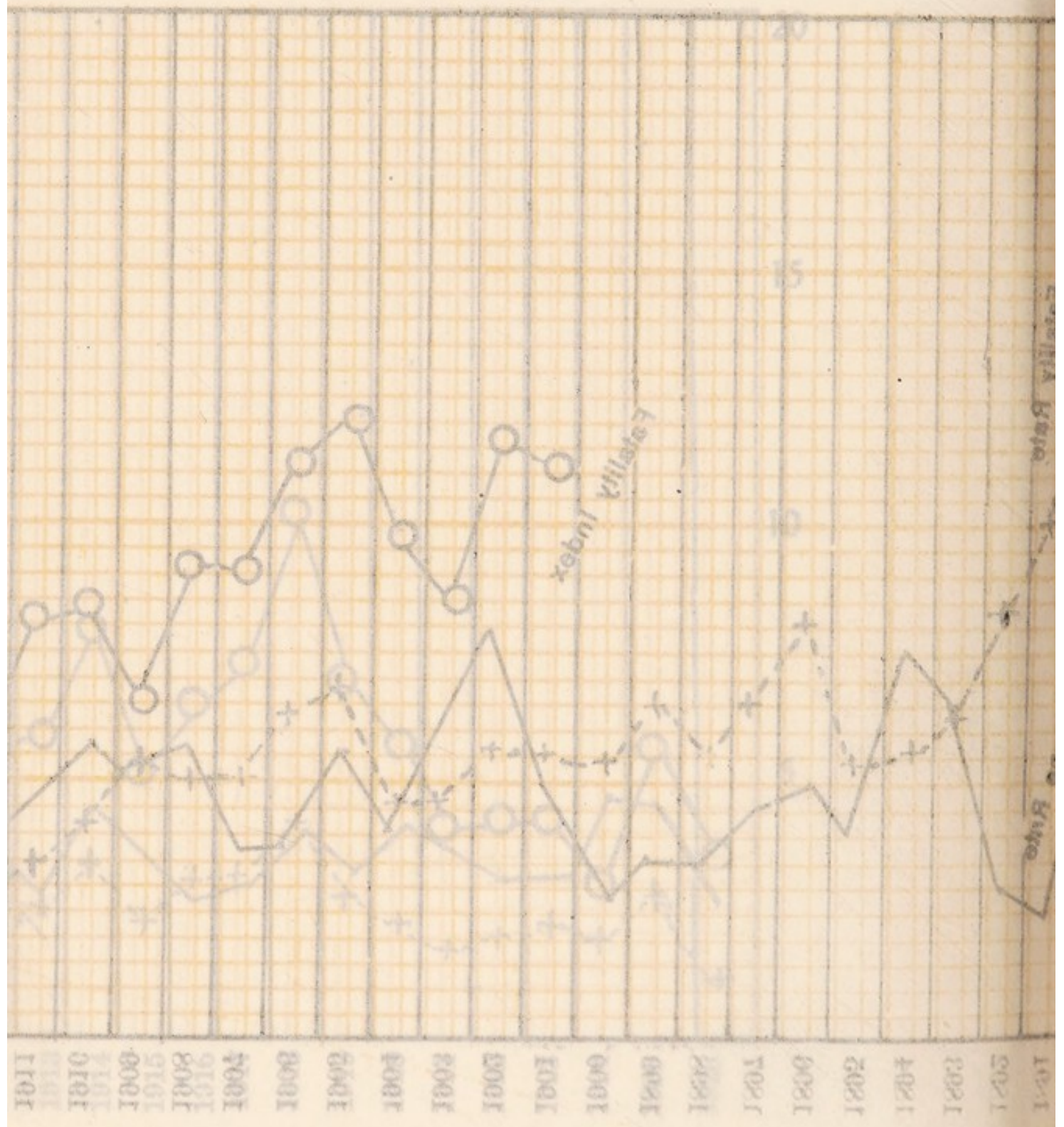




# CITY OF LIVERPOOL

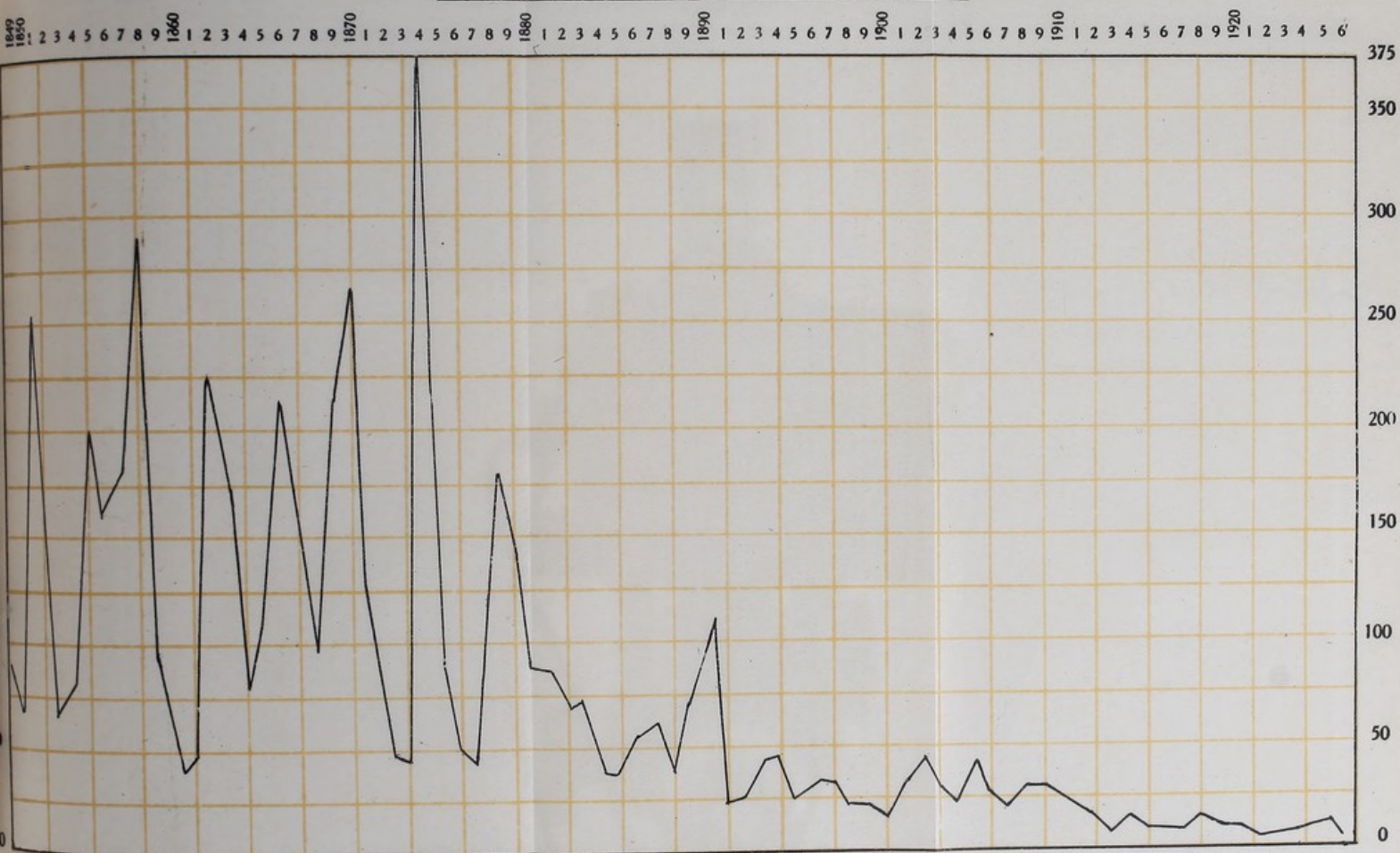
Scarlet Fever 1880-1925, Case Rate

Fatality Rate per 100 Cases & Fatality Index (cont)





CITY OF LIVERPOOL. Scarlet Fever Death Rate per 100,000, 1849-1926.



## CITY OF LIVERPOOL

[illegible]



During 1926, 2,244 cases and 24 deaths were recorded, giving an attack rate of 2·6 per 1,000, and a mortality rate of 2·8 per 100,000 of the population. These are the lowest figures ever recorded in this city. The low mortality is due not only to the slight prevalence of scarlet fever, but also the small proportion of deaths to notified cases (fatality rate), which was 1·1 per cent., again the lowest figure recorded. The importance of scarlet fever, however, arises not only from the deaths but from the cases of heart, kidney and middle ear disease which it occasions.

Reference to Table II. on page 28 will show that, as in previous years, the fatality, and therefore also the mortality, of scarlet fever was least in the outer districts of the city, but higher in the middle, and especially in the central portions of the city. In the outer districts, with a population aggregating 223,834 persons, among 707 cases of scarlet fever notified there occurred only two deaths. This gives a fatality of only 0·3 per cent.

For the last three years the proportion of secondary to primary cases—i.e., the occurrence of multiple cases in one house—has been highest in the central districts instead of in the outer districts, as in the preceding three years. This probably indicates the growth of a susceptible population in the central districts.

In the third table these cases and deaths are distributed into the several wards, which have also been aggregated into three zones, a central, a middle and an outer, comprising districts 1 to 2, 3 to 7, and 8 to 12, respectively.

Table 4 shows the deaths distributed according to age, sex and the quarter of the year. The last section shows the ages of notified cases and the fatality rate at the several age periods; from this it will be observed that while during the first year of life 14·7 per cent. of cases proved fatal, the fatality steadily declined with increasing age; no deaths occurred in persons over 10 years of age. The following comparison shows that scarlet fever was at nearly every age more fatal in 1925 than in 1924, and less fatal in 1926 than in either 1924 or 1925; the figures give the fatality per 100 cases at each age:—

	Under 1 year.	1-	2-	3-	4-	5-	10-	Over 15-	All ages.
1924	9·7	6·6	3·9	2·8	1·8	1·1	0·4	1·1	1·7
1925	14·5	16·5	8·2	4·3	2·5	1·1	0·5	0·0	2·6
1926	14·7	3·0	1·9	1·9	0·8	0·8	0·0	0·0	1·1

Table 2.  
CITY OF LIVERPOOL.—SCARLET FEVER.

Districts	Case Rates per 1,000 population.					Death Rates per 100,000 population.					Fatality Rates per 100 cases.				
	1922	1923	1924	1925	1926	1922	1923	1924	1925	1926	1922	1923	1924	1925	1926
Central (1-2)	1.5	1.65	3.2	3.53	2.3	3.1	3.1	8.4	14.6	3.8	2.1	1.9	2.6	4.1	1.6
Middle (3-7)	3.1	2.75	4.7	4.35	2.5	6.0	5.5	8.2	11.6	3.4	1.9	2.0	1.8	2.6	1.4
Outer (8-12)	2.9	3.28	5.3	4.31	3.2	3.4	6.0	5.3	7.6	0.9	1.7	1.7	1.0	1.8	0.3
Whole City	2.9	2.82	4.5	4.23	2.7	4.7	5.2	7.5	11.0	2.6	1.8	1.9	1.7	2.6	1.1

Districts	Percentage Proportion of Secondary to Primary Cases.					Percentage Proportion of Children 0-2 years old to Total Cases.					Percentage Proportion of Children 0-5 years old to Total Cases.				
	1922	1923	1924	1925	1926	1922	1923	1924	1925	1926	1922	1923	1924	1925	1926
Central (1-2)	11.5	9.9	15.7	16.9	15.1	9.2	5.4	9.7	8.3	9.1	31.5	49.5	43.9	29.4	39.8
Middle (3-7)	11.6	10.8	14.4	16.9	10.0	5.5	5.0	5.0	5.7	6.0	28.2	28.9	29.4	27.0	34.5
Outer (8-12)	25.2	13.5	14.5	14.9	11.7	5.0	2.0	2.6	4.7	5.0	23.9	14.7	25.5	22.2	28.3
Whole City	15.0	13.3	16.4	18.0	13.7	5.7	4.1	4.9	5.8	6.2	27.1	26.2	29.8	26.1	32.1



Table No. 3.  
SCARLET FEVER, 1926.

District.	Estimated Population, 1926.	Cases.	Deaths.	Attack 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. Exchange .....	82,771	167	3	2.0	3.6	1.8	17	8	43
2. Abercromby .....	48,106	139	2	2.8	4.1	1.4	13	10	36
3. Everton .....	130,210	213	9	1.6	6.8	4.2	7	9	51
4. Kirkdale .....	73,833	156	1	2.1	1.3	0.6	7	7	34
5. Edge Hill .....	91,785	292	2	3.2	2.2	0.7	10	4	30
6. Toxteth .....	111,306	242	3	2.2	2.7	1.2	12	7	38
7. Walton .....	87,796	328	2	3.7	2.3	0.6	14	4	27
8. West Derby East .....	87,394	290	1	3.3	1.1	0.3	11	6	30
9. Wavertree .....	89,543	315	1	3.5	1.1	0.3	13	5	28
10. Toxteth E. .... (Sefton Park)	34,002	50	1	1.4	3.0	2.0	6	2	12
11. Fazakerley .....	6,673	20	...	3.1	...	...	6	15	45
12. Woolton .....	6,174	32	...	5.2	...	...	23	3	22
Central Districts (1 to 2) ...	130,877	306	5	2.3	3.8	1.6	15.1	9.1	39.8
Middle Districts (3 to 7) .....	494,822	1,231	17	2.5	3.4	1.4	10.0	6.0	34.5
Outer Districts (8 to 12) ...	223,834	707	2	3.2	0.9	0.3	11.7	5.0	28.3
Whole City .....	849,593	2,244	24	2.7	2.6	1.1	13.7	6.2	32.1

\* Cases are those with onsets in 1926.

**Table No. 4.**  
**DEATHS FROM SCARLET FEVER.**

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.		1926.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total
Exchange .....	1	...	...	1	1	...	...	...	2	1	3
Abercromby .....	...	2	...	...	...	...	...	...	...	2	2
Everton .....	2	3	1	1	1	1	...	...	4	5	9
Kirkdale .....	...	...	...	...	1	...	...	...	1	...	1
Edge Hill .....	1	1	...	...	...	...	...	...	1	1	2
Toxteth .....	...	2	1	...	...	...	...	...	1	2	3
Walton .....	...	1	...	1	...	...	...	...	...	2	2
West Derby .....	...	...	...	1	...	...	...	...	...	1	1
Wavertree .....	1	...	...	...	...	...	...	...	1	...	1
Toxteth East .....	...	...	...	...	...	...	...	...	...	...	...
Fazakerley .....	...	...	...	...	...	...	...	...	...	...	...
Woolton .....	...	...	...	...	...	...	...	...	...	...	...
<b>City .....</b>	<b>5</b>	<b>9</b>	<b>2</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>...</b>	<b>...</b>	<b>10</b>	<b>14</b>	<b>24</b>

**AGES AT DEATH.**

Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	60 and up- wards.	All Ages.
5	3	3	4	2	7	...	...	...	...	...	...	...	24

**AGES OF NOTIFIED CASES.**

34	101	155	206	236	973	310	100	93	29	4	3	...	2244
32·6%					43·4%		13·9%		10·3%				

**PERCENTAGE FATALITY AT EACH AGE.**

14·7	3·0	1·9	1·9	0·8	0·76	...	...	...	...	...	...	...	2·6
------	-----	-----	-----	-----	------	-----	-----	-----	-----	-----	-----	-----	-----

N.B.—Deaths in Public Institutions are transferred to the districts whence the patients came.



RETURN CASES.—Cases occurring within the outside margin of one month of the discharge of a case from hospital to the same house were regarded as “return cases.” Of the 2,025 cases discharged from hospital after suffering from scarlet fever, 60, or 2·9 per cent., were associated with recurrent infection in this way. In only seven houses did more than one “return case” arise, namely, 2 cases in 5 instances, and 3 in 2 instances. The proportion of “return cases” to cases discharged from hospital was 1·8 in 1920, 2·7 in 1921, 3·3 in 1922, 2·6 in 1923, 3·4 in 1924, and 3·3 in 1925.

Table 5.

## SCARLET FEVER, RETURN CASES.

	1926.		Average of past 7 years.	
	No. of cases associated with return cases.	Expressed as a percentage of cases discharged from hospital.	No. of cases associated with return cases.	Expressed as a percentage of cases discharged from hospital.
January ... ..	11	4·8	8·1	2·9
February ... ..	8	3·9	7·1	2·9
March ... ..	7	3·8	6·1	2·8
April ... ..	8	4·3	5·8	2·8
May ... ..	3	1·5	7·1	3·4
June ... ..	3	1·8	4·6	2·4
July ... ..	7	5·0	6·0	2·8
August ... ..	2	1·6	3·9	2·0
September ... ..	1	0·6	3·0	1·3
October ... ..	8	5·7	4·1	2·3
November ... ..	0	0·0	5·7	2·0
December ... ..	2	1·2	9·0	2·6
WHOLE YEAR ...	60	2·9	70·9	2·3

### DICK TESTING AND IMMUNISATION AGAINST SCARLET FEVER.

The principles of this method of preventing scarlet fever are identical with those described as available against diphtheria (see p. 24), except that no anti-toxin is given with the toxin. The nursing and/or other staffs of the City Hospital, Fazakerley, City Hospital North and City Hospital South have been tested and/or immunised against scarlet fever with satisfactory results.

In February, 1927, at an institution for children, 220 were tested; of these 30, or 13·6 per cent., were found susceptible and received prophylactic injections, as did 19 children under 7 years of age, who were not tested. In most cases three, but in some cases four, doses were given, the total amount of toxin received being 6,500 skin-test doses.

### MEASLES.

The number of deaths from Measles has shown a tendency to decline of recent years. During 1926 there were 221 deaths, as against 300 deaths which was the average of the past ten years. The mortality rate was 26·0 per 100,000 of the population.

Measles became a notifiable disease in 1915 by Order of the Local Government Board (now the Ministry of Health); the disease is no longer generally notifiable, but in Liverpool is notifiable on a voluntary basis. During the year, 8,694 cases came under the notice of the Medical Officer of Health, the sources of information being as follows:—

Notified by medical practitioners, 6,437.

Information from schools, etc., 2,155.

The proportion of deaths to cases, or fatality rate, was 2·5 per cent., a figure considerably lower than the average of the past ten years, namely 3·4 per cent. The mortality in measles depends mainly upon the age at which infection occurs; as shewn in Table 4, the great majority of the deaths occur in children under four years of age. Any increase in the proportion of cases among children under this age will be attended by a corresponding rise in fatality.



The experience of the past eleven years is shown in the following table :

Table 1.

	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.
Cases .....	14,732	9,230	9,268	3,983	11,448	9,143	3,570	11,089	5,709	11,202	8,694
Deaths .....	264	436	407	103	387	328	171	356	148	406	221
Case rate per 1,000 inhabitants .....	19.0	11.8	11.8	5.1	14.6	11.2	4.3	13.4	6.9	13.3	10.3
Death rate per 100,000 inhabitants .....	34	56	52	13	49	40	21	43	17.7	48.3	26.0
Fatality rate (percentage of deaths per 100 cases) ...	1.1	4.7	4.3	2.6	3.4	3.6	4.8	3.2	2.6	3.6	2.5

The experience of many years has shown that measles tends to recur in waves which follow each other at intervals of about 92 weeks. In the annual report for 1924 a diagram was given showing week by week the numbers of cases reported during the last ten years. Diagrams published in the annual reports for 1911 and 1921 gave the deaths during the preceding decades. The periodic recurrences are very regular over considerable periods, but when the epidemic is due to reach its height in one of the three autumn months, August, September or October, it fails to do so, two maxima occurring instead, one before and the other after the expected date.

The second table shows the deaths from measles in the several districts of the city during the past six years. Exchange, Everton, Edge Hill and Toxteth—the more central districts of the city—were principally affected, 153 out of the total of 221 deaths occurring in those districts. These four districts contain approximately half the population of the city, and the density of population is 137 persons per acre. These districts also have a higher birth rate, and it is probable that their greater mortality from measles is dependent upon the earlier age at which the children living in these districts are attacked by measles.

The third table gives the ages of attack and the ages at death of the 6,437 cases notified by doctors, and from these figures the corresponding fatality rates per 100 cases at each age have been obtained. It will be

seen that the fatality rates in the first three years of life are considerably higher than at any subsequent period.

The following table gives the notified cases and deaths at each age for the whole period 1921-26 :—

Ages.	0	1	2	3	4	5	6	7	8	9	10-15
Cases ...	2632	4954	4415	4433	4184	6572	4081	1531	769	429	892
								13,382			
Deaths ...	423	765	253	102	35			54			4
Fatality Rate (percentage of deaths to cases).	16.1	15.4	5.7	2.3	0.8			0.4			0.4

Apart from the school closure, referred to elsewhere, other measures to limit the ravages of the disease include efforts to secure the isolation of the patients; in view of the heavy mortality among children under three years of age (see Table 3), parents are strongly urged to keep those of tender age apart from those already affected. Children coming from a house in which a case of measles has occurred are excluded from school for 16 days; children over 7 years of age who have already had measles are exempted.

The Order of the Ministry of Health authorises local authorities to provide medical assistance including nursing for the poorer inhabitants of their district, 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 during periods of outbreak. In consequence of the visits of these nurses, many children have benefited from the assistance and advice given, and in some instances children have been removed for hospital treatment who would otherwise have been left at home without adequate care and attention. The visits, etc., made by these nurses in the course of 1926 were as follows :—

New cases visited during year 1926 ...	...	6,605
Cases nursed	“ “ ...	866
Re-visits to cases	“ “ ...	8,762



As 98 per cent. of deaths from measles are due to complications, mainly pneumonia, there can be little doubt that the work of these nurses has resulted in much saving of life.

Table 2.

Deaths from measles for the years 1921 to 1926, after distribution of the institutional deaths according to the place of residence:—

District.	1921.	1922.	1923.	1924.	1925.	1926.
Exchange ...	48	23	<b>76</b>	20	<b>112</b>	51
Abercromby ...	<b>15</b>	12	<b>35</b>	8	<b>33</b>	15
Everton ...	<b>99</b>	38	<b>68</b>	30	<b>81</b>	44
Kirkdale...	31	14	26	13	<b>36</b>	16
Edge Hill ...	25	22	<b>29</b>	12	<b>28</b>	29
Toxteth ...	<b>58</b>	40	<b>60</b>	32	<b>54</b>	29
Walton ...	15	6	<b>19</b>	10	<b>17</b>	13
West Derby ...	18	9	13	10	<b>14</b>	8
Wavertree ...	15	4	<b>30</b>	7	<b>29</b>	9
Sefton Park ...	1	2	...	<b>3</b>	1	<b>6</b>
Fazakerley ...	...	1	...	3	...	...
Woolton ...	<b>3</b>	...	...	...	1	1
Total ...	<b>328</b>	171	356	148	406	221

**Table 3.**  
**DEATHS FROM MEASLES.**

DISTRICTS	QUARTERS.								YEAR 1926.				
	March		June.		Sept.		Dec.		M.	F.	Total.		
	M.	F.	M.	F.	M.	F.	M.	F.					
Exchange .....	1	3	7	3	4	4	22	7	34	17	51		
Abercromby .....	2	3	1	3	3	2	1	...	7	8	15		
Everton .....	6	4	12	9	6	6	1	...	25	19	44		
Kirkdale .....	1	1	4	3	6	1	...	...	11	5	16		
Edge Hill .....	5	3	6	6	4	2	1	2	16	13	29		
Toxteth .....	4	...	7	10	1	1	3	3	15	14	29		
Walton .....	3	3	2	3	...	...	2	...	7	6	13		
West Derby .....	3	1	3	...	...	...	1	...	7	1	8		
Wavertree .....	2	...	2	2	1	...	1	1	6	3	9		
Toxteth East .....	...	1	4	1	...	...	...	...	4	2	6		
Fazakerley .....	...	...	...	...	...	...	...	...	...	...	...		
Woolton .....	...	...	...	...	1	...	...	...	1	...	1		
City .....	27	19	48	40	26	16	32	13	133	88	221		
AGES AT DEATH.													
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	60—	All Ages.
58	96	33	13	7	9	2	...	2	...	...	...	1	221
AGES OF NOTIFIED CASES.													
425	758	719	723	794	2590	240	188					6437	
PERCENTAGE FATALITY AT EACH AGE.													
13·6	12·7	4·6	1·8	0·9	0·3	0·8	1·6					3·44	

N.B.—Deaths in public institutions are transferred to the districts whence the patients came.



Table 4.

## MEASLES DURING THE YEAR 1926.

Statement showing the total numbers of cases brought under the notice of the medical officer, from schools, and by notifications from medical practitioners :—

Age.	Cases occurring in children of school Age from both sources	Cases notified by Medical Practitioners.	Number of Deaths.	Fatality Rate per 1,000 cases
0—1	...	425	58	136·5
1—2	...	758	96	126·7
2—3	...	719	33	45·9
3—4	...	723	13	18·0
4—5	204	794	7	8·8
5—6	1448	1213	11	4·3
6—7	1081	878		
7—8	335	259		
8—9	191	152		
9—10	129	88	2	0·0
10—11	105	76		
11—12	79	68		
12—13	58	39		
13—14	35	36	3	16·0
14—15	16	21		
15—16	9	188	3	16·0
16 upwards	...			
	3,685	6,437	221	34·4

WHOOPIING COUGH.

The number of cases coming to the notice of the medical officer during 1926 was 1,971, and the number of deaths 188, corresponding to a death-rate of 22·1 per 100,000 inhabitants, which is distinctly below the average of the past ten years. The average death-rates from whooping cough during the past 77 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
1920-23	...	...	...	...	...	...	23·6
1924	...	...	...	...	...	...	27·0
1925	...	...	...	...	...	...	27·0
1926	...	...	...	...	...	...	22·1

This shows a very considerable decline in mortality. Whether the 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 per 100 cases :—

Years.	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
Cases ...	3056	4244	788	2804	3019	2025	2261	2321	2274	1971
Deaths ...	132	364	53	228	210	182	156	169	227	188
Death Rate per 100,000 of the population ...	17	46	7	29	26	22	19	20	27	22
Fatality Rate (Percentage of deaths to cases)	4·3	8·6	6·7	8·1	8·1	9·0	7·9	7·3	9·9	9·5



As the disease is not compulsorily notifiable, caution is necessary in drawing conclusions from the figures. As whooping cough is extremely fatal in the first two or three years of life it is of the utmost importance that children of tender years should be protected from possible sources of infection.

### CEREBRO-SPINAL FEVER.

Sixteen cases of cerebro-spinal fever occurred during 1926, of which 12 (or 75 per cent.) proved fatal, making a death rate of 1·4 per 100,000 of the population. The cases during the years 1916 to 1925 were 37, 34, 17, 26, 27, 26, 18, 8, 13 and 15, respectively.

Diagnosis was confirmed by the finding of the causal organism (the meningococcus) in the cerebro-spinal fluid after lumbar puncture in eight cases. In four other cases the result of examination of the cerebro-spinal fluid pointed to a meningococcal infection, although the organism was not found.

In seven cases admitted as cerebro-spinal meningitis the organisms found were not those of cerebro-spinal fever, but of tubercular meningitis; in four other cases the disease was found to be pneumonia, in a further two cases meningism and food poisoning, respectively.

### ENCEPHALITIS LETHARGICA.

This disease was made notifiable in 1919, one death from this cause was reported in 1918. During 1924 189 cases were reported in the city. During 1926 Encephalitis lethargica was still prevalent in Liverpool. After excluding 11 duplicate notifications, 142 notifications of cases of Encephalitis lethargica were received; 28 of these were found, mostly after admission to hospital, to be suffering from other diseases, namely:—

Tuberculous meningitis	...	...	...	9 cases.
Bronchitis and Broncho-pneumonia	...			3 „
Other diseases, namely, Cerebro-spinal fever 1, Pulmonary tuberculosis 2, Senile Paralysis agitans 2, Uræmia 1, others 10			16	„

There are left, therefore, 114 cases which remained in the records as cases of Encephalitis lethargica. There were 29 deaths certified as from Encephalitis lethargica; of these 4 were deaths of persons either notified in earlier years and whose malady had become chronic, or were transferred deaths from outside areas; the net total of deaths attributable to Encephalitis lethargica contracted in 1926, was therefore 25. The fatality rate per 100 cases correspondingly rose from 10·6 in 1924 to 33·4 in 1925, but becomes 25·4 per cent. for 1926. During the period 1918-1926 there have been notified 503 cases, of which 141, or 28·3 per cent., proved fatal. The incidence and mortality during this period are shown in the following table:—

Table 1.

## CITY OF LIVERPOOL.

## ENCEPHALITIS LETHARGICA, 1926.

	1918-19	1920	1921	1922	1923	1924	1925	1926
Cases ... ..	3	17	27	5	111	189	108	114
Rate per 1,000 population ...	...	0·02	0·03	0·01	0·13	0·22	0·13	0·14
Deaths... ..	1	2	6	3	36	22	44	25
Rate per 100,000 population	...	0·20	0·73	0·36	4·30	2·40	5·22	25·4
Fatality per 100 cases ...	...	12	2·25	40	3·24	10·6	40·5	25·4

\* This number and rate includes the deaths of 4 persons who were either notified in earlier years or were transferred from outside districts. If these deaths are excluded the fatality rate becomes 21·9 per cent.



## INCIDENCE OF DISEASE.

Prior to 1923 the disease appeared in groups of cases associated in time and locality, although no direct association of cases could be ascertained; but in 1924 the area in Liverpool principally affected formed a broad band stretching from Sefton Park and Wavertree to Everton and Kirkdale. During 1925 and 1926 the cases were again scattered through the city. In May, two cases were admitted into the City Hospital, Fazakerley, from Waterloo and Gt. Crosby, respectively. In the following table the incidence upon the several districts of the city and the rate per 1,000 inhabitants for the years 1923 to 1926 is given; for the year 1926 the 37 chronic cases reported have been excluded:—

Table 2.

District	1923				1924				1925				1926			
	Rate per		Cases		Rate per		Cases		Rate per		Cases		Rate per		Cases	
	Cases	100,000			Cases	100,000			Cases	100,000			Cases	100,000		
Sefton Park	...	3	8.6	...	15	42.2	...	6	17.8	...	2	5.9	...	2	5.9	...
Everton	...	22	17.2	...	47	36.2	...	15	11.6	...	10	7.6	...	10	7.6	...
Wavertree	...	9	19.7	...	15	32.5	...	7	14.9	...	7	14.9	...	7	14.9	...
Fazakerley	...	—	—	...	2	31.7	...	1	15.1	...	1	14.8	...	1	14.8	...
Toxteth	...	17	15.2	...	25	23.3	...	14	12.6	...	14	12.6	...	14	12.6	...
Edge Hill	...	14	14.9	...	21	22.0	...	15	16.5	...	8	8.7	...	8	8.7	...
Woolton	...	1	10.4	...	2	33.4	...	—	—	...	1	16.2	...	1	16.2	...
Garston	...	2	6.6	...	6	20.0	...	5	16.1	...	3	8.8	...	3	8.8	...
Scotland	...	4	8.7	...	9	19.1	...	6	13.3	...	5	10.9	...	5	10.9	...
Kirkdale	...	4	5.6	...	10	15.2	...	8	10.9	...	6	8.1	...	6	8.1	...
Exchange	...	5	14.0	...	5	13.8	...	3	8.3	...	4	11.1	...	4	11.1	...
Abercromby	...	5	10.8	...	5	10.6	...	7	14.9	...	8	16.6	...	8	16.6	...
Walton	...	10	11.7	...	9	10.4	...	13	14.9	...	5	5.7	...	5	5.7	...
West Derby East	...	13	16.4	...	8	9.9	...	6	6.9	...	3	3.4	...	3	3.4	...
Other diseases	...	—	—	...	5	—	...	—	—	...	—	—	...	—	—	...
Imported cases, etc.	...	2	—	...	5	—	...	2	—	...	—	—	...	—	—	...
Whole City	...	111	13.4	...	189	22.1	...	108	12.8	...	77	9.0	...	77	9.0	...

**Table 3.**  
CITY OF LIVERPOOL.  
CASES BY MONTH AND YEAR OF ONSET AND YEAR OF REPORT.

	Total 1922	1923 Reported in				Total	1924 Reported in			Total	1925 Reported in		Total	1926
		1923	1924	1925	1926		1924	1925	1926		1925	1926		
January ...	—	47	—	—	1	48	4	1	—	5	12	2	14	8
February ...	1	24	—	1	—	25	6	—	1	7	8	—	8	5
March ...	1	7	—	1	—	8	28	1	—	29	10	3	13	8
April ...	—	5	—	—	—	5	34	3	2	39	7	—	7	8
May ...	—	5	—	—	—	5	28	1	2	31	8	—	8	4
June ...	—	4	—	1	—	5	18	1	—	19	4	—	4	5
July ...	2	—	—	—	—	—	9	—	—	9	4	2	6	3
August ...	1	1	—	—	—	1	11	—	—	11	4	—	4	1
September ...	—	—	—	—	—	—	8	2	1	11	—	1	1	5
October ...	1	3	1	—	—	4	9	2	—	11	4	2	6	4
November ...	1	3	3	—	1	7	8	1	—	9	—	3	3	2
December ...	7	4	3	1	1	9	7	8	—	15	1	3	4	4
<b>TOTAL ...</b>	<b>14</b>	<b>103</b>	<b>7</b>	<b>4</b>	<b>3</b>	<b>117</b>	<b>170</b>	<b>20</b>	<b>6</b>	<b>196</b>	<b>62</b>	<b>16</b>	<b>78</b>	<b>57</b>
Indef. Reported in 1925	2					3				3			1	—
Ditto 1926	1					3				7			2	4
<b>TOTAL ...</b>	<b>17</b>					<b>123</b>				<b>206</b>			<b>81</b>	<b>61</b>

The greatest number of cases occurred between 20 and 30 years of age.

**Table 4.**  
AGES OF CASES AND DEATHS, 1926.

Age.	0-4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89
Cases ...	7	6	6	15	27	20	16	9	6	1	—
Deaths*	3	—	1	3	4	4	2	5	2	—	—
Fatality per cent. }	43	—	16	20	15	20	12	55	33	—	—

\* Five deaths occurring in 1926 among persons notified in 1923 to 1925 have been excluded from this table.



It is clear from the above table that half the cases occurred under 30 years of age, and that over 60 years of age the liability to contract the disease is small. On the other hand, the fatality increases rapidly with advancing age. The smaller fatality in childhood and adolescence is unfortunately offset by the liability to develop sequelae under 20 years of age (see page 44).

51 of the cases were males and 63 were females.

### METHOD OF SPREAD.

Doubt has been expressed in some quarters as to the infectious character of the disease. Enquiry points clearly to the disease being communicable.

Of the 114 cases reported in 1926, 37 were chronic cases, whose illness was contracted in earlier years. In both acute and chronic cases enquiry, in a number of instances, revealed association with previous cases, several relating to infection contracted in 1924. There can be little doubt that if information relating to the milder types of cases were more complete the association between cases would be traceable in a larger proportion.

#### I.—ASSOCIATION WITH ACUTE CASES.

Group 1.—R.W., male, 50 years, living at 2, G— G—. Onset June 29th, 1924. A child, J.H., female, 7 years, living at 5, K— Pla., G— G—. Onset, July 9th, 1924. On October 9th, 1924, C.Q., female, 7 years, was taken ill. She resided at 195, H— St., but frequently visited an aunt at No. 31, G— G—, next door to the house where J.H. lived. J.H. became a chronic case, with marked character changes.

Group 2.—Two other cases occurred in May, 1924, at 93 and 115, H— St.; these were two men, 28 and 24 years, who were intimate friends, but appeared to have no direct association with the above group of cases, though residing in the same street as the third case quoted above.

Group 3.—D.L., 17 years, and S.K., 12 years, males, residing in 16 and 30, C— St. D.L. began to be ill in March or April,

1924, and S.K. on April 23rd, 1924. These two groups of cases only came to light when they became chronic cases.

Group 4.—A nurse at a hospital, where acute cases were received.

## II.—ASSOCIATION WITH CHRONIC CASES.

Group 1.—L.M., a girl living at 208, A—— St., was attacked in 1923, being then 7 years of age. She became a chronic case, with considerable conduct changes. On December 5th, 1926, her brother was attacked. He appears to have made a complete recovery. L.M. continues to have relapses from time to time, in which she becomes more or less unconscious.

Group 2.—A nurse engaged with chronic cases.

Group 3.—J.S., 38 years, male, living at 26, A—— St. Onset 1925, he became a chronic case with Parkinsonism; N.R., male, 6 years, living at 62, A—— St., onset July 26th.

Group 4.—Mrs. M.W.B., 37 years. Onset March 8th. Her sister, with whom she lived, had an attack in August, 1925.

Thus in nine instances, or about eight per cent. of the total, it was possible to trace association with a preceding case. From enquiries made in the past four years such an association was found in 64 out of 481 cases, or 13 per cent. of the whole. There can be no doubt of the infectivity of the disease.

## AFTER-EFFECTS OF ENCEPHALITIS LETHARGICA IN CHILDREN,

This disease is of serious import because it produces physical, mental and moral after-effects. The physical condition most frequently occurring is known as Parkinsonism, and is characterised by a rigidity of the body, neck, and face, whilst the hands and fingers are often in a perpetual state of tremor. The child's body becomes bent, and the expression of the face becomes fixed and masklike. These children are frequently of normal intelligence. Parkinsonism is a frequent after-effect in adults but is less frequent in children than are mental affections.



Accompanying this condition, or occurring quite independently, there may be some mental deterioration, and this is the more likely to occur the younger the age at which the child is attacked; in degree the deterioration may be anything from slight dulness even up to imbecility. This deterioration may be progressive, or the child's mental progress may be merely temporarily arrested. The deterioration may be evidenced by the children becoming slovenly or babyish, whilst the older ones may also become churlish. Another type of after-effect is an extraordinary alteration of character that occurs in certain other children, who, in consequence, have been designated "Conduct cases." In these there occurs an alteration in their emotional response, and a diminution of the control of the higher centres of the brain over the lower, so that children previously well behaved become petulant, hot-tempered, disobedient, and impudent. At school they are inattentive and sometimes suddenly leave their places and wander aimlessly about the classroom. In more marked cases there is even a graver deterioration of conduct; they spit about the house, swear and use foul language on the slightest provocation, pilfer articles left lying about, and sometimes get into the hands of the police for stealing. In extreme cases, fortunately rare, moral control is almost entirely lost; an idea has only to enter their minds for it to be instantly acted upon. Violent, abusive, lying, thieving, and vagabond, and sometimes also sexually precocious, it is a relief to their parents when they are admitted to a reformatory school or other institutions. Physical punishment effects little or no improvement in their behaviour.

The character changes are in many instances associated with a remarkable alteration, or rather inversion, of the daily rhythm of sleeping and waking, resulting in wakefulness during the night hours, their conduct then being often at its worst. The evening hours bring bodily restlessness and mental activity; to distract themselves they have been known to tear up their bedclothes or even to endeavour to set the house on fire. At dawn they sink into a sound sleep from which it is difficult to rouse them, but if forced to get up and spend the day at school they shew obvious signs of fatigue, and often fall fast asleep there. If it were not that until the onset of the illness they were known to have been normal and well-behaved children one would not have hesitated to regard and even certify them as "Moral Imbeciles." That such certification, however, may be unjustifiable is evidenced by the fact that some cases have completely recovered from this condition.

In November, 1926, a full investigation of the condition of every known case of Encephalitis Lethargica in Liverpool, which has occurred in children of school age, has been made by Dr. Stallybrass, the Assistant Medical Officer of Health, in association with Dr. Gamlin, the Senior Assistant School Medical Officer.

Up till the 31st December, 1926, 503 cases of Encephalitis Lethargica had been notified in the city of Liverpool, and of these 143 had died. A considerable proportion of these apparently recovered were known later to be suffering from after-effects, both physical and mental, those affected in childhood apparently being the ones most likely to be mentally affected, and in November, 1926, the condition of all children under 16 years of age, 121 in number, known to have suffered from the disease, was investigated. It was found that 60 of these, almost exactly one-half, showed some mental alteration, whilst 36 could be regarded as approximately normal, the remainder showing, to a greater or less degree, some physical or mental defects. The conditions found were:—

Dead	...	...	...	...	...	...	...	4
Approximately normal	...	...	...	...	...	...	...	36
Parkinsonism alone	...	...	...	...	...	...	...	13
„ with mental defect	...	...	...	...	...	...	...	5
Mentally defective	...	...	...	...	...	...	...	6
Dull	...	...	...	...	...	...	...	6
Inversion of sleep rhythm	...	...	...	...	...	...	...	6
„ (recovered)	...	...	...	...	...	...	...	6
Grave character changes	...	...	...	...	...	...	...	24
Slight „ „	...	...	...	...	...	...	...	9
Partially blind	...	...	...	...	...	...	...	2
Tuberculosis	...	...	...	...	...	...	...	1
Involuntary movements	...	...	...	...	...	...	...	2
Not known	...	...	...	...	...	...	...	1

#### ACCOMMODATION AVAILABLE.

Acute cases are received into the City Fever Hospitals as well as into the General Hospitals and the Poor Law Infirmarys. Chronic cases



are occasionally received into the City Hospitals and General Hospitals, but are mainly treated in Poor Law Infirmaries or at home.

A number of the children had from time to time drifted in and out of reformatories and industrial schools; a few have been certified as mentally defective and removed to asylums or institutions for mentally defective persons; at the time of the investigation 15 were in such institutions.

1 was in an Asylum.

1 was in an institution for mental defectives.

4 were in Reformatory Institutions.

9 were in Poor Law Institutions, of whom 2 were in wards for mental defectives.

The proportion received into institutions of the above character steadily increases and several children or adolescents have been certified as mentally or morally defective during the course of the year 1927. A special ward for men and boys has been set apart in the Kirkdale Homes by the West Derby Board of Guardians, but these are largely adolescents or adults.

It is important to note that such children are often educable; moreover, in the great majority of instances, they urgently require disciplinary control, and for this reason certain of the mild cases have been allowed to return to school with, in several instances, excellent results in improvement of character. On the other hand, there remains a certain number of cases which, on account of the gravity of the condition, are too bad to be allowed to attend the Public Elementary School, and for which a special residential institution only would be suitable.

This investigation has shewn that in Liverpool 20 per cent. of the children who have suffered from Encephalitis Lethargica need such institutional treatment.

These "Conduct Cases" are often amenable to a kindly discipline, and to certify them all as moral imbeciles under the Mental Deficiency Act, or to place them among the insane, would appear to be unjustifiable in view of the possibilities of recovery, although in a few cases of long

standing which developed signs of mental or moral deterioration—e.g., sexual offences—this might be desirable. But as a rule the number of cases occurring in any one district is too small to enable the local authority of that area to make this special institutional provision economically.

There is no special institution in Liverpool, though the matter has several times come up for consideration, especially in relation to the circular letter sent by the Town Clerk of Birmingham on November 24th, when a general meeting was called together of a number of the larger municipalities, and the desirability of opening an institution for joint use of a number of local authorities was discussed.

#### ACUTE ANTERIOR POLIOMYELITIS (INFANTILE PARALYSIS).

During 1926 19 cases of poliomyelitis were notified, five of which, or 26 per cent., proved fatal. In 1925 four cases were reported, whilst 37, 5, 9, 4, 6, 2, 6, 6, 11, 39 and 14 cases were reported in the years 1914 to 1924. The cases during 1926 were reported as follows:—March, 1 case; April, 1 case; May, 2 cases; June, 1 case; July, 3 cases; August, 3 cases; September, 2 cases; October, 2 cases; November, 1 case; December, 3 cases. Two cases reported in April and May were old paralytic cases of long standing. Cases of polio-encephalitis, included in the above totals, were reported in September, November and December.

#### 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 1911-1920 it was 27·3 per cent. of all deaths; in 1921 it had again fallen to 22·1 per cent. of all deaths, but in 1924 it rose to 27·0 per cent., but in 1925 and 1926 it again fell to 24·9 and 24·1 per cent., respectively; these alterations correspond to the prevalence of influenza. The table below shows for deaths due to Respiratory diseases the actual



numbers, the percentage proportion to all deaths, the death-rates per 1,000 population, and the death-rates expressed as a percentage proportion of the rates experienced in 1871-80 (index figures) :—

DEATHS FROM RESPIRATORY DISEASES. (Including Influenza).

	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
1921-24 ...	12,128	26·1	3·66	57·7
1925 ...	2,947	24·9	3·49	61·3
1926 ...	2,809	24·1	3·30	57·7

The rate per 1,000 population had therefore declined in 1926 to 57·7 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.

During 1925 a further outbreak of influenza occurred in February and March, but was of a very mild type; the weekly number of deaths from respiratory diseases exceeded 80 for five weeks in those two months and 22 deaths from influenza were recorded in the week ending March 7th.

In 1926 influenza was again largely in abeyance, and the number of respiratory deaths exceeded 80 for three weeks in January and February, and for five weeks in April and May, when the maximum number of deaths from influenza, namely, 16 in a week, was recorded. Towards

the end of 1926 evidence of the approach of a further periodic wave began to appear. Cases of pneumonia, with onset of vomiting and other symptoms suggestive of influenza, were reported. In January, 1927, the limit of 80 respiratory deaths per week was passed, and this level was exceeded for eight weeks; the height of the epidemic occurred in the week ending March 5th, when 45 deaths from influenza, a further 194 respiratory deaths, and 443 deaths from all causes, were recorded. This was the most severe outbreak since that of 1922, when 51 deaths from influenza and 215 other deaths from respiratory diseases and 520 deaths from all causes occurred in the week ending February 22nd. The outbreaks were of comparable severity, and occurred at about the same time of year, but that of March, 1927, was noticeable in that the deaths exceeded the births in many parts of the country during the first quarter of the year; this however did not occur in Liverpool, and there was an excess of births over deaths of 842 in this city during the first quarter of 1927.

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, and the total respiratory deaths.

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

1926. Week ending.	Total Deaths.	Weekly Death Rate per 1,000 of Estimated Population	NUMBER OF DEATHS FROM			Total Respira- tory Deaths.	Percentage of Respi- ratory To Dea
			Influenza.	Pneumonia and Broncho- Pneumonia	Bronchitis.		
JANUARY 2 (2 days)	55	11·8	1	15	4	22	40
9 .....	266	16·3	3	44	39	85	32
16 .....	232	14·2	—	36	24	64	27
23 .....	279	17·1	4	43	29	79	28
30 .....	234	14·3	2	43	41	86	36
FEBRUARY 6 .....	249	15·3	1	35	23	61	24
13 .....	221	13·5	3	42	17	63	28
20 .....	237	14·5	—	34	22	58	24
27 .....	230	14·1	5	42	29	75	32
MARCH 6 .....	207	12·7	2	29	19	49	23
13 .....	196	12·0	1	21	24	47	24
20 .....	212	13·0	—	30	24	56	26
27 .....	252	15·5	7	34	28	65	25
APRIL 3 .....	300	18·4	4	50	33	86	28
	3,170	14·7	33	498	356	896	28



1926. Week ending.	Total Deaths.	Weekly Death Rate per 1,000 of Estimated Population	NUMBER OF DEATHS FROM			Total Respira- tory Deaths.	Percentage Proportion of Respira- tory to Total Deaths.
			Influenza.	Pneumonia and Broncho- Pneumonia	Bronchitis.		
10 .....	301	18.5	10	60	42	105	34.8
17 .....	280	17.1	16	43	36	86	30.7
24 .....	279	17.1	16	49	29	79	28.3
1 .....	253	15.5	5	53	34	90	35.6
8 .....	210	12.9	5	24	17	45	21.4
15 .....	222	13.6	2	26	24	54	24.3
22 .....	233	14.3	6	38	16	59	25.3
29 .....	249	15.3	1	33	23	61	24.5
5 .....	182	11.2	1	28	13	44	24.2
12 .....	165	10.1	3	19	14	34	20.6
19 .....	173	10.6	—	9	11	23	13.3
26 .....	158	9.7	1	23	14	39	24.7
3 .....	178	10.9	1	15	11	27	14.2
	2,883	13.6	67	420	284	746	25.9
10 .....	174	10.7	1	12	8	21	12.1
17 .....	168	10.3	1	20	7	29	17.3
24 .....	150	9.2	1	12	9	21	14.0
31 .....	181	11.1	1	8	4	15	8.3
7 .....	164	10.1	—	9	14	23	14.0
14 .....	146	8.9	—	5	5	10	6.9
21 .....	168	10.3	—	10	12	24	14.3
28 .....	167	10.2	—	10	7	17	10.2
4 .....	187	11.4	2	9	6	16	8.6
11 .....	195	12.0	—	11	7	23	11.8
18 .....	201	12.3	—	15	13	29	14.4
25 .....	197	12.1	1	13	3	16	8.1
2 .....	183	11.2	—	16	7	24	13.1
	2,281	10.7	7	150	102	268	11.8
9 .....	196	12.0	—	14	5	21	10.1
16 .....	166	10.2	1	17	10	29	17.5
23 .....	197	12.1	1	24	14	41	20.8
30 .....	234	14.4	1	24	20	48	20.5
6 .....	265	16.2	2	46	29	78	29.4
13 .....	227	13.9	4	26	38	67	29.5
20 .....	242	14.8	3	40	24	67	23.4
27 .....	204	12.5	1	35	22	59	29.0
4 .....	258	15.8	6	34	23	59	22.9
11 .....	251	15.4	—	39	33	75	29.9
18 .....	218	13.4	2	20	25	49	22.5
25 .....	224	13.7	2	35	24	59	26.4
31 .....	238	14.5	4	33	33	72	30.3
(6 days)							
	2,920	13.7	27	386	300	724	24.7
12 months ...	11,254	13.2	134	1,454	1,042	2,634	23.4

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 1925 and 1926 :—

	1925.		1926.	
	Cases.	Deaths.	Cases.	Deaths.
Acute Pneumonia ... ..	1,920	1,560	2,200	1,476
Malaria ... ..	52	3	56	4
Trench Fever ... ..	—	—	—	—
Dysentery ... ..	8	4	8	5
	1,980	1,567	2,264	1,485

Enquiry was made into all these cases; 1,747 cases of influenzal pneumonia were visited and 160 received assistance from nurses appointed for the purpose, 212 revisits being made.

The cases of malaria reported were either amongst ex-soldiers who had been infected whilst on service in tropical climates, or amongst the seafaring population, principally persons infected on the African coast.

DYSENTERY.

During 1926 eight cases of dysentery were reported in the city in addition to three cases which were brought into the Port of Liverpool on shipboard. Dysentery was formerly prevalent in Liverpool, as many as 233 deaths having been registered from this cause in one year. Many of the cases reported in recent years are persistent infections acquired abroad on military service or otherwise. Five of the cases proved fatal.

It is probable that some of the deaths registered as from diarrhoea and enteritis are really deaths from dysentery.



### DIGESTIVE DISEASES AND DIARRHŒA.

The following table shows the mortality from digestive diseases—including diarrhœa—in the City of Liverpool during the last 56 years :—

TABLE I.

		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 1871-1880 rate.
1871-1880 ...	...	14,747	10·0	2·8	100·0
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
1921 ...	...	1,120	9·5	1·37	48·9
1922 ...	...	673	5·6	0·82	29·3
1923 ...	...	763	6·7	0·92	32·8
1924 ...	...	703	6·2	0·84	30·0
1925 ...	...	1,089	9·1	1·29	46·1
1926 ...	...	1,474	12·7	1·73	52·2

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 so 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 56 years is shown in the next table.

TABLE II.

AVERAGE NUMBERS.						PER CENT.			
	Under 1 year	1-2 years	2-5 years	Over 5 years	Total	Under 1 year	1-2 years	2-5 years	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
1921-1925 ...	315.2	93.6	20.8	50.2	480.4	65.5	19.5	4.3	10.4
1926 ...	413	109	21	38	581	71.1	19.3	5.8	9.2

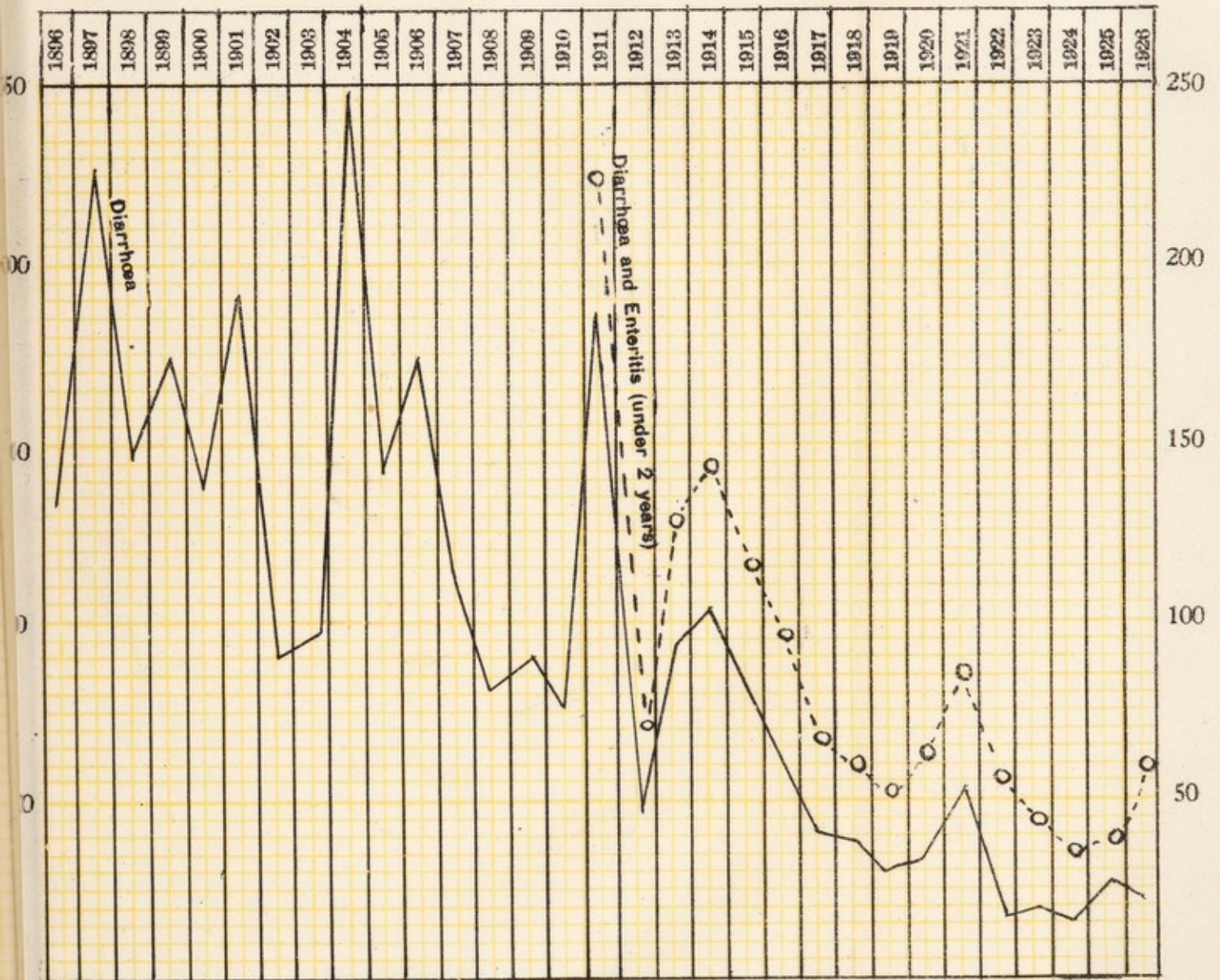
Down to the year 1915 there was a decline in the proportion of deaths from diarrhœal diseases in persons over five years of age, but otherwise there was very little variation in the ages at death. During the war period, however, owing to the fall in the birth-rate, the proportions varied somewhat. Owing to the rapid rise in the birth-rate in 1920 the proportions at different ages were quite abnormal. In 1921, however, the proportions of death at different ages returned to the normal pre-war distribution. In 1926 nearly three-quarters of the deaths were of infants during their first year of life.

Diarrhœa and enteritis took a heavy toll of infant life during 1926, but when comparison is made with earlier epidemic years during which the climatic conditions were favourable to the development of the disease it will be seen that the mortality has been very much reduced. In 1926, the climatic conditions were favourable to the spread of diarrhœa, and the mortality from diarrhœa and enteritis at all ages amounted to 581, of which number 522 were under two years of age, equal to a rate of 173 per 100,000 of the population. A noticeable feature of recent years has been that the height of the summer epidemic, which formerly occurred in August, about the 31st



# CITY OF LIVERPOOL

Diarrhoea Death Rates (all ages), per 100,000 Population, 1896-1926  
together with the combined rate from Diarrhoea  
and Enteritis (under 2 years), for 1911-1923.

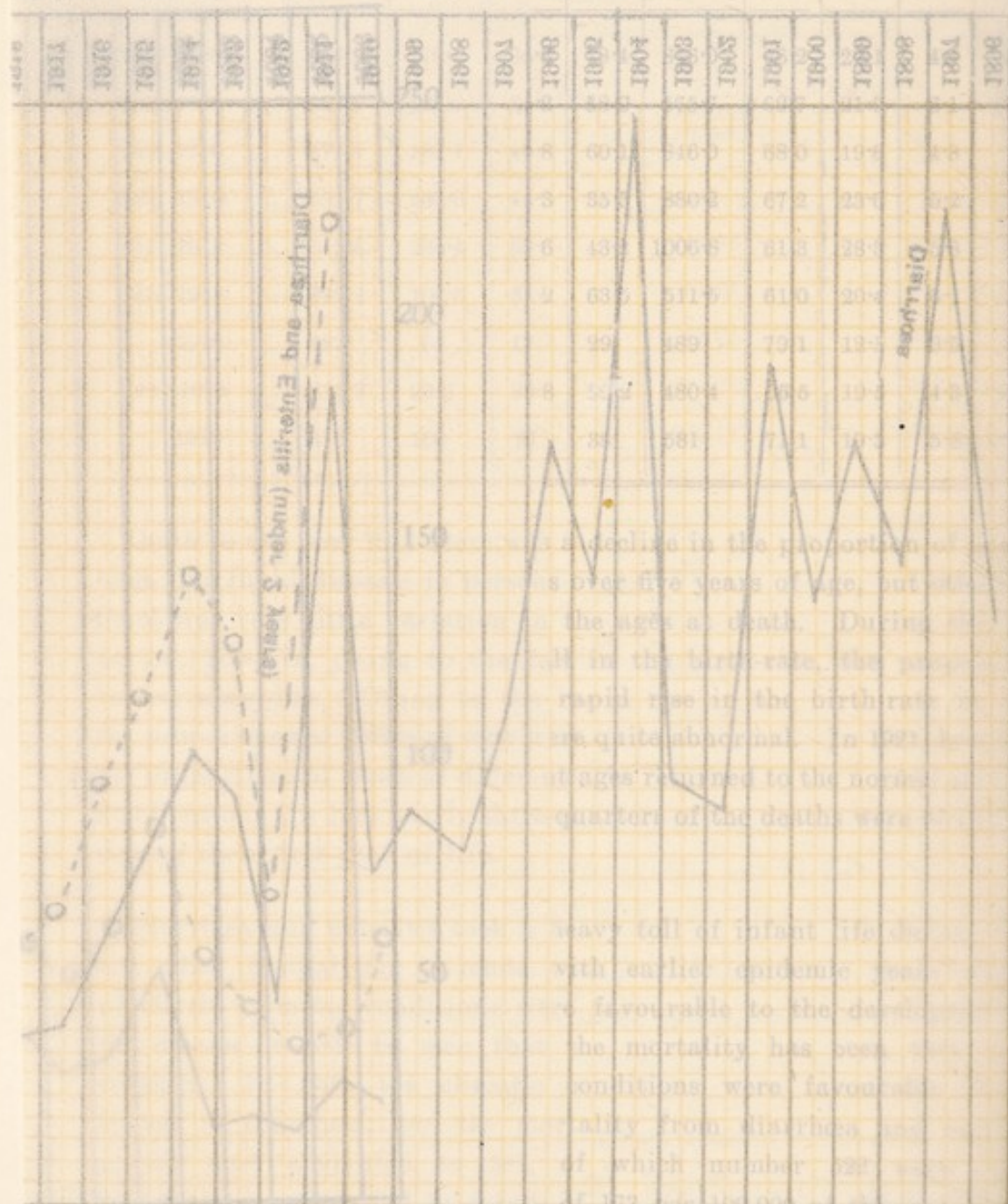




# CITY OF LIVERPOOL

54

Diarrhoea Death Rates (all ages), per 100,000 Population together with the combined rate from Diarrhoea and Enteritis (under 5 years), for 1881-1901



There has been a marked decline in the proportion of deaths due to diarrhoea and enteritis since 1895, but the rate has not fallen below the level of 1895. During the last year, the rate has risen to 100, but this is due to a rapid rise in the birth-rate in 1901, and the proportion of deaths due to diarrhoea and enteritis is not yet back to the normal level of 1895.

The mortality has been very low since 1895, and the conditions were favourable to the health of the population. The mortality has been very low since 1895, and the conditions were favourable to the health of the population.

It has been noted that the death-rate in Liverpool has been low since 1895, and this is due to the fact that the death-rate has been low since 1895.



week of the year, has occurred progressively later and later in the year. In 1922 the peak of the epidemic, if it may so be termed, was not reached until October, namely, in the 41st week, and in 1923 and 1924 in the 38th week; but in 1925 it reverted to the 35th week, and in 1926 to the 39th week. The very large diminution in the size of the epidemic in recent years and its concurrent retardation are well shown when comparison is made with the mortality in the year 1904. In that year the peak of the epidemic was reached in the 33rd week, no fewer than 259 deaths from diarrhoea alone being recorded in that week, as against 33, the greatest number in any week during 1926, i.e., almost exactly one-eighth of the number recorded 23 years ago.

The mortality rate per 1,000 of the births registered in the City during the last two years from diarrhoea and enteritis (under 2 years of age) was 13·3. The mortality in the several districts of the city is shown in the subjoined table:—

TABLE III.

			Registered Births 1925-26.	Deaths. 1926.	Death Rate per 1000 births registered during the current and preceding years.			
					1925.	1926.		
Exchange	...	...	5,516	162	...	31·1	...	29·4
Abercromby	...	...	2,288	29	...	14·5	...	12·7
Everton	...	...	6,878	92	...	8·8	...	13·4
Kirkdale	...	...	3,507	47	...	11·3	...	13·4
Edge Hill	...	...	4,117	41	...	6·8	...	9·9
Toxteth	...	...	5,706	56	...	9·5	...	9·9
Walton	...	...	2,925	41	...	3·8	...	14·0
West Derby	...	...	3,665	22	...	3·5	...	6·0
Wavertree	...	...	3,406	22	...	5·0	...	6·4
Sefton Park...	...	...	963	2	...	3·9	...	2·1
Fazakerley	...	...	219	2	...	4·3	...	9·1
Woolton	...	...	194	6	...	15·2	...	30·9
			39,384	522	...	10·3	...	13·3

NOTE.—All deaths occurring in public institutions have been transferred to the districts from which the patients came.

The corresponding rates for the whole city during the last five years were 14·6, 6·2, 8·6, 7·7 and 10·3 per 1,000 births registered in the preceding two years.

Of the 522 deaths under 2 years of age, the majority, namely, 306, took place in public institutions, as shown in the following table:—

TABLE IV.

DEATHS FROM DIARRHOEA AND ENTERITIS IN INSTITUTIONS DURING 1926.

Alder Hey Hospital	...	...	...	...	126
Brownlow Hill Institution	...	...	...	...	74
Royal Liverpool Children's Hospital	...	...	...	...	36
Walton Institution	...	...	...	...	24
Mill Road Institution	...	...	...	...	12
Toxteth Institution	...	...	...	...	11
David Lewis Northern Hospital	...	...	...	...	8
Fazakerley Hospital	...	...	...	...	2
Stanley Hospital	...	...	...	...	2
Royal Southern Hospital	...	...	...	...	6
Belmont Road Institution	...	...	...	...	4
Royal Infirmary	...	...	...	...	1
					<hr/> 306 <hr/>

## SPECIAL INVESTIGATION DURING 1926.

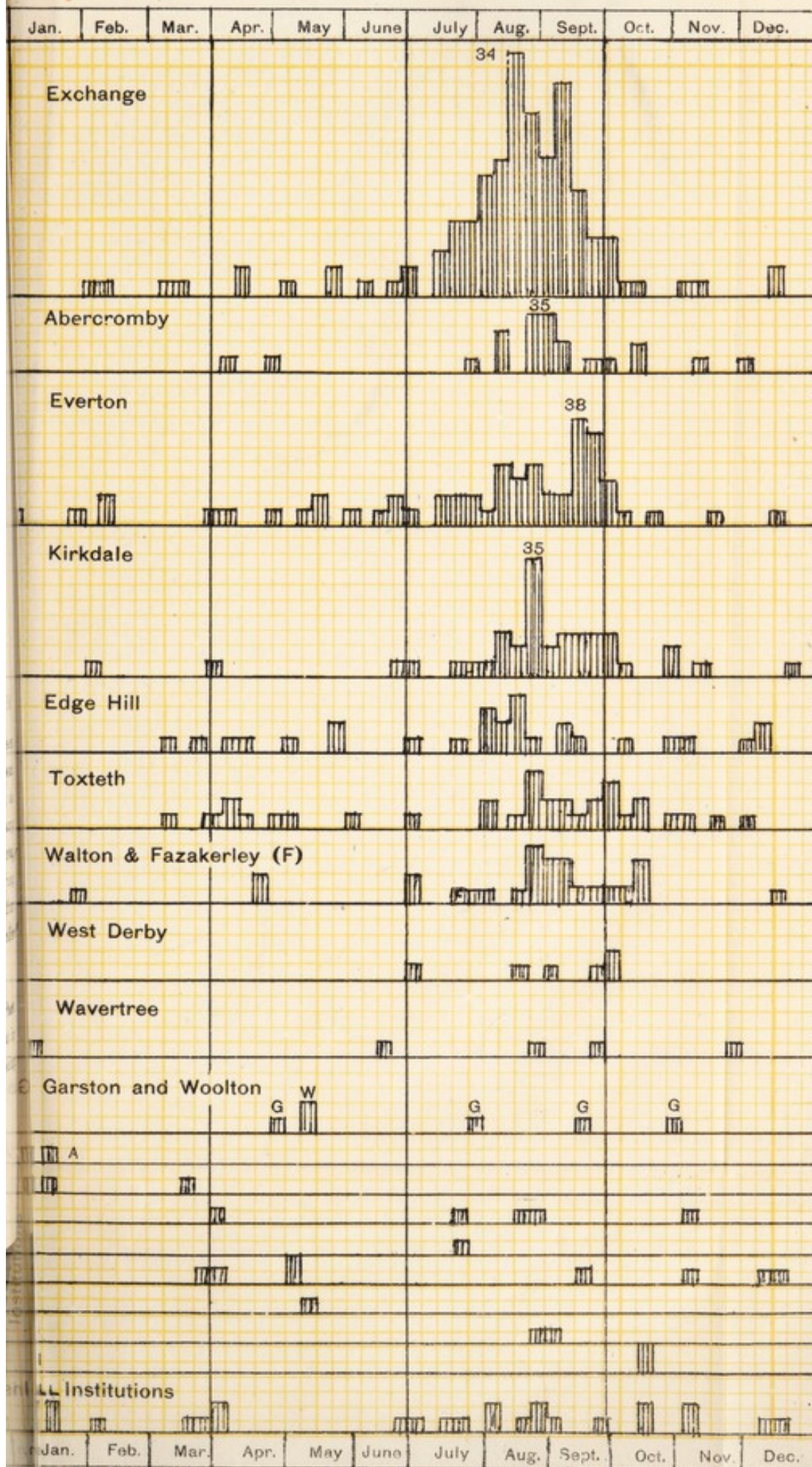
In earlier years the great majority of fatal cases of intestinal diseases of infancy were certified by the attending practitioners as deaths from diarrhoea, or diarrhoea and vomiting; many deaths were also certified as from convulsions. But during the early years of the twentieth century there was an increasing tendency to certify infantile deaths as from enteritis, gastro-enteritis, ileo-colitis, etc. These deaths when occurring in children under two years of age were grouped by the Registrar General from the year 1911 onwards with those from diarrhoea under the heading "diarrhoea and enteritis under two years of age."

There is some evidence that this group is a composite one; diarrhoea is a symptom rather than a disease, but there can be no doubt that in earlier years the great majority of deaths of infants recorded as being



# CITY OF LIVERPOOL.

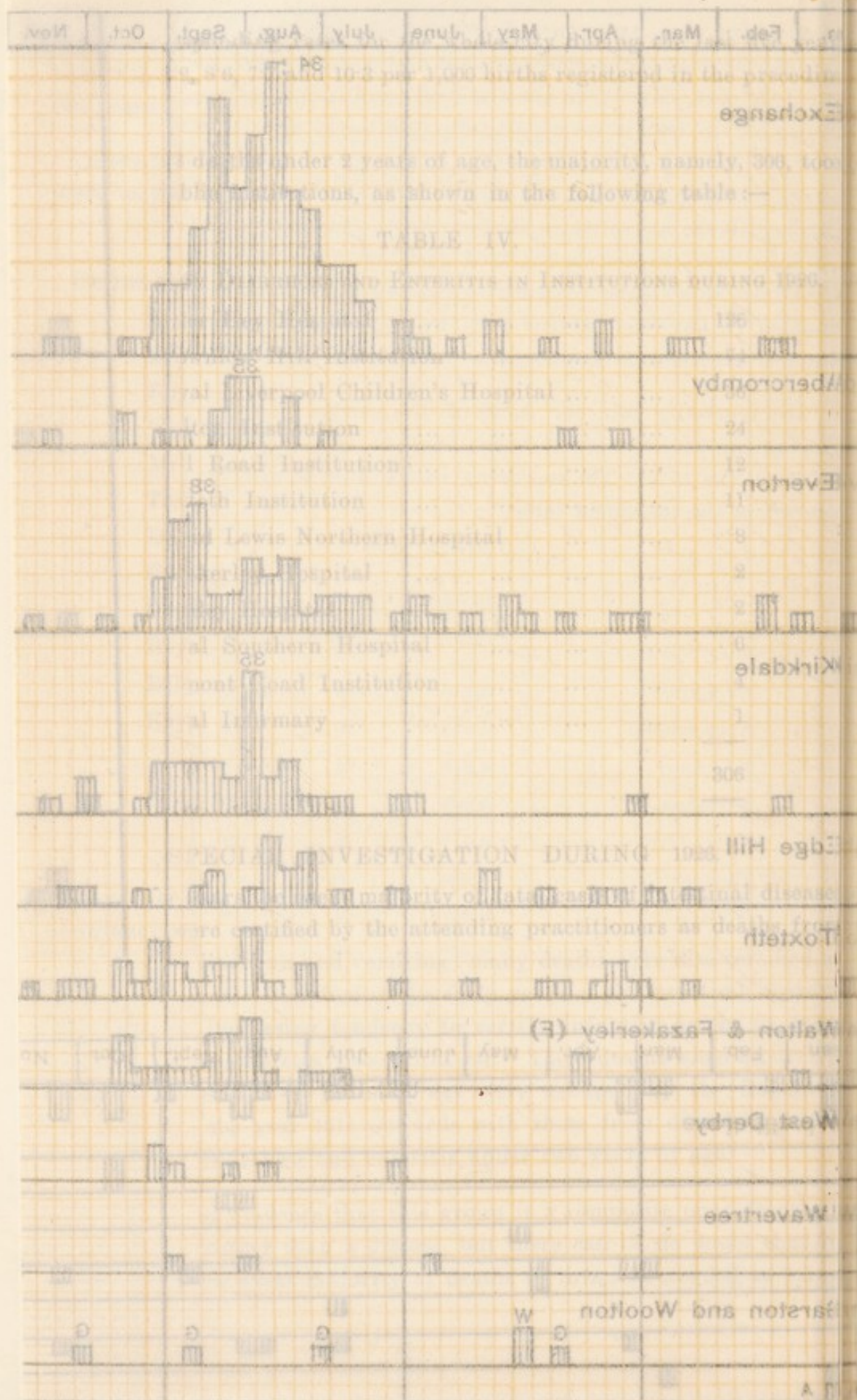
Fatal cases of Diarrhoea and Enteritis (under 2 years of age)  
arranged by Districts & Institutions and by Week of Onset.





Fatal cases of Diarrhoea and Enteritis (under 2 years of age) arranged by Districts & Institutions and by Week of Onset

85





from diarrhœa were deaths from an acute gastro-intestinal infection. This disease has, however, greatly declined, and it becomes more necessary to endeavour to separate, from the mass of deaths from this infective condition, that residuum of deaths due to other causes.

With this object, during 1926, a full report was made by a health visitor on all fatal cases of "diarrhœa and enteritis under two years of age," and these reports, 518 in number, have been examined and tabulated by Dr. Stallybrass; further enquiries were made in some instances. It is clear, from the reports, that some of these deaths from enteritis are not cases of "diarrhœa," as, in 26 instances, that symptom was not present. In fact, it is probable that, in a number of instances, deaths are attributed to "enteritis" which would in earlier years have been attributed to "convulsions"; this symptom may occur at the onset of any acute infection in childhood, e.g., pneumonia. It was not considered advisable, however, arbitrarily to separate these cases from the others, and the statistics refer to the whole 518 deaths.

In table 5 the deaths are shown distributed according to the place of residence at the time of onset of diarrhœa, etc., and the figures are also distributed according to the month and quarter of death. It will be noticed that 43 deaths (8·3 per cent.) occurred in the first quarter, 66 deaths (12·7 per cent.) in the second, 227 deaths (43·8 per cent.) in the third, and 182 (35·2 per cent.) in the fourth quarter.

In many cases the child died from an acute infection supervening upon a more or less prolonged illness; in such cases the onset of diarrhœa indicates, as a rule, the onset of the acute illness; in 44 cases this occurred whilst the child was an inmate of an institution, but it cannot be inferred that the death was necessarily due to an infection or that infection occurred there. These deaths are, however, placed under the heading "institution," as their inclusion in the district of residence would tend to obscure the results.

When distributed in the manner just described, no deaths occurred in the district of Sefton Park, and the numbers occurring in Wavertree, Garston and Woolton, and Fazakerley are small; they also show no such increase in the third and fourth quarters as is characteristic of the acute infective disease, and enquiry, in fact, showed that many of these deaths in the districts just mentioned were not of an acute infective nature.

TABLE V.  
FATAL CASES OF DIARRHOEA AND ENTERITIS (under 2 years of age).  
ARRANGED BY DISTRICTS OF RESIDENCE AT TIME OF ONSET.

	Exchange.	Abercromby.	Everton.	Kirkdale.	Edge Hill.	Toxteth.	Walton.	W. Derby.	Wavertree.	Sefton Park.	Garston and Woolton.	Fazakerley.	Institutions.
January ... ..	3	...	2	...	2	3	2	...	...	...	...	...	4
February... ..	2	...	4	...	...	1	...	...	2	...	...	...	4
March ... ..	3	1	1	1	3	1	1	1	...	...	...	...	2
1st Quarter...	8	1	7	1	5	5	3	1	2	...	...	...	10
April ... ..	3	...	2	4	4	3	2	...	2	...	1	...	1
May ... ..	3	3	3	1	3	5	2	...	1	...	2	...	3
June ... ..	5	...	4	...	1	2	1	1	1	...	1	...	2
2nd Quarter...	11	3	9	5	8	10	5	1	4	...	4	0	6
July ... ..	11	...	10	4	1	3	2	3	...	...	...	...	1
August ... ..	28	4	5	4	7	4	5	1	...	...	1	...	7
September ...	38	9	19	18	6	9	10	5	1	...	...	2	9
3rd Quarter...	77	13	34	26	14	16	17	9	1	...	1	2	17
October ... ..	37	6	17	17	7	13	7	3	1	...	1	...	7
November ...	8	3	2	3	5	2	1	1	1	...	...	...	2
December ...	8	2	5	3	5	5	3	2	1	...	2	...	2
4th Quarter...	53	11	24	23	17	20	11	6	3	...	3	...	11
YEAR ... ..	149	28	74	55	44	51	36	17	10	...	8	2	44
Rate per 1,000 births 1925-1926	27.0	12.2	10.8	15.7	10.5	8.9	12.3	4.6	4.7	...	5.3	9.1	...

EXPRESSED AS A PERCENTAGE OF THE TOTAL OCCURRING IN THE QUARTER.

1st Quarter ...	18.6	2.3	16.3	2.3	11.6	11.6	7.0	2.3	4.6	...	...	...	23
2nd „ ...	16.7	4.6	13.6	7.6	12.1	15.2	7.6	1.5	6.0	...	6.0	...	9
3rd „ ...	33.9	5.7	15.0	11.5	6.2	7.0	7.5	4.0	0.4	...	0.4	0.9	7
4th „ ...	29.2	6.0	13.2	12.6	9.4	11.0	6.0	3.3	1.6	...	1.6	...	6
YEAR ... ..	28.8	5.4	14.3	10.6	8.5	9.8	6.9	3.3	1.9	...	1.5	0.4	8

EXPRESSED AS A PERCENTAGE OF THE TOTAL OCCURRING IN THE DISTRICT.

1st Quarter ...	5.4	3.5	9.5	1.8	11.4	9.8	8.3	5.9	20.0	...	...	...	22
2nd „ ...	7.4	10.8	12.2	9.1	18.2	19.6	13.9	5.9	40.0	...	50.0	...	13
3rd „ ...	51.7	46.4	45.9	47.3	31.8	31.4	47.2	52.9	10.0	...	12.5	100.0	38
4th „ ...	35.5	39.3	32.4	42.8	38.6	39.2	30.6	35.3	30.0	...	37.5	...	25
YEAR ... ..	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	...	100.0	...	100





TABLE VII.

## DIARRHOEA AND ENTERITIS (under 2 years of age), 1921-1926.

DEATH-RATE PER 1000 BIRTHS REGISTERED DURING THE YEAR OF OBSERVATION AND THE PRECEDING YEAR. DEATHS IN INSTITUTIONS ARE ALL REFERRED TO THE DISTRICT OF RESIDENCE.

District.	1921	1922	1923	1924	1925	1926
Scotland ... ..	20.0	8.8	13.6	14.9	31.1	29.0
Exchange ... ..	37.1	12.4	17.1			
Abercromby ... ..	16.5	8.1	13.8	7.7	14.5	12.2
Everton ... ..	15.8	6.3	8.4	8.6	8.8	13.1
Kirkdale ... ..	9.8	4.5	8.0	5.1	11.3	13.1
Edge Hill ... ..	12.8	7.3	7.9	6.9	6.8	9.8
Toxteth ... ..	15.2	6.5	8.7	7.1	9.5	9.8
Walton ... ..	7.8	3.5	9.4	5.0	3.8	14.1
West Derby ... ..	7.5	4.2	3.5	6.4	3.5	6.1
Wavertree ... ..	3.3	2.5	7.6	4.7	5.0	6.1
Sefton Park ... ..	4.8	2.6	0.9	1.8	3.9	2.1
Garston ... ..	7.6	7.9	1.5	Included in Wavertree.		
Fazakerley ... ..	4.8	...	4.2	4.0	4.3	9.1
Woolton ... ..	6.2	3.3	2.6	...	15.2	30.1
WHOLE CITY ... ..	14.6	6.2	8.6	7.7	10.3	13.1
BIRTH RATE ... ..	26.8	26.1	24.9	24.6	23.3	23.1

This seasonal variation—as shown in the second and third portions of table 5—was greatest in Exchange (including Scotland), Abercromby, Everton, Kirkdale, and Walton, in which districts 342 (or 66 per cent.) of the deaths occurred. There was also a small outbreak, affecting a portion of the new housing area, in West Derby during September and October; this was probably an imported infection brought by newly-arrived tenants who had come from the central parts of the city. It was especially in Exchange that the marked seasonal variation occurred. A well marked increase occurred here in July, and during the third quarter of the year one-third of the deaths occurring in the city appertained to this district. A “spot-map” of the deaths during the months of June and July showed that it was especially in the area between Byrom Street and Soho Street, and the immediately adjacent portions of Everton, that associated deaths occurred. Later subsidiary centres appeared in other parts of the city. The diarrhoeal death rate has been consistently higher in Exchange than in any other part of the city; this is shown in Table VII.



## AGE OF CASES; PREDISPOSING CONDITIONS.

(See Table VI.)

Twenty-five of the deaths were in children under 1 month of age. In most of these cases under 1 month it is probable that conditions other than acute infective diarrhœa were present. The majority of the deaths (i.e., 58·7 per cent.) were at ages 3-11 months. The proportion at these ages increased most during the third quarter of the year, just half the total deaths at this age occurring during July, August and September; and of all deaths during the third quarter of the year, 62·6 per cent. were at ages 3 to 11 months. Twenty-six children presented no history of diarrhœa. Seven of these were under 1 month old. For example, one of these children, who died on the fourth day after birth, was apparently suffering from hæmorrhage of the new born; another, 3 days old, had convulsions from the time of birth, and was probably suffering from birth injuries. There is no seasonal increase during the third and fourth quarters of the year in this group of deaths.

In forty-eight cases diarrhœa or enteritis was certified as being secondary to some other disease. The primary cause of death given on the certificates was:—Marasmus, 37; Convulsions, 3; Impetigo, 2; Cleft-palate and hare-lip, 2; Congenital debility, 1; Spina bifida, 1; Prematurity, 1; Rachitic marasmus, 1.

In this group there was as well-marked a seasonal fluctuation in mortality as in those certified as primarily suffering from diarrhœa or enteritis. It includes a number of children who were admitted to hospital with various complaints and who developed diarrhœa, etc., after admission. But it mainly indicates the tendency for death from an attack of diarrhœa to occur in weakly and debilitated infants, and this is borne out by a large number of the enquiry sheets. For example, in addition to those cases just mentioned, where the primary cause of death was given as some cause other than diarrhœa or enteritis, enquiry showed that the following conditions had preceded, and in many cases led up to, death, which was attributed, on the death certificate, to diarrhœa or enteritis; in a considerable number of cases these conditions had led to the infant's entry into hospital a short time before its death:—Stated to have been *delicate from birth*, 26; *twins*, 14; *premature*, 7; *illegitimate*, 11 (mother mentally defective, 1); mother at work all day and infant improperly fed, 3; mother suffering from

tuberculosis, 4; mother with breast abscess, 2; marasmus, 5; constipated from birth, 2; also the following diseases: *bronchitis and broncho-pneumonia*, 21; measles, 4; whooping cough, 4; scarlet fever, 1; chicken-pox, 3; ophthalmia, 2; impetigo, 2; pemphigus, 1; abscess on head, 2; ulceration of mouth, 2; marasmus and hernia, 4; circumcision, 1; hydrocephalus, 1; cleft palate, 1; rickets, 2; syphilis and congenital heart disease, 1; in a number of cases two or more of these conditions had been present; e.g., a premature twin, the child of an unmarried mother who had to go out to work.

There was, then, evidence of preceding disease, constitutional weakness or parental neglect or ill-health in a further group of 126 infants; there was, however, a well-marked seasonal influence in this group; thus in successive quarters there were:—12 deaths (8·5 per cent.); 13 deaths (9·2 per cent.); 62 deaths (44·0 per cent.), and 54 deaths (38·3 per cent.); these percentages are almost identical with the proportions for the whole city as given in table 5. It must be assumed, then, that the immediate cause of the death of most of these 126 infants was an acute infective diarrhœa supervening upon a preceding state of ill-health or neglect.

In striking contrast to these deaths were many others in which the child was apparently quite healthy until the onset of diarrhœa and vomiting, to which the child rapidly succumbed.

#### METHOD OF FEEDING.

It was stated that the child was entirely breast-fed in 100 instances, and was partially or entirely artificially fed in 382 instances. Enquiry showed that in a considerable number of the breast-fed infants there was no history of diarrhœa, and in a number of others the child was less than a month old, in several instances, indeed, was only a few days old; in such cases do not fall within the category of acute infective diarrhœa. In other cases it is difficult to exclude the possibility of the child having received occasional feeds of other food.



It is noticeable that during the third quarter of the year 82·4 per cent. of the deaths were among artificially-fed infants, and in a further 4·4 per cent. there was no history of the method of feeding. That strict adherence to breast feeding does, in fact, effectually prevent infection with summer diarrhœa was shown by the history, repeatedly given, that the child was perfectly well until it was weaned, when illness rapidly supervened. Wherever possible children should not be weaned between July and October. In a number of instances, however, weaning was necessitated by the illness of the mother.

### MODE OF INFECTION.

Enquiry was also made as to the presence of flies in the house at the time of onset of illness and as to occurrence of other cases of diarrhœa in the household, etc. For a number of years, wherever an excessive prevalence of flies is reported, this is referred to the sanitary department for investigation. Excessive prevalence of flies coincides with outbreak of diarrhœa in epidemic form, as has been repeatedly shown in former reports of the Medical Officer. It was noticed in this investigation that excessive prevalence of flies was reported in Exchange district three weeks before it was reported in the rest of the city, and this corresponds to the earlier appearance of the disease in epidemic form in Exchange district and to the greater extent of the epidemic wave.

Flies, however, are not the only means of introduction of the disease into the household, and it was ascertained in a number of cases that the illness of older members of the family had preceded the fatal attack affecting the baby; the illness affecting the older relatives was often of a trivial character and liable to be overlooked.

The experience of previous years points strongly to the importance of flies as carriers of infection and that collections of stable manure form the most important breeding places for these insects. Regular visits of inspection are paid to stables and the occupiers informed as to the desirability of regular weekly removals of manure (see page 175). 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.

## CONCLUSIONS.

(1) The term "Diarrhœa and Enteritis under 2 years of age" is not the name of a disease, but includes a number of diverse conditions; the majority of deaths so classified, however, perhaps three-quarters of the total, appertain to the acute infective disease commonly termed "summer diarrhœa."

(2) This infective disease affects the central portion of the city to a greater degree than the outer areas, some of which, notably Sefton Park, escape almost entirely. In particular the insanitary area in Exchange district and the neighbouring part of Everton tends to be early and severely affected. The combination of excessive prevalence of flies, and of insanitary conditions in and around the house, is especially conducive to the spread of diarrhœa.

(3) In a considerable proportion of the deaths, i.e., at least 36 per cent. of the total, the child was definitely unhealthy, delicate or suffering from lack of parental care before the onset of diarrhœa. In particular bronchitis or broncho-pneumonia, prematurity, illegitimacy, and especially marasmus (or wasting) predisposed to a fatal issue if the child subsequently became infected with summer diarrhœa; but a variety of other diseases and conditions increase the susceptibility of infants to a fatal attack of diarrhœa.

(4) The majority of the deaths from diarrhœa and enteritis (i.e., 71 per cent. of the whole) occur under 1 year of age. About three-quarters of the whole number are artificially fed, and an even larger proportion of the definitely infective cases. Breast feeding is a very real protection against this disease, and no child should, if possible, be weaned between July and October.



DEATHS FROM DIARRHŒA AND ENTERITIS  
UNDER TWO YEARS.

DISTRICTS.	QUARTERS.								YEAR 1926.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total
Exchange .....	5	5	5	7	56	40	27	17	93	69	162
Abercromby .....	1	3	3	1	7	3	6	5	17	12	29
Everton .....	6	3	6	6	28	17	14	12	54	38	92
Kirkdale .....	1	...	2	3	15	14	6	6	24	23	47
Edge Hill .....	3	3	8	4	6	7	6	4	23	18	41
Toxteth .....	5	1	6	1	12	10	9	12	32	24	56
Walton .....	4	...	3	3	13	7	8	3	28	13	41
West Derby .....	...	2	2	3	3	3	5	4	10	12	22
Wavertree .....	1	2	5	1	3	2	3	5	12	10	22
Toxteth East .....	...	...	...	...	1	...	...	1	1	1	2
Fazakerley .....	...	...	...	...	...	2	...	...	...	2	2
Woolton .....	...	...	1	4	...	1	...	...	1	5	6
City .....	26	19	41	33	144	106	84	69	295	227	522

AGES AT DEATH.

Under 1 year	...	...	...	...	...	...	413
Under 2 years	...	...	...	...	...	...	109
TOTAL	...	...	...	...	...	...	<u>522</u>

DEATHS FROM DIARRHŒA AND ENTERITIS SEPARATELY.

	QUARTERS.				YEAR.
	1ST.	2ND.	3RD.	4TH.	
Diarrhœa .....	15	16	108	54	193
Enteritis .....	30	58	142	99	329

N.B.—Deaths in public institutions are transferred to the districts from which the patients came.

# NOTIFICATION OF INFECTIOUS DISEASE.

The following is a list of the diseases notifiable in the City of Liverpool during 1926 :—

Anthrax	Paratyphoid Fever
Anterior Poliomyelitis	Plague
Cerebro-spinal Fever	Pneumonia, Acute Influenzal
Cholera	Pneumonia, Acute Primary
Chickenpox	Polioencephalitis, Acute
Continued Fever	Poliomyelitis
Diphtheria	Puerperal Fever
Dysentery	( <sup>2</sup> ) Puerperal Pyrexia
Enteric Fever	Relapsing Fever
Erysipelas	Scarlet Fever or Scarlatina
Encephalitis Lethargica, Acute	Smallpox
( <sup>1</sup> ) German Measles	Tuberculosis (all forms)
( <sup>1</sup> ) Measles	Trench Fever
Malaria	Typhoid Fever
Membranous Croup	Typhus Fever.
Ophthalmia Neonatorum	

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

	1924.	1925.	1926.
January ... ..	701	933	872
February ... ..	731	881	758
March ... ..	770	952	813
April ... ..	652	767	858
May ... ..	763	879	744
June ... ..	630	740	648
July ... ..	570	604	614
August ... ..	514	529	510
September ... ..	654	742	636
October ... ..	895	900	779
November ... ..	1,058	795	873
December ... ..	913	1,007	906
	<u>8,851</u>	<u>9,729</u>	<u>9,011</u>

(<sup>1</sup>) Measles and German Measles ceased to be compulsorily notifiable on 31st October, 1920, but a system of voluntary notification has been continued as is also the case with Chickenpox.

(<sup>2</sup>) Notifiable as and from 1st October, 1926.



The diseases notified were as follows:—

	<u>1924.</u>	<u>1925.</u>	<u>1926.</u>
Smallpox ... ..	5	—	1
Scarlet Fever ... ..	3,505	3,357	2,252
Enteric Fever ... ..	59	56	46
Paratyphoid Fever ... ..	6	3	10
Relapsing Fever ... ..	—	—	—
Typhus Fever ... ..	1	—	—
Puerperal Fever ... ..	68	67	72
†Puerperal Pyrexia ... ..	—	—	49
Continued Fever ... ..	1	3	4
Diphtheria and Croup ... ..	1,078	1,468	1,558
Erysipelas... ..	398	538	595
Anthrax ... ..	9	5	12
Cerebro-spinal Fever ... ..	16	26	23
Acute Poliomyelitis ... ..	16	6	16
Measles and German Measles ... ..	4,292	8,680	6,437
Ophthalmia Neonatorum ... ..	690	703	649
Pneumonia and Influenzal Pneumonia	1,845	1,948	2,265
Malaria ... ..	48	56	78
Trench Fever ... ..	—	—	—
Dysentery... ..	6	15	11
Encephalitis Lethargica... ..	233	145	125
Polioencephalitis ... ..	1	—	4
Chickenpox ... ..	866	1,333	1,239
Plague ... ..	—	—	2
	<u>13,143</u>	<u>18,409</u>	<u>15,448</u>

† Notifiable as and from 1s October, 1926.

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 1926 :—

	January	February	March	April	May	June	July	August	September	October	November	December	TOTALS	Removed to hospital
Smallpox.	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague.	...	...	...	...	...	...	...	...	2	...	...	...	2	...
Enteric Fever.	...	1	9	2	2	3	6	3	4	4	6	2	42	21
Scarlet Fever.	223	221	213	176	198	112	191	140	187	256	162	165	2244	1939
Measles and German Measles.	308	744	1334	1369	1544	1456	632	184	155	231	179	558	8694	653
Diphtheria and Croup.	160	148	92	114	118	89	118	125	111	146	100	198	1519	1419
Puerperal Fever.	5	6	3	2	6	5	4	6	5	9	5	8	64	69
Puerperal Pyrexia	...	...	...	...	...	...	...	...	...	1	19	20	40	30
Erysipelas.	50	38	44	26	52	39	41	31	41	64	67	74	567	269
Cerebro-spinal Fever.	...	2	2	3	...	...	1	2	1	...	2	3	16	10
Poliomyelitis and Polioencephalitis	...	...	1	1	3	1	3	1	2	2	1	4	19	11
Ophthalmia Neonatorum.	49	48	45	45	64	50	64	47	47	87	51	52	649	41
Pneumonia & Influenzal Pneumonia.	253	167	155	312	226	116	82	68	93	192	297	239	2200	777
Malaria.	6	7	3	8	4	5	4	5	5	5	...	4	56	31
Dysentery.	1	1	...	1	1	...	...	...	1	2	1	...	8	...
Encephalitis Lethargica.	10	18	11	7	13	1	15	5	1	14	6	13	114	79
Whooping Cough.	275	393	284	179	258	122	58	83	66	88	83	82	1971	140
Anthrax.	...	1	...	...	...	...	...	2	1	...	...	...	4	...
Chickenpox	212	218	283	240	264	399	205	54	133	310	300	511	3129	223
Monthly Totals ...	1552	2013	2479	2485	2753	2398	1424	756	855	1411	1279	1933	21338	5727

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.



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.	1921	1922	1923	1924	1925	1926
Smallpox .....	—	2	1	1	—	—
Plague .....	—	—	—	—	—	2
Typhus Fever .....	1	—	—	—	—	—
Enteric Fever .....	30	31	16	49	35	42
Scarlet Fever .....	3,062	2,419	2,307	3,790	3,561	2,244
Measles and German Measles	9,143	3,570	11,089	5,709	11,202	8,694
Diphtheria .....	1,182	953	993	1,105	1,504	1,519
Puerperal Fever.....	60	60	43	65	56	64
Erysipelas .....	471	522	395	384	525	567
Cerebro-spinal Fever .....	26	18	8	13	24	16
Poliomyelitis and Polioen- cephalitis	6	11	39	14	4	19
Ophthalmia Neonatorum ...	660	669	707	690	703	649
Anthrax .....	—	4	4	6	5	4
Encephalitis Lethargica .....	27	5	111	189	108	114
Whooping Cough .....	3,019	2,025	2,261	2,321	2,274	1,971
Malaria .....	90	43	36	48	52	56
Dysentery .....	12	2	8	7	8	8

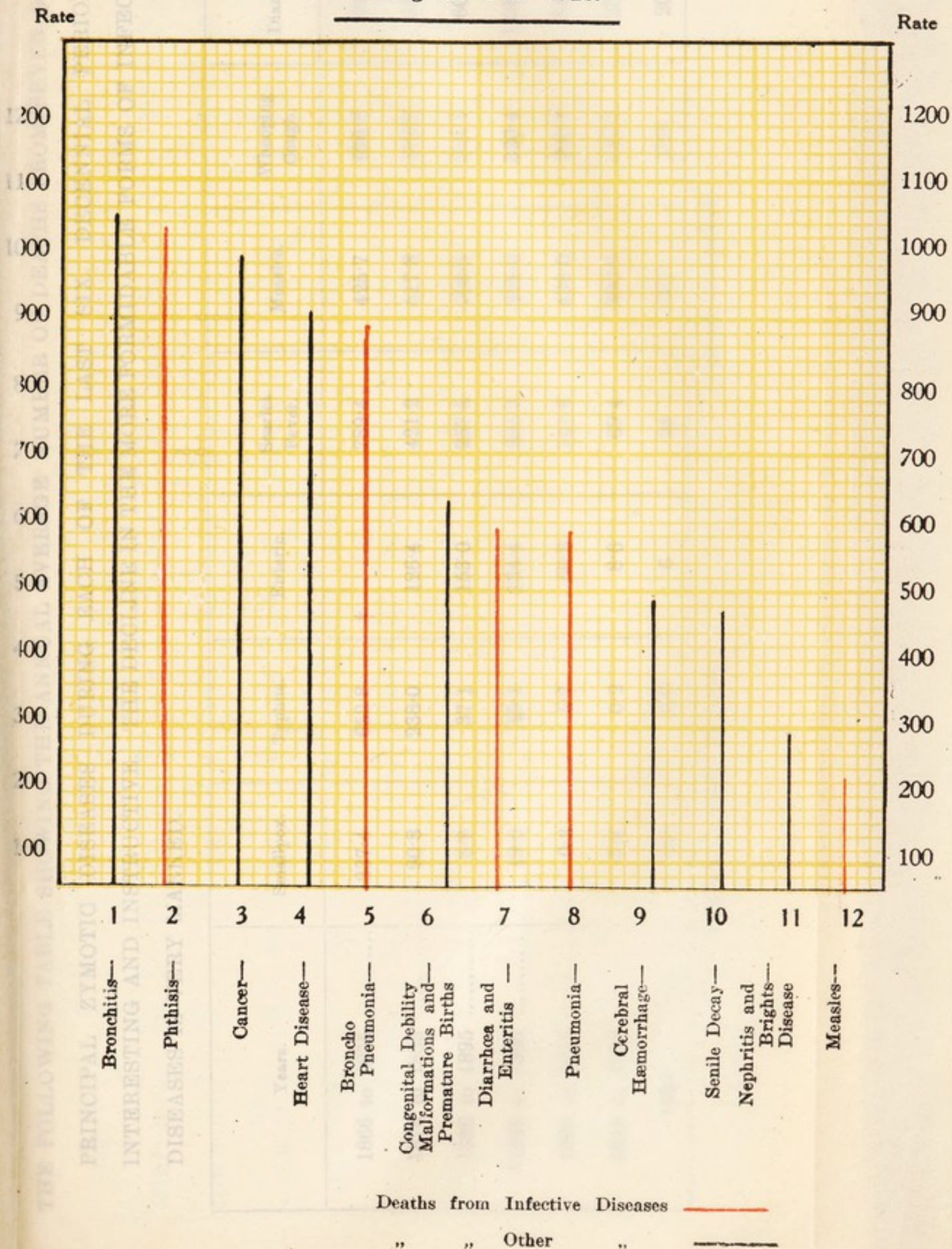
Table shewing the deaths from Infectious Disease occurring during the last six years:—

DISEASE.	1921	1922	1923	1924	1925	1926
Smallpox .....	—	—	—	—	—	—
Plague .....	—	—	—	—	—	1
Typhus Fever.....	—	—	—	—	—	—
Enteric Fever .....	8	6	6	7	5	6
Scarlet Fever .....	45	39	43	63	93	24
Measles and German Measles	328	171	356	148	406	221
Diphtheria .....	97	91	87	71	106	112
Influenza.....	106	333	114	191	178	141
Puerperal Fever.....	34	33	16	22	21	28
Erysipelas .....	18	26	27	18	24	30
Cerebro-spinal Fever .....	19	14	6	8	15	12
Poliomyelitis and Polioen- cephalitis	4	4	6	4	1	5
Anthrax .....	—	—	2	—	2	2
Encephalitis Lethargica .....	5	3	36	22	44	29
Whooping Cough .....	210	182	156	169	227	188
Malaria... ..	3	6	—	5	3	4
Dysentery .....	3	7	5	—	4	5
Chickenpox.....	6	1	3	6	4	5



# CITY OF LIVERPOOL.

Comparative view of Twelve of the principal causes of Death  
during the Year 1926.





Comparative view of Twelve of the principal causes of Death during the Year 1926.

Table showing the deaths from Infectious Disease occurring at six years:-

Disease	1921	1922	1923	1924	1925	1926
Scarlet Fever	—	—	—	—	—	—
Epidemic Typhus	—	—	—	—	—	—
Measles and German Measles	213	171	355	113	406	—
Scarlet Fever	17	10	27	73	106	—
Epidemic Typhus	100	223	114	191	175	—
Scarlet Fever	14	13	16	22	21	—
Epidemic Typhus	8	25	27	18	24	—
Scarlet Fever	10	14	6	6	11	—
Epidemic Typhus	12	1	5	4	1	—
Scarlet Fever	1	—	—	—	2	—
Epidemic Typhus	6	6	35	22	24	—
Scarlet Fever	160	182	154	163	227	—
Epidemic Typhus	2	6	—	5	3	—
Scarlet Fever	3	7	5	—	1	—
Epidemic Typhus	6	1	3	5	4	—

Deaths from Infective Diseases

Other " "



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

Years.	Smallpox.	Typhus.	Enteric.	Scarlet Fever.	Measles.	Whooping Cough.	Diarrhœa.
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 .....	0.3	5.7	50.3	141.6	438.0	296.7	848.0
1916 to 1925 .....	0.4	0.2	8.6	69.4	300.6	195.6	254.4
1926 .....	0.0	0.0	6	24	221	188	207

\* Including extended City area.

† Records not available.

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

YEARS.	SMALLPOX.		TYPHUS.		ENTERIC.		SCARLET FEVER.		MEASLES.		WHOPPING 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	.3	—	5.5	.2	49.0	1.3	50.9	90.7	23.9	414.1	9.2	287.5	30.8	817.2
1916 to 1925	.4	—	.2	—	8.5	.1	28.4	41.0	13.5	287.1	6.5	189.1	11.8	242.6
1926	—	—	—	—	4	2	10	14	133	88	87	101	106	101

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

† During the six years, 1880-1885.

\*\* Including extended City area.



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 seven decades, 1856 to 1925 and the year 1926.

DISEASE.		1866 to 1875.	1876 to 1885.	1886 to 1895.	1896† to 1905.	1906‡ to 1915.	1916 to 1925.	1926.
	Average Population	493,405.	538,651.	536,974.	691,351.	749,267.	814,014.	849,593.
Scarlet Fever	Total Deaths ...	7,894	4,212	2,575	2,013	1,416	694	24
	Rate per 100,000 per annum.	159.9	78.1	47.9	29.1	19.0	8.5	2.82
Typhus Fever	Total Deaths ...	6,528	2,380	371	251	57	2	0
	Rate per 100,000 per annum.	132.2	44.1	6.9	3.6	0.8	0.2	0.0
Enteric Fever	Total Deaths ...	*	1,264	1,530	1,344	503	86	6
	Rate per 100,000 per annum.	—	21.5	28.4	19.3	6.7	1.5	0.7
Measles	Total Deaths ...	4,257	5,178	3,995	3,290	4,380	3,006	221
	Rate per 100,000 per annum.	86.2	96.1	74.3	47.5	58.6	36.9	26.0
Whooping Cough	Total Deaths ...	4,968	4,723	3,224	3,304	2,967	1956	188
	Rate per 100,000 per annum.	100.6	87.6	60.0	47.7	39.7	24.0	22.2
Smallpox	Total Deaths ...	2,374	908	88	195	3	4	0
	Rate per 100,000 per annum.	48.1	16.8	1.6	2.8	0.4	0.5	0.0
Phthisis	Total Deaths ...	16,476	13,754	11,436	12,632	12,010	11,489	1,033
	Rate per 100,000 per annum.	333.9	255.3	212.9	182.7	160.7	141.1	12.2
Diphtheria	Total Deaths ...	2,129	2,434	1,655	1,955	1,239	1,366	112
	Rate per 100,000 per annum.	42.4	45.7	30.8	28.2	16.5	16.9	13.2

† City Boundaries extended in 1895, 1902, 1905.

‡ " " " 1913.

\* Records not available.

DIABETES.

The following table shows the incidence of fatal cases of Diabetes in Liverpool since 1890:—

	Actual Numbers.			Average.			Rate per 100,000	Ratio of Males to Females.
	Males.	Females.	Total.	Males.	Females.	Total.		
1890-1894	55	45	100	11·0	9·0	20·0	3·8	1·22
1895-1899	99	76	175	19·8	15·2	35·0	5·3	1·30
1900-1904	132	100	232	26·4	20·0	46·4	6·5	1·32
1905-1909	153	124	277	30·6	24·8	55·4	8·4	1·23
1910-1914	162	153	315	32·4	30·6	63·0	8·4	1·06
1915-1919	153	137	290	30·6	27·4	58·0	7·4	1·12
1920-1925	184	242	426	36·8	48·4	85·2	8·6	0·75
1926	44	46	90	44·0	46·0	90·0	10·5	0·95

The death-rate from diabetes rose steadily up till 1910-14. It is probable that this rise was largely due to improved diagnosis. During the war the number of deaths showed a distinct fall, especially in 1917 and 1918; this was a real fall and not merely due to the absence of males on military service as, on the average of five years, females were equally affected with males. Since the war the figures have again risen, and are now distinctly above the average for the decade 1910-19. The disparity, in the incidence, between the two sexes, previously in favour of the females, has since 1904 tended to disappear. In 1890-1894, 55 per cent. of the deaths were of males; but in 1920-24 the position was reversed and only 42·9 per cent. were of males. It is not improbable that the greater attention that has recently been paid to this disease has led to its more frequent recognition as a factor in mortality.



### DEATHS FROM CANCER.

During 1926 there were 993 deaths attributed to cancer, equivalent to a rate of 1.17 per thousand. In 1871-1880 the rate of mortality was 0.4 per thousand, an increase of 195 per cent. having occurred. The tables on pages 8 and 9 give the figures for the intervening years. Comparing the anatomical distribution in 1921 and 1926 it will be observed that there is a tendency for deaths from cancer of the breast and also cancer of the stomach, liver, intestines, etc., to increase, whilst cancer of the mouth (buccal cavity) remain stationary. The most marked increase is, however, under the heading "Other or unspecified Organs," deaths so classified having increased from 151 to 238.

Since 1896 the increase in the number of deaths of males is 145 per cent. and of females 72 per cent., or an actual increase of 291 male and 207 female deaths per annum, the increase of population during this period was 191,543, or 29 per cent.

The increased mortality from cancer was, therefore, (a) mainly among males; (b) most marked in the later years of life. There is evidence from other sources to show that the increase is especially in the case of cancer of the stomach and other internal organs where the disease is most difficult to diagnose. A great part of the increase is probably not real but statistical, and due to improved diagnosis. The term, old age, for example, is less frequently used as a cause of death than in former years.

## CANCER.

DEATHS FROM CANCER, AND THE PART OF THE BODY AFFECTED, DURING THE YEARS 1921 TO 1926.

Part of the Body affected.	1921.			1922.			1923.			1924.			1925.			1926.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Buccal Cavity .....	79	7	86	87	8	95	89	7	96	81	8	89	73	14	87	80	9	89
Stomach, Liver, etc .....	123	122	245	132	113	245	114	137	251	127	95	222	118	130	248	140	125	265
Intestines, etc. ....	78	87	165	68	70	138	94	66	160	75	84	159	108	87	195	97	101	198
Breast .....	1	72	73	—	69	69	—	70	70	—	83	83	1	91	92	1	86	87
Female Genital Organs ...	—	107	107	—	102	102	—	116	116	—	120	120	—	91	91	—	100	100
Skin.....	12	3	15	4	5	9	11	5	16	11	8	19	7	3	10	10	6	16
Other or Unspecified Organs	136	63	199	115	75	190	123	89	212	165	84	249	190	85	275	166	72	238
Totals.....	429	461	890	406	442	848	431	490	921	459	482	941	497	501	998	494	499	993



### DEATHS FROM EXCESSIVE DRINKING, &c.

It is still gratifying to note that the deaths due to or accelerated by drink continue to decrease year by year. During the year 1926 they numbered 5, which is the lowest figure ever recorded in the city from this cause.

The number of deaths of infants under one year of age from suffocation was 10, which is the lowest figure recorded with the exception of that for 1923.

Improved habits and conditions, wider educational influences and other agencies, including those associated with the welfare of motherhood and infancy have all played their part in promoting a more temperate use of alcoholic drinks with results which are eminently satisfactory.

Housing operations so far as they have gone have unquestionably contributed towards improving the general conditions of life and social habits of the people formerly housed in insanitary surroundings in slum areas.

The improved conditions of the children is especially noticeable; the reports in connection with medical inspection of school children in the poorer localities show welcome improvement, the details in reference to this subject being given in the Annual Report to the Education Committee.

The following tables give the actual figures of the deaths from excessive drinking, and the deaths of infants under one year of age from suffocation since 1914. The appended chart illustrates the fall in the numbers of deaths from excessive drinking since the year 1903.

YEAR.	MALES.	FEMALES.	TOTAL.
1914 } to 1918 }	203	116	319
1919	19	—	19
1920	7	7	14
1921	21	3	24
1922	10	2	12
1923	9	4	13
1924	7	2	9
1925	2	4	6
1926	1	4	5

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

YEAR.							DEATHS.
1914	}						
to							
1918		...	...	...	...	...	211
1919	...	...	...	...	...	...	25
1920	...	...	...	...	...	...	23
1921	...	...	...	...	...	...	12
1922	...	...	...	...	...	...	18
1923	...	...	...	...	...	...	7
1924	...	...	...	...	...	...	17
1925	...	...	...	...	...	...	16
1926	...	...	...	...	...	...	10

#### DEATHS FROM GAS POISONING.

Deaths from this cause fall under two headings, namely, from accidental poisoning 5, and suicides 25, a total of 30 deaths occurring in the year.

#### **BLIND PERSONS ACT, 1920.**

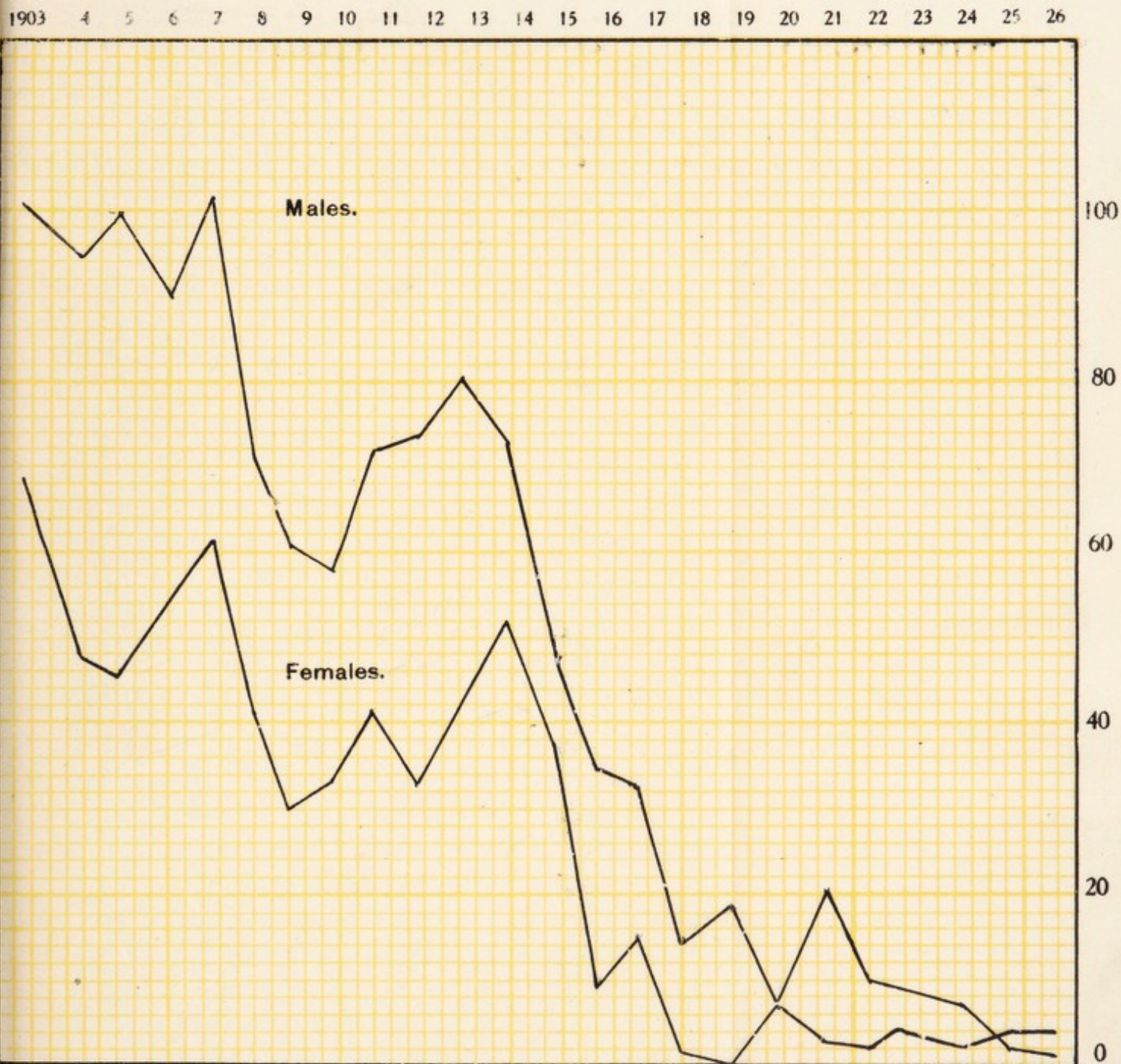
Under the Scheme of the City Council now in operation, which has been approved of by the Ministry of Health, for the administration of the Blind Persons Act, 1920, in the city of Liverpool the sum of £5,000 was granted during the year 1926 by the Committee appointed under the Blind Persons Act, 1920, to the Liverpool Workshops for the Blind and the Home Teaching Society and £287 10s. 0d. to the National Library for the Blind, the latter amount being calculated on an estimation of the number of blind persons partaking of the benefits of the library during the year.



# CITY OF LIVERPOOL.

Deaths due to, or accelerated by, excessive drinking  
during the 24 years, 1903 to 1926.

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

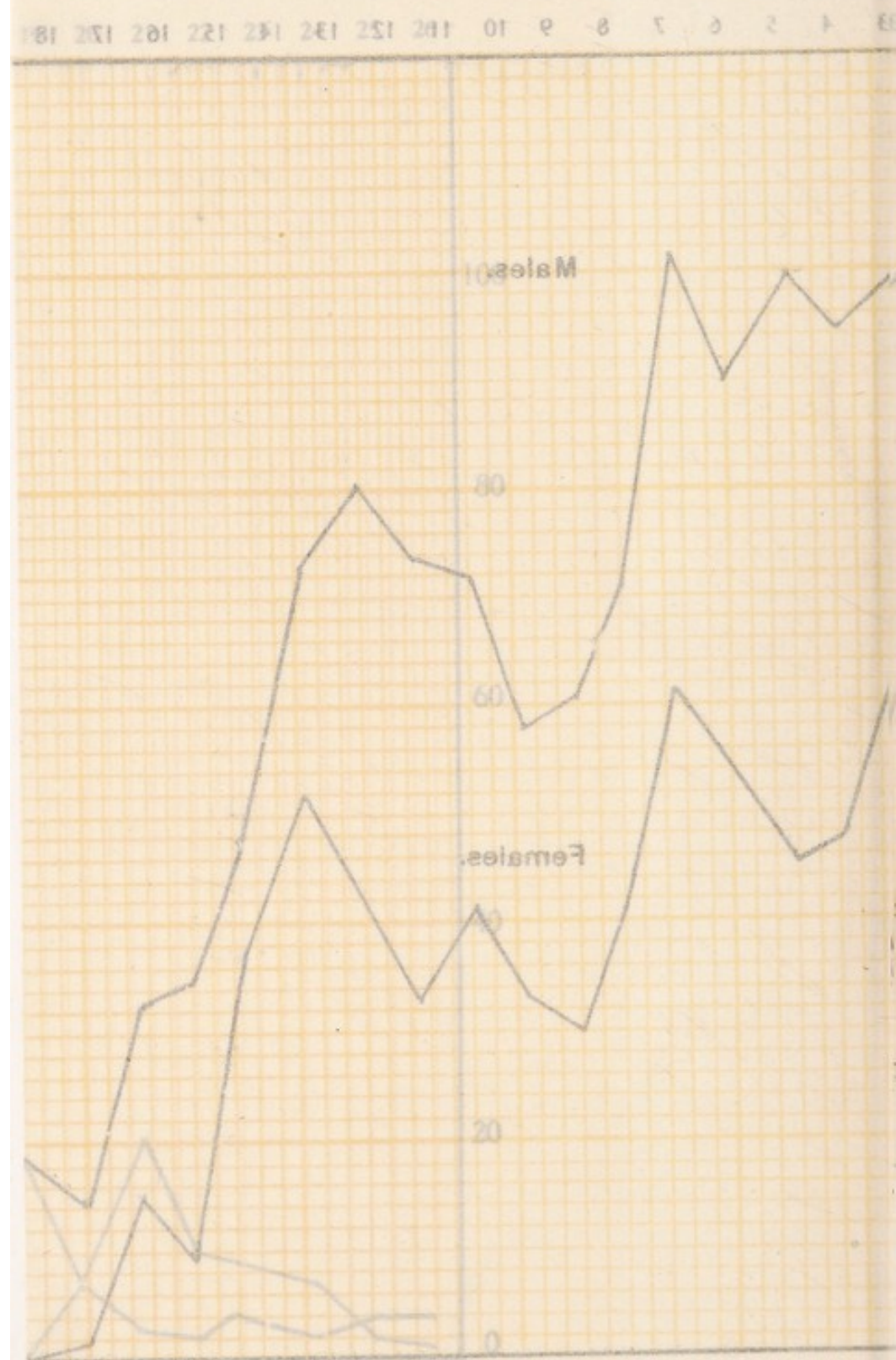




# CITY OF LIVERPOOL

Deaths due to, or accelerated by, excess  
during the 24 years, 1803 to 1827

Marked reduction in number of deaths coincident  
of restricted sale of Alcoholic Liquor





## MATERNITY and CHILD WELFARE.

---

The infant mortality rate for 1926 is 104 per 1,000 births. A glance at the chart facing page 80 will show how the rate, in spite of fluctuations in individual years, has steadily declined during the past twenty-five years. At the beginning of this period the figure was nearly 200 deaths per 1,000 births.

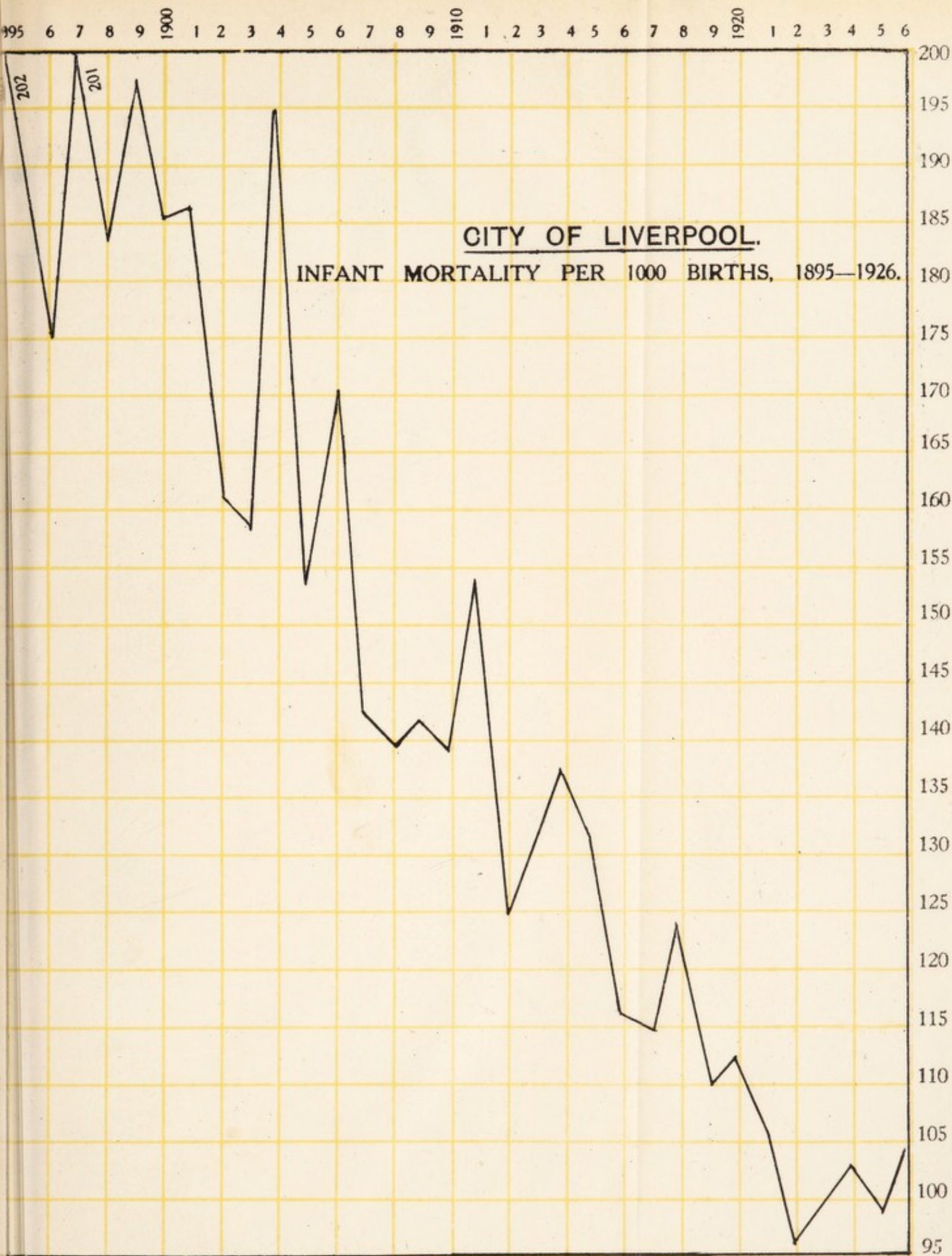
It is very gratifying to record this decline, and moreover, it may be noted that the numbers of deaths from all the usual forms of infantile disease, such as Broncho-pneumonia, Convulsions, Prematurity, etc., have been reduced, but the most markedly affected cause is the one which, in former years, frequently proved the most fatal, namely, epidemic diarrhoea. The number of deaths under one year of age from this cause in the year 1926 was 438, as against an average of 1,000, or 1,100 twenty-five years ago. No doubt this result is due to a variety of causes, but one which has most materially hastened the decline is the initiation and carrying-on by the Health Committee of schemes for the promotion of the welfare of motherhood and infancy, including the work of the health visitors, the day nurseries, infant welfare clinics and milk depôts. It is unfortunate that a corresponding reduction cannot be recorded in the case of the mothers. No doubt the problems surrounding maternity are more difficult to solve than those relating to the lives of infants, but closer attention is being paid to the dangers to which the mothers are subject and which at the present time are not far removed from those of twenty-five years ago. A highly important step, however, has been made in providing maternity homes, and ante-natal and post-natal clinics, as it has been demonstrated that a large proportion of the accidents which occur during pregnancy and child-birth can be successfully forestalled and prevented if the patient is under medical supervision previous to her confinement. Eclampsia, formerly a frequent and fatal complication, is now rarely seen.

### INFANT MORTALITY.

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 thirty years :—

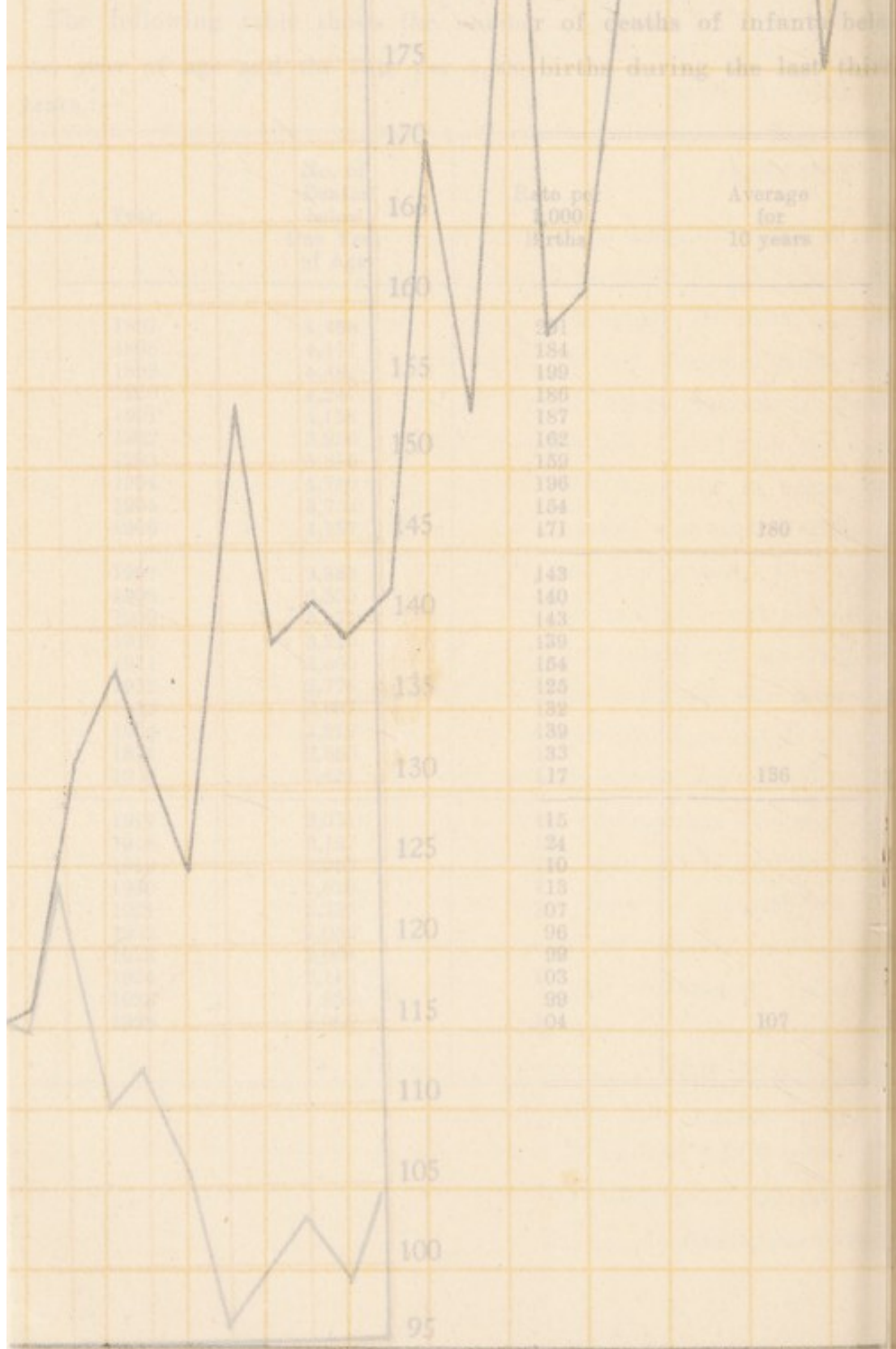
Year.	No. of Deaths below One Year of Age.	Rate per 1,000 Births.	Average for 10 years
1897	4,488	201	180
1898	4,111	184	
1899	4,481	199	
1900	4,247	186	
1901	4,138	187	
1902	3,936	162	
1903	3,815	159	
1904	4,780	196	
1905	3,752	154	
1906	4,137	171	
1907	3,383	143	136
1908	3,355	140	
1909	3,377	143	
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	107
1918	2,137	124	
1919	2,055	110	
1920	2,826	113	
1921	2,339	107	
1922	2,052	96	
1923	2,058	99	
1924	2,113	103	
1925	1,935	99	
1926	2,066	104	





# CITY OF PEORIA

## INFANT MORTALITY PER 1,000 BIRTHS



Number of deaths of infants below the age of one year during the last thirty days of the year.

Rate per 1,000 Births

Average for 10 years

- 191
- 184
- 199
- 180
- 187
- 162
- 159
- 196
- 154
- 171
- 143
- 140
- 143
- 139
- 154
- 125
- 132
- 139
- 133
- 17
- 15
- 24
- 10
- 13
- 07
- 96
- 99
- 03
- 99
- 04

180

156

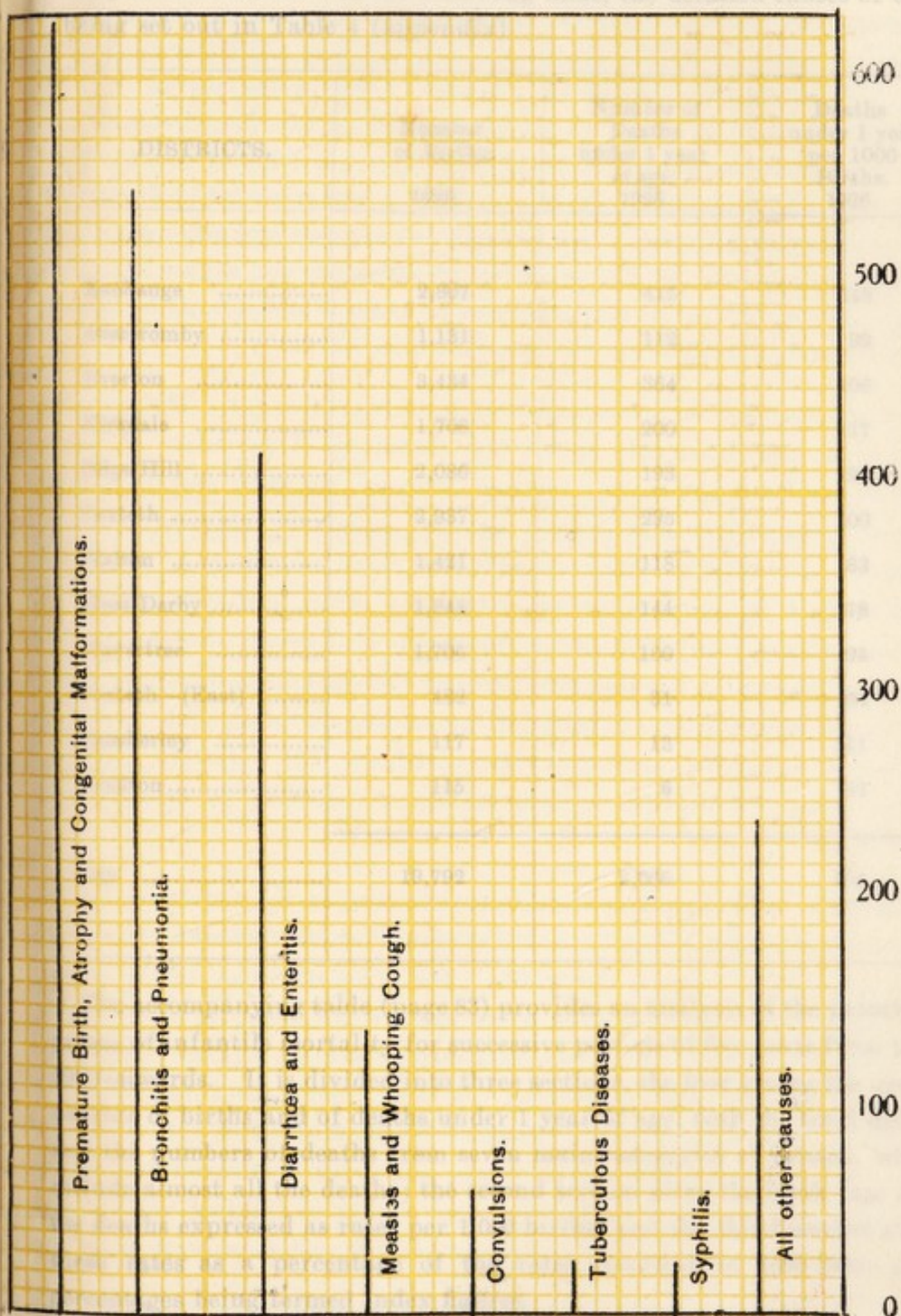
107

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# CITY OF LIVERPOOL.

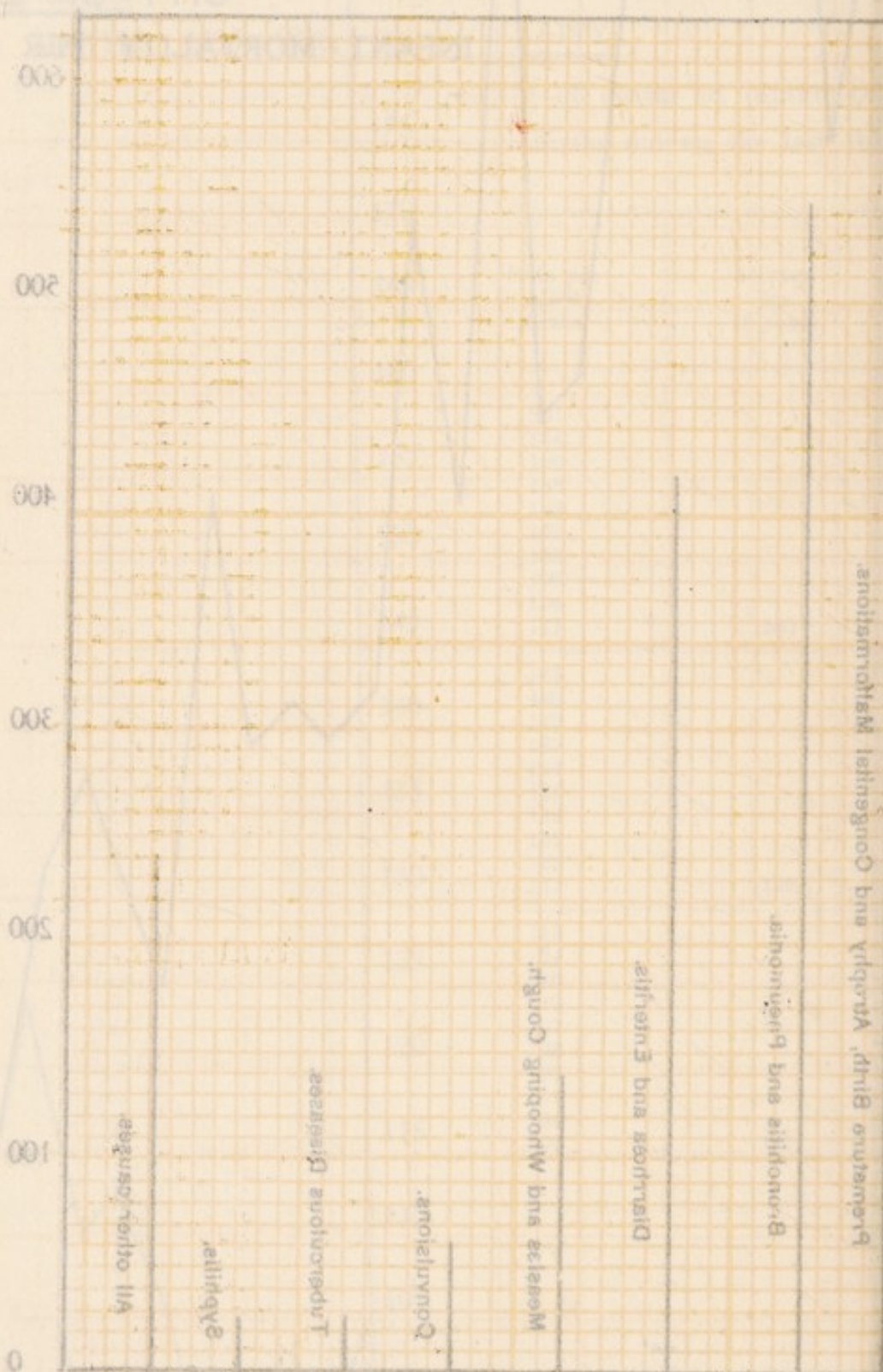
Chart showing the principal Causes of Deaths of Infants,  
Under One Year of Age, during 1926.





# CITY OF LIVERPOOL

Showing the principal Causes of Deaths of Infants Under One Year of Age, during 1928.





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 1926 is shown in the following table, the detailed causes of death being set out in Table 4 (appendix).

DISTRICTS.	Number of Births. 1926.	Number of Deaths under 1 year of age. 1926.	Deaths under 1 year per 1000 Births. 1926.
Exchange .....	2,807	417	148
Abercromby .....	1,131	112	99
Everton .....	3,434	364	106
Kirkdale .....	1,708	200	117
Edge Hill .....	2,086	193	92
Toxteth .....	2,937	295	100
Walton .....	1,421	118	83
West Derby .....	1,848	144	78
Wavertree .....	1,706	160	94
Toxteth—(East) .....	482	31	64
Fazakerley .....	117	13	111
Woolton .....	115	6	52
City .....	19,792	2,066	104

The accompanying table (page 83) provides an analysis of the principal causes of infantile mortality for successive periods of five years from 1896-1900 onwards. It is divided into three sections, the first giving the *actual number* of births and of deaths under 1 year of age, both the total deaths and the numbers of deaths from seven main categories of disease, which include almost all the deaths; the second section gives the birth rate and the deaths expressed as rates per 1,000 births, and the third section gives these rates as a percentage of the rates recorded in 1896-1900, such percentages being termed index figures.

Examination of this table shows that whilst the annual number of births has remained approximately stationary, fluctuating from 22,340 to 19,792 per annum, the number of infantile deaths has fallen from 4,232 to 2,066, and the infantile death rate has accordingly fallen from 189 to 104 per 1,000 births; in other words, this rate has fallen to 55 per cent. of the figure recorded in 1896-1900. This great saving of life during the past 30 years coincides with the great improvements in housing and sanitation in Liverpool; and more particularly this fall has occurred simultaneously with the increasing attention which has been directed to infant welfare by the Health Department and other agencies, by the improvement in the provision of assistance for women in child birth and the advice and help extended to mothers and infants by health visitors, infant welfare clinics, hospitals and others.

Investigation of the actual causes of death bears this out. The greatest reduction has occurred under the headings Tubercular Diseases (reduction from 100 to 21), Nervous Diseases (to 22·2) and Digestive Diseases (to 38·7). The deaths included under the heading Nervous Diseases are mainly those certified as from convulsions, which is frequently a symptom of the onset of acute infective diarrhœa, by far the commonest cause of death in the group of digestive diseases. The heading Tubercular Diseases also formerly included many deaths ascribed to *Tabes Mesenterica*, a term of uncertain meaning, but probably including numerous cases of chronic diarrhœa. The reduction in these three groups of diseases is then mainly a reduction in deaths from diarrhœa.

Equally marked and even more satisfactory is the reduction in the number of deaths from "external causes," which includes overlaying (see page 78) and burns and scalds. The great reduction in the deaths placed in this category testifies to the greater care taken of children and infants by parents. Much less satisfactory are the figures relating to general diseases and respiratory diseases. The figures in column 8 relating to Malformations, Premature Birth, Marasmus, etc., although they show a considerable saving of life—about 500 lives saved per annum—and though doubtless containing many deaths of children who were so malformed as to be incapable of prolonged life, yet show much room for improvement.



## ANALYSIS OF CAUSES OF INFANT MORTALITY IN SUCCESSIVE QUINQUENNIA 1896-1924.

## (A).—RECORDED DEATHS.

Years.	1 Births.	2 Total Deaths Under 1 Year of Age.	3 General Diseases (excluding Tubercu- losis).	4 Tubercular Diseases.	5 Nervous Diseases	6 Respira- tory Diseases	7 Digestive Diseases ; including Diarrhoea.	8 Malforma- tions, Premature Birth, Maras- mus, &c.	9 External Causes.
1890-1900	111,700	21,160	1,508	698	2,476	3,575	6,376	5,698	819
1901-1905	118,801	20,353	1,546	644	2,516	3,484	5,187	5,732	565
1906-1910	118,313	17,739	1,613	465	2,052	3,146	3,902	5,520	539
1911-1915	111,872	15,458	1,309	345	1,432	2,916	3,635	4,953	426
1916-1920	99,451	11,510	1,116	202	1,083	2,821	1,872	4,107	179
1921-1925	104,217	10,497	1,066	200	573	2,776	1,786	3,764	120
1926-1930	19,792	2,066	223	26	97	555	438	660	15

## (B).—DEATHS EXPRESSED AT A RATE PER 1,000 BIRTHS.

1890-1900	33.4	189	12.7	6.2	22.1	32.0	57.1	51.0	7.3
1901-1905	33.4	172	13.0	5.5	21.2	29.3	43.7	48.1	4.7
1906-1910	32.2	149	13.6	3.9	17.4	26.6	33.0	46.7	4.6
1911-1915	29.3	137	11.6	3.1	12.8	26.1	32.5	43.1	3.8
1916-1920	24.9	116	11.1	2.0	10.9	28.4	18.8	42.0	1.8
1921-1925	25.1	100	10.2	1.9	5.5	26.6	17.1	36.1	1.2
1926-1930	23.3	104	11.2	1.3	4.9	28.0	22.1	33.3	0.7

## (C).—DEATHS EXPRESSED AS A PERCENTAGE OF THE RATES RECORDED IN 1896-1900.

1890-1900	100	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1901-1905	100	91.0	102.3	89.3	95.9	91.5	76.5	94.0	65.7
1906-1910	93	78.6	107.1	62.9	78.6	83.1	57.8	91	63.0
1911-1915	87	72.5	91.9	50.0	57.9	81.5	56.9	84	52.1
1916-1920	76	61.4	87.4	32.2	49.3	88.7	32.7	82	25.5
1921-1925	75.1	54.9	80.3	30.6	24.9	84.7	29.9	70.8	16.4
1926-1930	69.8	55.0	88.1	21.0	22.2	87.5	38.7	65.3	9.5

The activities organised by the Health Committee of this city for the welfare of mothers, infants and young children have been carried on throughout the year 1926 with gratifying results. The growth and expansion of preventive medicine is one of the characteristics of the present age. Increased interest is being taken by the public generally in all questions of personal and public hygiene and new legislation from time to time tends to enlarge its scope.

Experience has shown that conditions productive of a high mortality rate among mothers and children, point also to a high rate of morbidity, which is, unfortunately, not calculable by available statistics. In order, therefore, to reduce infant and maternal mortality and morbidity, it is necessary to have suitable arrangements for the care and supervision of expectant motherhood and infancy.

For practical purposes, it has been found that the most opportune time at which to apply safeguarding methods is as early as possible in pregnancy so that expectant mothers may have every chance of bringing healthy infants to maturity.

In the city of Liverpool 24 pre-maternity clinics are held weekly whose sole care is the welfare of the expectant mother. Of these 14 are under the auspices of the Maternity Hospital, two are held at the Royal Infirmary, two belong to the Child Welfare Association, and the remaining six are administered by the Health Committee.

At a pre-maternity clinic, specialised examination is provided and advice and instruction are given to the mothers. Treatment, except of a minor or preventive character, is not provided, since treatment belongs to the realm of clinical medicine. It will be seen, therefore, that it is necessary for the fulfilment of a complete welfare scheme to have co-ordination between the clinics, private doctors, hospitals, maternity and rest homes, midwives, guardians of the poor and all those agencies which render valuable assistance to the medical and social needs of necessitous persons.

The Central Midwives Board have laid down in their rule that midwives must keep notes of their ante-natal visits in the form approved by the Board. As this may necessitate an examination of the patient at which the midwife requires assistance and for which the



patient cannot pay, the free opinion and advice obtainable at pre-maternity clinics are most helpful.

Expectant mothers come to the clinic from many sources, as will be seen by a glance at the accompanying table, which refers to the six Corporation clinics only.

Brought or sent by midwife	...	...	...	...	408
Return cases	...	...	...	...	379
Sent by friends	...	...	...	...	378
Own accord	...	...	...	...	333
Sent by health visitor	...	...	...	...	132
Sent by doctors	...	...	...	...	64
Sent by hospital or voluntary association	...	...	...	...	36
					<hr/> 1,730 <hr/>

The great majority of the return cases are patients of midwives, a few are doctors' cases who cannot afford to pay frequent routine visits to a private doctor during pregnancy, and a few are women who intend to go to a hospital for confinement where out-door ante-natal supervision is not provided.

It will be noted that the numbers of cases referred by doctors and midwives are very gratifying and an indication of the position of pre-maternity clinics as a useful adjunct to the midwifery service of this city.

Of these patients 412 were primigravidae and 1,256 were multiparae.

The arrangements for confinement for the year were:—

Midwife	...	...	...	...	...	1,203
Institution	...	...	...	...	...	362
Private doctor	...	...	...	...	...	30

In 73 cases arrangements had not yet been made. The obstetric histories given by these patients were:—

Normal confinements	...	...	...	...	1,045
Abnormal do.	...	...	...	...	211—1,256
New pre-maternity cases therefore amounted to	...	...	...	...	1,730
Total attendances at the clinic were	...	...	...	...	8,119

Classes for mothers are held at the pre-maternity clinics in rotation. At these classes the mothers are advised on preparation for their confinements, hygienic maternity clothes for themselves and suitable cot, bedding and clothing for the coming infant.

The total attendances at the classes for 1926 were 4,489. Mothers who stay at home for their confinements and have no women relations or friends to assist them in their housekeeping are very grateful for the provision of a home help. Home helps are women who can take the place of the housewife in a home, cook, clean and attend to their children. They are provided by the Child Welfare Association and also by the Women's Service Bureau, Gambier Terrace. The latter organisation also provides maternity bags, which are a great boon to very poor mothers and to those who unexpectedly bear twins. In all cases enquiries are made as to the mother's home conditions. Midwives are encouraged to visit the homes of their patients and to investigate carefully the arrangements for confinement. Where these conditions are unsatisfactory, every effort is made to rectify them at once.

In post-natal work arrangements are made firstly for examination of the mother about four to five weeks after her confinement to ascertain if she has made normal recovery, and secondly, for the general supervision of nursing mothers and infants up to the age of five years by the provision of infant consultation centres or clinics, at the Carnegie Model Welfare Centre, day and resident nurseries, infant welfare centres (milk depots), skilled medical examination and advice by doctors and health visitors.

Infant clinics are established primarily for the instruction of the mothers in the care and feeding of infants and young children. Their purpose is to prevent unnecessary illness due to ignorance of mothers, to assist in restoring the mother to health, to instruct in all branches of hygiene pertaining to mother, child and home, and to sort and refer those cases which require help or treatment to the right quarter. These clinics do not in any sense take the place of a hospital, dispensary or private doctor's consulting room.

Pre-maternity and infant clinics provide, where necessary, accessory foods, such as cod liver oil, pure or in emulsion, Virol, etc., simple tonics, and aperients at cost price. In the case of infants whose



mothers are unable to suckle them, prepared milk, modified to prescription, or dried milk is provided at cost or reduced price. The latter may be obtained at the clinics, both may be obtained on a note from the doctor at one of the several infant welfare centres (milk depots) throughout the city.

The supply of milk in necessitous cases to either mother or child is invariably made the subject of careful enquiry as to the means of the recipient and her ability to pay. The return made to the Maternity and Child Welfare Sub-Committee fortnightly shews the extent to which recipients are in a position to pay for the milk, ordered on medical grounds, and supplied only on medical certificate.

Domestic science classes are held at each clinic in rotation; cookery, knitting, mending, reconstructing, cutting out and making of garments being taught. These classes are well attended and much appreciated.

The sources of admission to the post-natal clinic are similar to those of the pre-maternity clinic, but mothers having once attended an "infant clinic" frequently attend as a matter of course with each succeeding child, so that the number of mothers coming under this category shews a marked increase each year.

The value of the mother's attendance at a clinic is increased by visits in her home which are paid by the health visitor, who has either registered, weighed or taken notes of the doctor's advice for her baby.

Every child who has been seen by the doctor at a clinic is visited the following day in order to ascertain if the doctor's instructions were understood and are being carried out successfully.

#### CARNEGIE WELFARE CENTRE.

The Carnegie Welfare Centre Clinics, which were opened in January, 1924, are increasing their attendances in large numbers.

Four infant clinics are held weekly, and the following figures indicate the number of new cases registered and the total attendances for each of the three years of their existence :—

	1924.		1925.		1926.
New cases	1,166	...	1,094	...	1,092
Total attendances..	14,017	...	16,160	...	17,005

One pre-maternity clinic is held each week and the attendances are as follows :—

	1924.	1925.	1926.
New cases ... ..	187	259	301
Total attendances ...	850	1,117	1,249

During the year almost 4,000 attendances were made at the sewing, cookery and knitting classes held for the mothers at the centre.

The Carnegie Centre serves a threefold purpose. Firstly, for the provision of clinics for expectant mothers and their infants. Secondly, for the provision of wards for the observation of children suffering from the dyspepsias of infancy, early rickets and wasting, and also for the establishment for a suitable dietary for those children, who, for some reason or other must be separated from the mother and weaned. Thirdly, as an educational centre for those studying preventive medicine or public health administration. The centre is visited frequently by medical students, social science students, health visitor students, midwives and foreign delegates.

The policy of administration in the wards is to admit infants who are between the type of case who may be safely left at home and seen as an out-patient and the type of case which is more suitably treated in hospital ward. Theoretically this policy seems to be very simple, but in practice has been found to present many difficulties. Children sometimes exhibit progress quite contrary to that which might be anticipated, and it is therefore extremely difficult to avoid occasionally admitting to the observation wards cases which require transference to a hospital.

During 1926 the numbers admitted to the wards were:—98 children and two mothers.

The mothers were admitted with their infants for the re-establishment of breast feeding.



The sources of admission were :—

Infant welfare centres (including two mothers) ...	56
Health visitors ...	20
Hospitals ...	12
Corporation nursery transfers ...	4
Private doctors ...	4
Voluntary associations ...	4

Many more applications for admission were received but had to be refused, either because there were no vacancies at the time or because the applicants were unsuitable cases.

The reasons for admission were :—

Lack of normal progress ...	46
Infantile dyspepsia ...	21
Early rickets ...	17
Weaning (mothers ill at home or in hospital) ...	8
Observation for breast feeding (mothers attending daily)	3
Infantile atrophy ...	2
Marasmus and convulsions...	1

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98

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The average duration of stay was 34 days. The majority of children were kept in residence until a complete recovery was made, whilst others, when necessary, were recommended hospital or home treatment, and the parents advised accordingly. In some cases, it was preferred to have the children transferred to another institution, in other cases, home care with outside medical attention was adopted. The home conditions, such as unsuitable surroundings, overcrowding, poverty and the type of mother were carefully considered in each case. During the year 63 cases were sent home having established good progress, three made fair progress and were transferred to hospital, 11 went home and one died (marasmus and convulsions).

In three cases (first baby cases) the mothers visited daily for breast massage and feeding under observation. Each case was satisfactory and continued so after the child left the centre.

The two mothers in residence were helped to tide over a period of debility and establish breast feeding.

Each child after discharge is visited at home from time to time in order to ascertain whether or not good progress is being made. In unsatisfactory cases, the child is re-admitted and given a further chance of establishing more normal health and resistance.

The following brief summaries indicate the type of case admitted to the Carnegie observation wards:—

T.E.—Aged 18 months on admission, weight 15 lb. 14 oz., suffering from infantile dyspepsia and marasmus. This child was quite unable to digest food suitable for his age and had severe enteritis. He came from a poor but clean home, was the eleventh child, all of whom are living, but was breast-fed for only five weeks. His trouble began from the time of weaning. The child remained in the Carnegie centre for five and a half weeks. He made a gain of 4 lbs. in this time and was in good health on discharge.

V.H.—Aged 10 months on admission, weight 10 lb. 15 oz., suffering from an intolerance for cow's milk, vomiting, diarrhoea and convulsions. She came from a poor but clean home, and was the third child. She was breast-fed for three months, and then a variety of foods was tried without success. This child was referred to the centre from the Child Welfare Association, and was kept in the ward for sixteen weeks. During this time she gained  $3\frac{3}{4}$  lbs. and cut two teeth. She continued to make good progress.

E.M.—Aged 7 months on admission, weight 12 lb. 11 oz., an illegitimate child with unsatisfactory home conditions. He was never breast-fed, being given dried milk from birth. His condition was fairly satisfactory for about five and a half months, then he developed dyspepsia and was taken to the Maternity Hospital baby clinic, from where he was referred for admission to the Carnegie centre. He was



treated in the wards for eight weeks, and was sent home with a gain of 3 lbs. He was re-admitted in ten days' time with a history of wasting and enteritis. After a week's care he was again sent home quite well, and has since continued to make good progress.

O.P.—Aged  $5\frac{1}{2}$  months on admission, weight 10 lb. 1 oz., suffering from excessive vomiting and marasmus. This baby came from a fairly good and clean home, but his mother was delicate and his father intemperate. The mother has had eight children, all of whom survived, and four miscarriages. She breast-fed this baby for three months. His weaning was not a success, and dyspepsia supervened. He remained in the ward for twelve weeks, and in that time gained 3 lb. 11 oz. He has maintained good progress since.

M.R.—Aged  $5\frac{1}{2}$  months on admission, weight 7 lb. 15 oz., suffering from excessive vomiting and marasmus. She was the only child, and came from a good home, but the mother was delicate. The baby was fed naturally for four weeks, and then on a long series of artificial foods: each attempt was without success, and led to a history of convulsions, gastritis, enteritis and wasting. This child was kept in the centre for 14 weeks, and had gained in that time 4 lb. 7 oz. She is still making good progress.

E.G.—Aged  $2\frac{1}{2}$  months on first admission, weight 7 lb. 15 oz. This was an only child from a good home, but the mother had had a difficult confinement and was in poor health. She was able to breast-feed only for four weeks. Subsequently, with artificial feeding, the child became dyspeptic and ceased to make normal progress. This was a most obstinate case of dyspepsia, and at one time his life was despaired of. Finally he rallied, and 12 weeks later was discharged with a healthy digestion and a gain of 1 lb. 3 oz. At  $5\frac{3}{4}$  months old, he was re-admitted on account of his failure to gain weight, and after two stays of 38 days was again sent home apparently well. At 7 months old, he appeared again with failure to make normal progress. After further treatment in the centre he returned home well, and is now a model child for his age.

### MIDWIVES ACTS, 1902 AND 1918.

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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. In accordance with the terms of the Act of 1918 the fees payable vary from two guineas downwards according to the circumstances of the case. This has been found to be of the greatest benefit in dealing with cases of difficult midwifery.

During the year 1926 two hundred and ninety-six midwives gave the required notice, under section 10, of their intention to practise midwifery in the city.

A total of 12,535 births was attended by these midwives, and 1,471 by the midwives on the staff of the Ladies' Charity, making altogether 70·7 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 1922 TO 1926.

Notifications Received from	1922.		1923.		1924.		1925.		1926.	
	Births.	Percentage of Births Registered in the City.	Births.	Percentage of Births Registered in the City.	Births.	Percentage of Births Registered in the City.	Births.	Percentage of Births Registered in the City.	Births.	Percentage of Births Registered in the City.
Certified Midwives .....	14,323	66.72	13,953	67.42	13,270	64.55	12,624	64.43	12,535	63.33
Medical Attendants.....	1,798	8.38	1,694	8.19	1,920	9.33	1,852	9.45	1,749	8.83
Poor Law Institutions .....	943	4.40	1,055	5.10	1,197	5.82	1,463	7.47	1,728	8.73
Ladies' (Maternity Hospital....	740	3.50	719	3.47	690	3.35	647	3.30	776	3.81
Charity (District Homes .....	1,400	6.52	1,433	6.92	1,501	7.30	1,489	7.60	1,471	7.43
"Rest Home," Chatham St....	317	1.48	334	1.61	335	1.63	331	1.69	308	1.55
Other Institutions .....	54	0.25	30	0.14	43	0.21	101	0.52	190	0.96
Parents .....	14	0.07	5	0.02	5	0.02	6	0.03	8	0.04
	19,589	91.25	19,223	92.89	18,961	92.23	18,513	94.49	18,765	94.81
Total Number of Births registered in the City	} 1922 1923		} 21,467 20,695		} 1924 1925		} 20,559 19,592		} 1926 19,792	

### STILL-BIRTHS.

The number of still-births notified during 1926 was 665, of which number 391 were notified by midwives, being at the rate of 3·1 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	...	...	...	...	...	14
Seventh month	...	...	...	...	...	75
Eighth month	...	...	...	...	...	85
Ninth month	...	...	...	...	...	217
						391

Of these, 347 were examined by the City Bacteriologist, and 13, or nearly 4 per cent., gave a positive reaction, indicating that the cause of the still-births was probably syphilis (see page 240). 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 made in this connection being 67.

The number of visits paid with reference to still-births was 595.

Table shewing results of examination of still-births during the last 10 years:—

Year.	Examined.	Positive.	Percentage.
1917	300	45	15
1918	283	48	17
1919	321	24	7
1920	411	43	10
1921	354	19	5
1922	438	30	7
1923	408	33	8
1924	398	26	6
1925	346	15	4
1926	347	13	4
Totals ...	3,606	296	8

Among the midwives cases during the year there were 84 difficult labours, which were delivered by medical practitioners called in under the rules of the Central Midwives Board.



### 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 circumstance connected with the confinement.

The following table gives the details of the complications for which medical assistance was advised by midwives:—

#### MOTHER :

##### Abnormal Presentation :

Brow or Face Presentation ... ..	18
Occipito-posterior Presentation ... ..	42
Transverse Presentation ... ..	29
Breech Presentation ... ..	60
Foot Presentation ... ..	15
Cord Presentation ... ..	8
Placenta Prævia ... ..	9
Deformed Pelvis ... ..	65
Ante-partum Hæmorrhage ... ..	130
Post-partum Hæmorrhage ... ..	75
Retained Placenta or Membranes... ..	94
Ruptured Perinæum ... ..	427
Multiple Births ... ..	23
Abortion or Premature Birth ... ..	63
Pyrexia ... ..	157
Eclampsia ... ..	13
Obstructed Labour, Uterine Inertia, or requiring Instrumental Assistance ... ..	578
Influenza ... ..	4
Various ... ..	191

#### CHILD :

Injury at Birth ... ..	1
Malformation ... ..	36
Feebleness and Prematurity ... ..	206
Skin Eruption ... ..	72
Ophthalmia ... ..	14
Other conditions in child ... ..	121

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2,451

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The number of visits of enquiry with regard to accounts for emergency assistance during the year was 2,458.

### PUERPERAL FEVER.

The number of cases of puerperal fever notified to the Medical Officer of Health during the year was 64, of which 28 proved fatal. This gives a death rate of 1·41 per 1,000 births in the city.

There were sixty-two cases admitted or occurred in hospital, viz.: 14 Brownlow Hill Infirmary; 14 Mill Road Infirmary; 27 Waltons Institution; 4 Toxteth Institution; 2 Royal Infirmary; 1 Maternity Hospital.

After the usual enquiries were made, 39 cases (of which 15 died) were found to have occurred in the practice of midwives. The number of visits paid in this connection was 47.

### DEATHS AND DEATH RATES FROM PUERPERAL FEVER AND OTHER DISEASES AND ACCIDENTS OF PREGNANCY DURING THE YEARS 1897 TO 1926 (30 years).

Year.	Total number of births in the City.	Deaths from Puerperal Fever.	Death rate per 1,000 births.	Deaths from Other Diseases and Accidents of Pregnancy	Death Rate per 1,000 births.
1897	22,280	25	1·12	53	2·4
1898	22,227	23	1·03	60	2·7
1899	22,488	22	0·98	50	2·2
1900	22,762	22	0·97	44	1·9
1901	21,980	21	0·96	45	2·0
1902	24,243	26	1·07	38	1·6
1903	23,910	22	0·92	42	1·8
1904	24,278	27	1·11	56	2·3
1905	24,350	32	1·32	73	3·0
1906	24,123	27	1·12	50	2·1
1907	23,654	12	0·50	47	2·0
1908	23,891	16	0·67	38	1·6
1909	23,591	21	0·89	47	2·0
1910	23,054	9	0·39	35	1·5
1911	22,493	21	0·93	47	2·1
1912	22,233	15	0·68	53	2·4
1913	22,555	18	0·80	42	1·8
1914	23,065	31	1·34	31	1·3
1915	21,586	27	1·25	41	1·9
1916	20,679	22	1·06	48	2·3
1917	17,906	16	0·90	25	1·4
1918	17,133	16	0·93	35	2·0
1919	18,694	20	1·07	38	2·0
1920	25,039	36	1·49	54	2·1
1921	21,904	34	1·55	46	2·1
1922	21,467	33	1·54	28	1·3
1923	20,695	16	0·77	47	2·3
1924	20,559	22	1·07	39	1·9
1925	19,592	21	1·07	36	1·8
1926	19,792	28	1·41	43	2·2



PUBLIC HEALTH (NOTIFICATION OF PUERPERAL FEVER  
AND PUERPERAL PYREXIA) REGULATIONS, 1926.

These regulations came into force on October 1st, 1926. They require the notification to the Medical Officer of Health of any febrile condition occurring in a woman within 21 days after childbirth in which a temperature of 100·4° Fahrenheit or more has been sustained during a period of 24 hours or has recurred during that period. Puerperal fever was, and still continues, notifiable under the Infectious Diseases (Notification) Act, 1889, to which the above regulations are supplementary.

Puerperal fever is a somewhat ill-defined condition, and it may frequently happen that when the condition becomes well-defined the most favourable opportunity of recovery has been passed. With the object of securing adequate treatment in the early stages the prescribed notification form provides that the medical attendant can ask for (1) a second opinion on the case, (2) certain bacteriological examinations, (3) admission of the patient to hospital, or (4) the provision of trained nurses; or, alternatively, state that facilities for all necessary treatment exist.

The necessary facilities to meet these requisitions have been provided by the Health Committee as follows:—The services of a consultant obstetrician are available when considered necessary by the medical officer. Hospital accommodation has for some years been provided, formerly in the city hospital, Fazakerley and latterly in the Walton institution. Arrangements have been made by which the services of the nurses of the Queen Victoria District Nursing Association are available.

Fifty cases of puerperal pyrexia were notified in the last quarter of 1926. Five of these were found to be puerperal septicæmia, and therefore fall within the definition of puerperal fever. Two were cases of broncho-pneumonia, two of bronchitis, one of erysipelas. The remainder were cases of pyrexia of puerperal origin of a lesser degree than is termed puerperal fever; five were cases of pyelitis (inflammation of the pelvis of the kidney).

Ten of the above cases occurred in hospitals and 19 were attended by midwives. Twenty-four cases were removed to hospital at the request

of the attending practitioner. In three cases a consultant obstetrician was called in, and four were visited by the assistant medical officer. Nurses were provided in three cases.

### 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 two fully trained female inspectors have been appointed; both hold the certificate of the Central Midwives Board. During the year, 2,003 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 greatest 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 and from the Medical Officer of Health.

The operation of the Notification of Births Act, which renders it obligatory on the part of the medical attendant or midwife, as well as on 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.

“QUARRY BANK,” 162, HAWTHORNE ROAD.

The accommodation of the home 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.

The statistics relating to the treatment of patients in the home during the year 1926 are as follows :—

Total number of cases admitted	...	...	...	...	177
Number of women confined in the home (one set twins)	...	...	...	...	161
„ pre-maternity cases	...	...	...	...	18
„ post-natal cases (with infants)	...	...	...	...	1
The average duration of stay was 19½ days.					

Of the 161 cases of labour conducted in the home, the patients in all cases made a good recovery, and no maternal mortality occurred. The normal cases numbered 120, and the cases of complicated labour were 41. Five patients were transferred to hospital for caesarean section. Of the total number of cases 93 were primiparæ. Former patients admitted for a second confinement at the home numbered 22, and for a third confinement numbered 10.

Of the 162 babies born in the home, 158 were born alive and 4 were still-born.

77 infants were males, average weight 7 lbs. 3 ozs.

85 infants were females, average weight 7 lbs. 3½ ozs.

Of the 158 babies born alive 2 died within 10 days of birth. The cause of death was stated to be :—

(1) Melaena neonatorum	...	...	...	6 days.
(2) Prematurity	...	...	...	4 days.

The 18 pre-maternity cases were admitted on account of various complications associated with pregnancy, such as albuminuria, bacilluria, heart disease, contracted pelvis, and varicose veins.

One post-natal case admitted after labour, with infant.

No case of puerperal sepsis or any case with a temperature above 100·4 for 24 hours, and no case of ophthalmia neonatorum occurred in the home during the year.

A pre-maternity clinic is held at the home once per week, when a medical officer attends to see patients.

During the year 168 patients made a first attendance, and the total number of attendances was 629. The average attendance per week is 12.2.

### OPHTHALMIA NEONATORUM.

#### INFLAMMATION OF THE EYES OF THE NEWLY-BORN.

The definition adopted for the purposes of dealing with this disease is that used in the rules issued by the Central Midwives Board, governing the practice of midwives, namely (in the section relating to the child) "Inflammation of, or discharge from, the eyes, however slight." A considerable number of the cases enumerated below are extremely mild, but it is so difficult to draw a line between "slight inflammation" and definite ophthalmia neonatorum that it is considered advisable to include inflammation of all degrees of severity in the term "Ophthalmia Neonatorum."

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

The total number of cases brought to the notice of the department, 705.

(1) Reported by doctors	...	...	...	...	32
(2) „ from hospitals	...	...	...	...	49
(3) „ by midwives	...	...	...	...	463
(4) Discovered by inspectors	...	...	...	...	160
(5) Reported by parents	...	...	...	...	1—705

The above consisted of :—

(1) Mild cases	...	...	...	...	519
(2) Severe cases	...	...	...	...	125
(3) Under private treatment	...	...	...	...	5
(4) Not ophthalmia neonatorum...	...	...	...	...	56—705

Number treated in their homes under special nurse	...	465
„ attended at hospital as out-patients	...	123
„ admitted into hospital	...	41
„ treated by doctors and special nurse	...	20—649



## 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 1926	33	60	101	64	51	52	56	59	33	140	649

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.
649	62	20	32	5.1

## TABLE SHEWING INFECTION OF EYES AT ONSET.

Both Eyes.	Right Eye.	Left Eye.	Doubtful.	Total.
443	102	94	10	649

In the 94 cases where the left eye only was affected at onset the other eye became affected in 3 cases.

In the 102 cases where the right eye only was affected at onset the other eye became affected in 3 cases.

The total number of visits and revisits paid in respect of the above cases was 6,222.

A very important part of the scheme for dealing with this disease is the provision at St. Paul's Eye Hospital of 10 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 41 babies were admitted with their mothers. The average stay in hospital was 15 days.

## RESULTS.

Number of cases under treatment at 1/1/26	...	...	44
„ „ notified during year 1926	...	...	649—693
„ „ cured	...	...	639
„ died during treatment	...	...	11
„ in Poor Law Institutions	...	...	4
„ removed to another town	...	...	1
„ under treatment 31/12/26	...	...	38—693

It is satisfactory to note the entire absence of damage to sight during the past two years. In the absence of the care and assistance provided there can be no doubt that damage to eyesight or its total loss would have occurred in a number of these cases.

## INFANT WELFARE CENTRES AND MILK DEPOTS.

The total number of persons supplied with milk during the year was 17,323, viz., 5,162 on the books at the beginning of the year, and 12,161 admitted during the year. The supply of milk is given on the presentation by the applicant of a note from a doctor, and in a few instances it was allowed on production of written requests from midwives. The following statement shows the different centres and the number supplied at each, viz. :—

Centres.	Ante-Natal.	Nursing Mothers.	Infants.		Liverpool Child Welfare Association.	Totals.
			Under 1 year of age.	1 to 2 Years of Age.		
Netherfield Road ...	86	819	747	58	718	2,428
Earle Road ...	43	212	287	54	194	790
Park Road ...	192	505	551	221	299	1,768
Boaler Street ...	113	284	321	83	324	1,125
St. Anne Street ...	175	780	488	195	702	2,340
Rathbone Road ...	41	84	131	18	122	396
Mill Street ...	85	198	218	57	118	676
Agents ...	81	334	292	167	1,764	2,638
	816	3,216	3,035	853	4,241	12,161



The total quantity of milk supplied during the year was 208,401½ gallons, and the bottles prepared reached a total of 718,208.

Total cases on books, January 1st, 1926	...	...	...	5,162
„ „ admitted during 1926	...	...	...	12,161
				<hr/>
Total supplied during 1926	...	...	...	17,323
				<hr/>
Remaining on the books at the end of the year	...			4,671
				<hr/>
Quarterly Average—January, February, March	...	...	...	5,104
„ „ April, May, June	...	...	...	4,825
„ „ July, August, September	...	...	...	4,391
„ „ October, November, December	...	...	...	4,480

The highest number being supplied with milk at one time was 5,184 during the week ended January 27th.

Since the initiation of the scheme in 1901 down to the year 1916 the number of infants fed at sterilised milk depots was 37,827, and during the last ten years as follows:—1917, 8,740; 1918, 10,532; 1919, 9,832; 1920, 14,052; 1921, 10,509; 1922, 9,874; 1923, 11,411; 1924, 13,098; 1925, 11,890; 1926, 12,161; total, 149,926.

The number of attendances of persons at the centres during the year for advice, and payment for milk, etc., was 23,058.

On one day in each week mothers attend at the centre in their district for the purpose of reviewing family circumstances when the supply of milk is either:—

Continued at the price being charged.

If the circumstances were improved, then the charge was increased.

If the circumstances were worse than when last reviewed, then the charge would be lowered.

The usual grant is for a period of 4 or 6 weeks. In exceptional cases 2 or 8 weeks.

The number of visits paid during the year to children in their own homes by the health visitors attached to the centres in order to see that

the children were being properly fed and cared for and the milk properly used, was 4,583. From time to time information concerning cases is received from the district health visitors and clinics.

#### DRIED MILK.

The infants fed on dried milk during the year were 2,565, of whom 1,766 were admitted during the year.

The number remaining on the books at the end of the year was 812.

The quantity of dried milk used was 59,880 lbs.

#### HEALTH VISITORS.

The work of the health visitors continues on the same lines as in former years, and owing to the prevailing industrial and economic conditions, increasing spheres have been found for their usefulness.

Their duties are numerous, as subsequent tables will show, and, although the work is varied, it is primarily educational and preventive.

The City is divided into districts, to each of which certain health visitors are allocated, this arrangement facilitating the carrying out of the work.

The routine work of the staff includes the following :—

Attendance at clinics for expectant mothers and home visiting of these cases.

At the ante-natal clinics, cutting out, sewing and knitting classes are held to enable and encourage the mothers to make suitable provision for themselves and their expected infants. The classes are well attended by the mothers.

Visiting under the Notification of Births Act.

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

Visits to cases and home nursing of measles, whooping cough, influenza, pneumonia and infantile diarrhoea.



Re-visits to phthisis cases amongst women and children.

Attendances at school medical inspections and following-up, in the home cases of physical defects and neglect found by the medical inspector.

Attendance at minor ailments clinics.

Attendance at eye, ear, dental, ringworm, tonsils and adenoids clinics.

Visits to neglected and verminous school children and ensuring the cleansing of verminous children, and visits to school children with infectious skin diseases.

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 houses, so that the most pressing cases should receive early consideration.

Good work is still being 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.

Care of cases referred from the various voluntary organisations, e.g. : Child Welfare Association, Police, Relieving Officers, Liverpool Society for Prevention of Cruelty to Children, Personal Service Society, Society for the Care of the Mentally Deficient.

#### ANTE-NATAL CLINICS.

There are four pre-maternity centres under the control of the Health Committee, at which six sessions are held.

The admissions to corporation ante-natal clinics during the year were as follows :—

Primigravidæ	...	...	...	...	...	...	412
Multiparæ	...	...	...	...	...	...	1,256
Not pregnant	...	...	...	...	...	...	62

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1,730

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## HISTORY OF PREVIOUS PREGNANCIES.

Normal confinement	...	...	...	...	...	1,041
Abnormal confinement	...	...	...	...	...	208
Unable to trace	...	...	...	...	...	7—1,256

## ARRANGEMENTS MADE FOR CONFINEMENTS AT TIME OF ADMISSION.

Doctors	...	...	...	...	...	30
Midwives	...	...	...	...	...	1,203
Hospital	...	...	...	...	...	362
Arrangements not made...	...	...	...	...	...	73—1,668

The visits paid by health visitors to expectant mothers during the year were:—

First visits	...	...	...	...	...	1,203
Total visits	...	...	...	...	...	1,343
Attendances at ante-natal clinics—new cases...	...	...	...	...	...	5,685
Total number of attendances during the year	...	...	...	...	...	26,523
Attendances of mothers at classes	...	...	...	...	...	4,489

## NOTIFICATION OF BIRTHS ACTS, 1907 AND 1913.

Number of births visited during the year	...	...	...	...	19,708
Re-visits to births during the year	...	...	...	...	43,142
Re-visits to infants up to 5 years of age	...	...	...	...	27,137

## POST-NATAL CLINICS.

The following figures give the condition and feeding of children on admission to those post-natal clinics which are under the control of the Health Committee:—

Admissions for year	...	...	...	...	6,066
Conditions of health on admission—					
Good	...	...	...	...	3,799
Fair (under average)	...	...	...	...	1,540
Delicate	...	...	...	...	727— 6,066



## Method of feeding on admission—

Breast fed entirely	...	...	...	...	3,927
Partly breast fed	...	...	...	...	502
Artificially fed entirely	...	...	...	...	1,637— 6,066
Total attendances for year	...	...	...	...	95,258

There are eleven centres at which 24 sessions are held per week.

## OTHER VISITS.

Visits to cases and home nursing of Measles	...	...	...	15,367
„ „ „ „ Whooping Cough...	...	...	...	413
„ „ of Influenzal Pneumonia	...	...	...	1,959
„ „ „ Infantile Diarrhoea	...	...	...	2,866
Re-visits to Phthisis cases amongst women and children...	...	...	...	7,326

Attendances of health visitors at school medical inspections and following-up in the homes cases of physical defects, verminous and neglect found by the school medical inspectors.

Visits to neglected and verminous school children, and ensuring the cleansing of verminous children :—

Number of visits paid to schools	...	...	...	...	8,074
„ hours spent in schools	...	...	...	...	13,388
„ children inspected in schools	...	...	...	...	41,662
„ children re-inspected in schools	...	...	...	...	129,502
„ dental inspections in school	...	...	...	...	62,774
„ home visits to cases of physical defects	...	...	...	...	9,248
„ home visits to neglected and verminous school children	...	...	...	...	24,445
„ home visits to school children suffering from infectious skin diseases, etc.	...	...	...	...	1,595

Attendance at minor ailments clinics, eye, ear, tonsils and adenoids, dental and ringworm clinics :—

Number of visits to school clinics	...	...	...	6,101
„ hours spent at school clinics	...	...	...	22,180
„ children seen at school clinics	...	...	...	237,100

The Liverpool Day Nurseries are eight in number, seven of which are under the control of the Health Committee. Children from the age of three weeks to five years are admitted to the nurseries between the hours of 7 a.m. and 7 p.m.

At one of the nurseries, children may be boarded for short periods to tide over special difficulties in the homes, usually illness of the mother, as indicated in a subsequent table.

A daily or weekly charge is made for each child. These institutions are greatly appreciated by the working class mothers when, by reason of widowhood or unemployment or incapacity of their husbands they are compelled to go out to work in order to make provision for themselves and their families.

The nurseries provide a training school for nursery nurses and an excellent preliminary training for girls wishing to become subsequently hospital nurses.

The children who attend are taught clean habits and good manners. Their diet, rest, play and progress being carefully supervised.

The day nurseries are situated as follows:—

	Attendances
1.—264, Westminster Road ... ..	10,149
2.—18, Gt. George Square ... ..	8,153
3.—407, Edge Lane (Day and Resident) ... ..	11,445
4.—141 and 143, Smithdown Lane ... ..	8,643
5.—Banks Road, Garston ... ..	8,702
6.—87, South Hill Road (closed end of May) ... ..	3,670
7.—63, Everton Road ... ..	9,433
8.—61, Shaw Street ... ..	7,986

The total number of children admitted into the resident nursery at Elms House from January to December, 1926, was 101.



47 were admitted as their mothers were about to be confined.

14	„	„	„	going into convalescent homes.
3	„	„	„	going into sanatoria.
30	„	„	„	ill in hospital.
4	„	„	„	ill at home.
3	„	„	„	doing temporary work away from home.

### LIVERPOOL CORPORATION ACT, 1921.

#### REGISTRATION OF LYING-IN HOMES.

The Liverpool Corporation Act, 1921, Part 28 (Lying-in Homes), came into operation on 1st April, 1922.

During the year 1926, 13 applications were received by the Town Clerk, which, after careful investigation of the practice and premises, were approved by the Health Committee. There were also 2 registrations cancelled owing to removal, leaving 85 on the register at the end of the year.

Number of rooms registered in the 85 homes containing							
204 beds	...	...	...	...	...	...	159
Additional rooms registered in cases of emergency							30
In registered lying-in homes an additional bed was allowed							
in an emergency	...	...	...	...	...	...	3
Number of still-births which took place in the above homes...							9
„ live births	„	„	„	„	„	...	459
„ legitimate births	„	„	„	„	„	...	416
„ illegitimate births	„	„	„	„	„	...	52
„ twin deliveries	„	„	„	„	„	...	2
„ deaths of children	„	„	„	„	„	...	6
The death of a patient	„	„	„	„	„	...	0

The number of visits paid to lying-in homes during the year was 284.

## INFECTIOUS DISEASE IN SCHOOLS.

During the year 1926, infectious diseases, particularly measles, whooping cough, diphtheria, and mumps, were again prevalent, 10,832 cases amongst children of school age being reported, the numbers in 1925, 1924, and 1923 having been 11,941, 8,630, and 11,523, respectively.

In 20 instances infants' departments had to be closed (for measles, 14; measles and mumps, 1; measles and whooping cough, 1; mumps and whooping cough, 1; whooping cough, 1; other infectious diseases, 2); whilst in three instances closure of one or more classes was resorted to. On three occasions exclusion of all children who had not previously had the disease was found practicable; this is not often feasible, as such a procedure would in most instances reduce the attendance below that which would render it worth while to keep the school open. The recent alteration of the rules of the Board of Education has permitted more flexibility in the measures which can be taken to suppress epidemic diseases.

Measles was the most prevalent epidemic disease during the year, 3,685 cases having been reported among children of school age. As is usual, the outbreak was mainly in the first half of the year; and during the remainder of the year in only four schools did partial closure become necessary on account of this disease.

No considerable outbreak of diphtheria occurred in any day school during the year, but two residential institutions, which are also schools, were somewhat affected, and, owing to the continued prevalence of the disease, the testing of the children by the Schick test for susceptibility to diphtheria, and the subsequent immunisation of those found susceptible, was tried. This preventive measure was attended with success and resulted in the entire elimination of the disease from these institutions in question. An outbreak in a third institution was similarly brought to an end in January, 1927. In other schools where a few cases arose, search for carriers, by the taking of swabs, was undertaken.

The following tables shew the incidence amongst school children of the most important infectious diseases, giving the monthly distribution and the ages of the cases infected:—



### AGE DISTRIBUTION.

[illegible]

MONTHLY DISTRIBUTION.

[illegible]

PUBLIC ELEMENTARY SCHOOLS.

	1926.
Number of visits to schools ... ..	3,492
„ found incorrect ... ..	76
„ of notices issued <i>re</i> defects ... ..	57

NOTICES TO SCHOOL TEACHERS.

The arrangements made with the Education Committee have been continued, viz., 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; 8,757 cards were sent during the year, as against 10,151 in the preceding year.



## TUBERCULOSIS.

## NOTIFICATION.

Public Health (Tuberculosis) Regulations, 1912, and Regulations  
(No. 2), 1918.

Summary of Notifications during the period from 3rd January, 1926,  
to 1st January, 1927 :—

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 .....	7	55	139	94	125	140	241	256	229	96	27	1,409	1,689
Females .....	3	39	111	128	122	156	199	142	89	43	26	1,058	1,254
Non-Pulmonary—													
Males .....	9	76	70	48	37	18	16	15	13	5	2	309	366
Females .....	5	54	60	56	37	30	30	9	7	4	3	295	346

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 .....	1	—	1	2	2	70	134
Females .....	—	—	—	—	—	1	62
Non-Pulmonary—							
Males .....	—	2	—	2	2	—	1
Females .....	—	—	—	—	—	1	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 advantages which should result from the compulsory notification of tuberculosis are to some extent nullified by delay in notification until the disease is in an advanced stage, as well as failure to secure notification in many cases. Statistical tables which follow indicate that 45 per cent. of the new pulmonary cases examined by the Tuberculosis Officers are in an advanced stage of disease, that 22 per cent. of them are deceased before the termination of the year, and that out of 1,203 deaths from all forms of tuberculosis enquired into, 200 had not previously been notified.

All patients notified by medical practitioners are given an opportunity of attending for examination at one of the Tuberculosis Institutes unless it is stated on the notification form that no action of this description is desired. It is exceptional to find that medical practitioners do not wish their patients to be examined by a Tuberculosis Officer or that the patients themselves refuse to seek his advice.

#### TUBERCULOSIS INSTITUTES AND DISPENSARY SYSTEM.

The Tuberculosis Institutes are three in number, and are situated within the Northern, Central and Southern areas of the City. In these branches there are engaged four Tuberculosis Officers and nine whole-time nurses.

The Tuberculosis Institutes serve as—

- (a) Centres for the examination of all patients certified to be suffering from tuberculosis or in which this disease is suspected;
- (b) Centres for the treatment of patients who cannot be more suitably treated at home or in an institution;
- (c) Observation Centres for arrested, quiescent and doubtful cases;
- (d) Centres for the examination of contacts;
- (e) Centres from which are controlled after-care arrangements, grants of extra nourishment, home nursing, initial visits of sanitary inspectors and health visitors to the homes of notified cases, and repetition visits in the case of discharged service patients;
- (f) Centres at which the continued treatment of all patients is supervised, and advice is given to those who need it.

A statistical summary of the work of the Institutes in relation to diagnosis is given in Table I. It is noteworthy that 3,601 new patients were examined during the year. Of these, 1,709 were judged to be suffering from a disability which was not tuberculous in nature, and no treatment at the public expense was granted. This rejection rate of 47 per cent. is higher than that of previous years, and is a measure of the protection of the Sanatorium accommodation from wrongful use.



TABLE I.

Number of Patients	Under observa- tion pending diagnosis on Jan. 1st. the year.	Applying for the first time during the year.	TOTAL.	Found to be			Under observa- tion pending diagnosis on Dec. 31st	Ceased attendance before completion of diagnosis
				Suffering from Tuberculosis.		Not suffering from Tuber- culosis.		
				Pul- monary	Non pul- monary			
New cases examined during the year (exclud- ing "Contacts")—								
Adults—Male	29	1,166	1,195	635	68	404	33	55
Female	24	900	924	419	90	383	9	23
•Children—Male	33	707	740	119	187	405	14	27
Female	22	664	686	117	168	371	15	25
"Contacts" examined during the year—								
Adults—Male	—	8	8	—	—	8	—	—
Female	—	35	35	3	—	32	—	—
•Children—Male	—	62	62	4	5	53	—	—
Female	—	59	59	6	—	53	—	—
TOTALS	108	3,601	3,709	1,303	518	1,709	71	130
Insured Persons (included above)—								
Male	20	936	956	510	39	341	21	45
Female	6	395	401	196	41	152	2	10

\* Under 15 years of age.

### DIAGNOSIS.

The chief aids to diagnosis in doubtful cases are:—

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

Considerable use has been made of examination by X-ray in cases in which there were diagnostic difficulties. During the year 211 cases were so examined, with the result that in 57 cases the evidence was in favour of a tuberculous infection, in 132 cases was against the presence of this disease, and in 22 cases the X-ray evidence was very inconclusive. The result of X-ray examination in conjunction with clinical evidence has enabled the Tuberculosis Officer to overcome diagnostic difficulties in the great majority of the cases which, at first sight, appeared to be doubtful.

The X-ray apparatus used for this purpose is situated at the Fazakerley Sanatorium.

The fact that out of 1,663 admissions to sanatoria and hospitals only seven patients were considered subsequently to be non-tuberculous, is a sufficient indication that these safeguards are satisfactory in practice. Upon the negative side of the diagnosis question it is uncommon to find old rejected cases returning to the Tuberculosis Officer with undoubted disease of a tuberculous nature.

### CLASSIFICATION OF PATIENTS SUFFERING FROM TUBERCULOSIS.

The terms used to describe the classification of patients suffering from tuberculosis, and the description of their condition, are in accordance with the instructions of the Minister of Health in Memorandum 37/T. The following is a brief resumé:—



## CLASSIFICATION OF PATIENTS SUFFERING FROM TUBERCULOSIS.

(i) All patients are grouped according to their sex and age; patients under 15 years of age are classed as children, and those above that age as adults.

(ii) Patients are also classified according to the organs or parts affected, as follows :—

(a) Pulmonary Tuberculosis (including tuberculosis of the pleura and intra-thoracic glands).

(b) Non-pulmonary Tuberculosis.

Patients suffering from both pulmonary and non-pulmonary tuberculosis are classified as pulmonary cases.

(iii) Patients suffering from pulmonary tuberculosis are divided into :—

Class T.B. minus, viz., cases in which tubercle bacilli have never been demonstrated in the sputum.

Class T.B. plus, viz., cases in which at any time tubercle bacilli have been found.

Class T.B. plus cases are sub-divided into three groups, namely, group 1, presenting early lesions; group 3, presenting advanced lesions or complications of prognostic gravity; and group 2, including all remaining sputum positive cases.

(iv) Patients suffering from non-pulmonary tuberculosis are classified according to the site of the lesion, as follows :—

(1) Tuberculosis of bones and joints.

(2) Abdominal tuberculosis (*i.e.*, tuberculosis of peritoneum, intestines, or mesenteric glands).

(3) Tuberculosis of other organs.

(4) Tuberculosis of peripheral glands.

Patients suffering from multiple lesions are classified in one sub-group only, viz., in that applicable to the case which stands highest in the above Table.

#### RESULTS OF TREATMENT.

- (v) "Cured."—Cases in which the disease has been arrested for a period of three years.
- (vi) "Arrested."—Pulmonary cases which have been quiescent for a period of at least two years; non-pulmonary cases when there is reason to believe that the disease is unlikely to recur.
- (vii) "Quiescent."—Cases which have no symptoms of tuberculosis and no signs of tuberculous disease, except such as are compatible with a completely healed lesion, and in which the sputum, if present, is free from tubercle bacilli.
- (viii) "Improved."—Cases short of "quiescent," in which the general health is fair and the symptoms of tuberculosis have materially diminished.
- (ix) "No Material Improvement."—All other patients who are alive.

A statistical return showing in summary form the condition of all patients whose case records are in the possession of the Tuberculosis Institutes at the end of the year, arranged according to the years in which the patients first came under public medical treatment, and according to their classification, is given in two tables below, Table II relating to pulmonary cases and Table III to non-pulmonary cases.

It is noteworthy that of 1,303 new pulmonary cases accepted during the year 490 (37 per cent.) were in a very advanced stage of disease. By the end of the year 288 (22 per cent.) of the new cases arising during that year were deceased. There is but little hope of recovery for patients who come under treatment at so late a stage of their illness.

A statistical summary of the work of the Tuberculosis Institutes so far as all cases on the dispensary registers are concerned, is given in



TABLE II.—PULMONARY.  
THE CONDITION OF PATIENTS WHOSE CASE RECORDS ARE IN THE POSSESSION OF THE TUBERCULOSIS INSTITUTES.

ALIVE.	Condition at the time of the last record made during the year 1926.			Cases arising prior to 1922.					Cases arising in 1922.					Cases arising in 1923.					Cases arising in 1924.					Cases arising in 1925.					Cases arising in 1926.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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					Group 1	Group 2	Group 3	Total Class T.B. PLUS.		Group 1	Group 2	Group 3	Total Class T.B. PLUS.		Group 1	Group 2	Group 3	Total Class T.B. PLUS.		Group 1	Group 2	Group 3	Total Class T.B. PLUS.		Group 1	Group 2	Group 3	Total Class T.B. PLUS.		Group 1	Group 2	Group 3	Total Class T.B. PLUS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
DISCHARGED AS CURED.	Adults	M	11	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

\* Deaths occurring on and after January 1st, 1922, only.

TABLE III.—NON-PULMONARY.  
THE CONDITION OF PATIENTS WHOSE CASE RECORDS ARE IN THE POSSESSION OF THE TUBERCULOSIS INSTITUTES.

Condition at the time of the last record made during the year 1926.				Cases arising prior to 1922.					Cases arising in 1922.					Cases arising in 1923.					Cases arising in 1924.					Cases arising in 1925.					Cases arising in 1926.					
				Bones and Joints	Abdominal	Other Organs	Peripheral Glands	TOTAL	Bones and Joints	Abdominal	Other Organs	Peripheral Glands	TOTAL	Bones and Joints	Abdominal	Other Organs	Peripheral Glands	TOTAL	Bones and Joints	Abdominal	Other Organs	Peripheral Glands	TOTAL	Bones and Joints	Abdominal	Other Organs	Peripheral Glands	TOTAL	Bones and Joints	Abdominal	Other Organs	Peripheral Glands	TOTAL	
ALIVE.	DISCHARGED AS CURED.	Adults	M	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
			F	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
		Child- ren	M	2	...	...	3	5	...	1	...	...	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
			F	1	...	...	1	2	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	DISEASE ARRESTED.	Adults	M	12	1	2	6	21	6	...	2	4	12	6	2	1	...	9	2	...	2	...	4	2	1	1	5	9	1	...	...	...	1	
			F	13	3	4	19	39	1	1	...	10	12	6	...	1	6	13	4	5	...	10	19	1	...	...	5	6	...	...	...	...		
		Child- ren	M	28	22	4	23	77	18	18	...	17	53	13	14	2	20	49	10	12	2	16	40	9	15	2	15	41	10	2	1	5	18	
			F	22	22	2	43	89	17	7	1	19	44	16	10	...	22	48	9	10	...	24	43	13	8	1	13	35	6	1	...	1	8	
	DISEASE NOT ARRESTED.	Adults	M	8	2	3	3	16	4	...	1	2	7	5	...	2	...	7	5	...	1	9	15	5	5	1	8	19	20	3	7	22	52	
			F	9	...	1	7	17	5	1	...	3	9	2	1	...	6	9	5	2	3	9	19	8	4	1	22	35	18	11	6	42	77	
		Child- ren	M	11	2	1	5	19	4	4	...	4	12	11	3	3	11	28	9	16	6	12	43	11	26	2	20	59	43	56	6	48	153	
			F	14	2	2	7	25	3	...	1	5	9	5	3	2	12	22	12	4	...	17	33	11	14	1	35	61	36	28	11	64	139	
TRANSFERRED TO PULMONARY ...				...	3	3	...	2	8	...	1	...	2	3	...	1	...	2	3	1	1	1	1	4	...	...	...	4	4	...	...	...	...	
CONDITION NOT ASCERTAINED DURING THE YEAR. ...				...	27	15	3	21	66	16	6	7	17	46	28	7	1	22	58	25	17	6	41	89	23	14	4	30	71	...	...	...	...	...
LOST SIGHT OF OR OTHERWISE REMOVED FROM DISPENSARY REGISTER...				168	87	30	247	532	27	19	9	54	109	34	23	11	57	125	24	19	9	61	113	13	15	8	47	83	4	7	1	16	28	
DEAD.	Adults	M	19	2	3	1	25*	5	5	5	2	17	9	2	1	1	13	4	3	2	1	10	4	2	2	2	10	4	...	1	1	6		
		F	9	2	3	1	15*	4	1	1	1	7	6	5	3	2	16	6	...	3	2	11	3	4	...	...	7	1	3	1	...	5		
	Child- ren *	M	4	5	3	2	14*	4	8	2	2	16	4	8	6	1	19	7	10	6	3	26	3	7	7	1	18	2	6	4	...	12		
		F	5	3	1	1	10*	4	9	14	1	28	6	10	9	...	25	5	8	8	1	22	2	9	9	...	20	2	8	9	...	19		
TOTALS...				...	356	171	62	392	981	118	81	43	144	386	151	90	42	162	445	128	107	49	207	491	108	124	39	207	478	147	125	47	199	518

\* Deaths occurring on and after January 1st, 1922, only



Table IV, and at the foot thereof are included a few statistics of a general nature.

TABLE IV.

Patients under the supervision of the Tuberculosis Officers exclusive of diagnosis deferred cases :—

Number of Patients.	PULMONARY				NON-PULMONARY			
	Adults		Children*		Adults		Children*	
	M.	F.	M.	F.	M.	F.	M.	F.
Under Treatment or Supervision on Jan. 1st including patients in sanatorium...	1,926	1,369	502	452	199	230	495	435
Coming for the first time under Public Medical Treatment...	635	422	111	113	68	90	192	168
Resuming Public Medical Treatment ...	87	80	27	71	12	21	15	17
TOTALS (1) ...	2,648	1,871	640	636	279	341	702	620
Discharged as no longer requiring either Treatment or Supervision...	3	2	1	2	—	—	4	2
Transferred to other areas ...	33	24	2	6	3	5	4	5
Leaving Public Medical Treatment ...	71	109	50	10	64	60	74	75
Lost sight of ...	80	50	14	2	8	7	11	7
Died ...	471	302	33	36	18	13	18	31
Remaining under Treatment or Supervision on Dec. 31st including Patients in Sanatorium ...	1,990	1,384	540	580	186	256	591	500
TOTALS (2) ...	2,648	1,871	640	636	279	341	702	620
1. Number of Attendances of Patients (including contacts) at the Dispensaries ...	Insured 7,255		Non-insured 11,001		6. Number of Domiciliary Reports received during the year in respect of Patients under treatment at home.			
					(a) Insured persons ... 5,311			
					(b) Non-insured persons ... 4,367			
2. Number of cases in which the period of observation for the purpose of diagnosis exceeded two months ...	15				7. Number of Patients to whom Dental Treatment was given, at or in connection with the Dispensaries ...			
					Nil			
3. Number of other Visits paid by Tuberculosis Officers to the Homes of Patients ...	861				8. Number of			
					(a) Specimens of Sputum etc. examined ... 4,171			
					(b) X-Ray Examinations made in connection with Dispensary work ... 211			
4. Number of Visits paid by Tuberculosis Nurses to the Homes of Patients for Dispensary purposes ...	11,864				9. Number of Reports rendered to the School Medical Department ...			
					3,365			
5. Number of Patients under Domiciliary Treatment on December 31st ...	Insured 1,338		Non-insured 843		10. Number of Reports rendered to the Ministry of Pensions ...			
					2,007			

\* Under 15 years of age.

In Table V is given a statistical analysis of the patients under dispensary treatment at the end of the year.

TABLE V.

Patients under dispensary treatment at the end of the year.

		Pulmonary.	Non-Pulmonary.	Totals.
INSURED PERSONS	Male ... ..	8	2	10
	Female ... ..	3	2	5
NON-INSURED PERSONS	Male Adults ... ..	9	3	12
	Female Adults ... ..	25	3	28
	Male Children* ... ..	30	17	47
	Female Children* ... ..	31	20	51
TOTALS ...	... ..	106	47	153

\* Under 15 years of age.

In Table VI is given a statistical summary of the patients who, not needing active treatment, were under dispensary supervision at the end of the year.

TABLE VI.

Patients not needing treatment who were under dispensary supervision at the end of the year.

		Pulmonary.	Non-Pulmonary.	Totals.
INSURED PERSONS	Male ... ..	357	70	427
	Female ... ..	161	66	227
NON-INSURED PERSONS	Male Adults ... ..	123	35	158
	Female Adults ... ..	326	106	432
	Male Children* ... ..	365	437	802
	Female Children* ... ..	361	361	722
TOTALS ...	... ..	1693	1075	2768

\* Under 15 years of age.



### 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 is made a grant-in-aid. During the year, 162 pulmonary and 132 non-pulmonary cases were nursed in their houses, and to these cases 12,899 visits were paid.

Extra nourishment is granted to patients who needed it as a part of their treatment and were unable to afford to purchase it for themselves. The staple grant is milk and (or) eggs and (or) a meat juice preparation. To the patient is given an order which can be presented to any tradesman. No orders are issued to a patient whose income exceeds the full pension payable by the Ministry of Pensions to a totally disabled pensioner. This scale serves as a useful guide to the Tuberculosis Officer in determining whether extra nourishment should be provided free of cost or not, when examination has shewn that for medical reasons additional diet is desirable. All extra nourishment orders expire at the end of each quarter and are not renewed until the patient makes a further application and, upon examination, it is shewn that renewal is desirable. An arrangement is in force whereby the names of all patients to whom extra nourishment was granted were referred to the Registration Department of the Liverpool Council of Voluntary Aid, from whom in return reports were received as to the number of other sources from which the patient or the patient's family were receiving assistance. By this means overlapping of the Public Health Department with voluntary agencies, the Education Committee and the Poor Law Guardians has been minimised.

At the end of the year 186 patients were in receipt of extra nourishment, involving the daily provision of 193 pints of milk and 23 eggs.

## DOMICILIARY TREATMENT.

This form of treatment is arranged by the Tuberculosis Officers in such cases as have been examined by them, and in which it is considered to be the most appropriate form of treatment. Co-operation between the Medical Practitioners and the Tuberculosis Officers is secured in every case by means of a quarterly report from the Practitioners. At the end of the year, 2,181 patients remained under domiciliary treatment, of which 1,338 were persons insured under the National Health Insurance Act, and were in receipt of treatment from their panel doctors, and 843 were not insured, and were under the treatment of doctors of their own choice. The domiciliary reports received relating to insured persons numbered 5,311, and those relating to non-insured persons numbered 4,367. Table VII shows the position at the end of the year.

TABLE VII.

Patients under domiciliary treatment at the end of the year.

		Pulmonary.	Non-Pulmonary.	Totals.
INSURED PERSONS	Male ... ..	1025	23	1048
	Female ... ..	267	23	290
NON-INSURED PERSONS	Male Adults ...	116	10	126
	Female Adults ...	402	34	436
	Male Children*	99	44	143
	Female Children*	94	44	138
TOTALS ...	... ..	2003	178	2181

\* Under 15 years of age.

The arrangements for the home treatment, comprising attendance by medical practitioners and the provision of drugs, were described in the 1925 report. The home treatment scheme continues to work smoothly.

## DENTAL TREATMENT.

There is no provision for dental treatment at the Tuberculosis Dispensaries. Pensioners suffering from dental disease of a character which interferes with the efficacy of treatment for tuberculosis are



referred to the Ministry of Pensions, and in many instances treatment has been afforded by the latter. Patients under treatment in Fazakerley and Highfield Sanatoria, however, are under the supervision of a visiting dental surgeon. The following is a summary of his work during the year :—

Fillings	...	...	...	...	...	65
Extractions under gas	...	...	...	...	...	3
Extractions under local anæsthetic	...	...	...	...	...	339
Extractions without an anæsthetic	...	...	...	...	...	8
Scaling	...	...	...	...	...	23
Miscellaneous	...	...	...	...	...	24

The miscellaneous work includes the opening up of septic pulps, the removal of sequestra, etc.

#### CO-OPERATION AND CO-ORDINATION.

The activities of the Tuberculosis Institutes are now so well known that new or suspected cases of tuberculosis are referred from many sources for examination and treatment.

The most important source of reference is the medical profession. It is the practice of the Tuberculosis Officers to give every notified case an opportunity of attending for examination with a view to public medical treatment, and it is encouraging to note that only occasionally do patients refuse to be examined. Once patients have been examined they are kept under supervision until the disease is arrested or they are deceased, have left Liverpool or cannot be traced. Patients leaving Liverpool are notified to the Medical Officer of Health of the district in which they have gone to reside, and with each notification is sent a report as to their condition, treatment, and fitness or otherwise for employment.

The co-operation between the Ministry of Pensions and the Tuberculosis Officers is maintained, and during the year 2,007 reports were completed in reference to tuberculous pensioners.

The group of Institutions comprising Leasowe, West Kirby Convalescent Home, and the Ellen Gonner Home, are administered by the

Child Welfare Association. Close co-operation between this Association and the Tuberculosis Department is maintained. In every case discharged from these institutions a full report is rendered upon discharge, for the use of the Tuberculosis Officers in their work of continued supervision. This Association is, moreover, in touch with a large number of children attending the out-patient departments of the various general hospitals, a circumstance which enables them to refer cases to the Tuberculosis Officers when action by the Public Health Department is called for.

Arrangements are in force between the department and the general hospitals which have been approved for the treatment of tuberculosis by the Minister of Health, namely, the Royal Infirmary, the Royal Southern Hospital, the David Lewis Northern Hospital, the Stanley Hospital, and the Royal Liverpool Children's Hospital, whereby the latter accept for treatment surgical cases and emergency pulmonary cases of tuberculosis at the expense of the Local Authority. It is a condition of payment that (1) prompt notification of admission for treatment be received; (2) the Tuberculosis Officer shall have access to the case when under treatment should he so desire; (3) a full report is rendered upon discharge as to the treatment afforded, the result thereof, and the condition of the patient upon discharge. These arrangements work smoothly, and valuable work is in progress.

Co-operation between the Tuberculosis Officers and the School Medical Officers is secured inasmuch as all definite and suspected cases discovered by the School Medical Officers are referred by the latter to the Tuberculosis Officer for examination, treatment and report. It is also the practice of the Tuberculosis Officers to report to the School Medical Officers their findings in any patient of school age examined. These cross references are very numerous, and during the year the Tuberculosis Officers rendered 3,365 reports to the School Medical Department.

#### SANATORIA.

The following institutions were utilised during the year to accommodate patients suffering from pulmonary and non-pulmonary tuberculosis :—



**SANATORIA** :—Fazakerley, Highfield, Delamere, the West Kirby Children's Convalescent Home, the Ellen Gonner Home, Freshfield, Thingwall Hall, and, to a small extent, Daneswood, Ventnor, Barrowmore Hall and Papworth Hall.

**HOSPITALS** :—The Royal Infirmary, the Royal Southern Hospital, the David Lewis Northern Hospital, the Stanley Hospital, the Liverpool Hospital for Children, Leasowe; the Royal Liverpool Children's Hospital, the Royal Liverpool Country Hospital, Heswall; the Liverpool Chest Hospital, and the Crofton Convalescent Hospital.

The Fazakerley and Highfield Sanatoria are situated within the City boundary, and are equipped and administered by the Port Sanitary and Hospitals Committee. Their accommodation and staff at the end of the year were as follows :—

**FAZAKERLEY SANATORIUM.** Beds, 335.

**Staff** :—Medical Superintendent, Principal Resident Medical Officer, Consulting Surgeon, Visiting Dental Surgeon, three Assistant Resident Medical Officers, Matron, Sisters and Nursing Staff numbering 60.

Normal allocation of beds.

	Observation.	Pulmonary Tuberculosis.		Non-Pulmonary Tuberculosis.		TOTAL.
		"Sanatorium" Cases	"Advanced" Cases	Disease of Bones and Joints.	Other Conditions	
Adult Males ...	4	81	57	36	11	189
Adult Females ...	4	44	17	12	5	82
Children under 15	6	33	10	5	10	64
<b>TOTAL ...</b>	<b>14</b>	<b>158</b>	<b>84</b>	<b>53</b>	<b>26</b>	<b>335</b>

See also page 146.

## HIGHFIELD SANATORIUM. Beds, 336.

Staff :—Medical Superintendent, Visiting Dental Surgeon, four Assistant Resident Medical Officers, Matron, Sisters and Nursing Staff numbering 61.

## Normal allocation of beds.

	Observation	Pulmonary Tuberculosis.		Non-Pulmonary Tuberculosis.		TOTAL.
		"Sanatorium" Cases	"Advanced" Cases	Disease of Bones and Joints.	Other Conditions	
Adult Males ...	—	110	64	—	—	174
Adult Females ...	—	72	50	—	—	122
Children under 15	—	40	—	—	—	40
TOTAL ...	—	222	114	—	—	336

See also page 146.

The remaining Institutions named in the opening paragraphs are responsible for the balance of the beds in use, namely, 304. The normal total accommodation for patients suffering from tuberculosis consists of 975 beds, allocated in the following manner :—

## TOTAL NUMBER OF BEDS NORMALLY AVAILABLE FOR PATIENTS.

	Observation.	Pulmonary Tuberculosis.		Non-Pulmonary Tuberculosis.		TOTAL.
		"Sanatorium" Cases.	"Advanced" Cases	Disease of Bones and Joints.	Other Conditions	
Adult Males ...	4	220	142	19	19	413
Adult Females ...	4	137	78	14	7	240
Children under 15...	6	115	14	130	57	322
TOTAL ...	14	481	234	163	83	975



The extent of residential treatment afforded during the year is shown in Table VIII.

TABLE VIII.

	In Institu- tions on Jan. 1st.	Admitted during the year.	Discharged during the year.	Died in the Institutions.	In Institu- tions on Dec. 31st.
<b>NUMBER OF PATIENTS:—</b>					
Adults—Male					
Pulm. ...	358	739	575	170	352
Non-pulm. ...	35	70	56	6	43
Female					
Pulm. ...	199	342	254	87	200
Non-pulm. ...	23	57	56	2	22
Children*—Male					
Pulm. ...	59	64	75	2	46
Non-pulm.	107	147	150	11	93
Female					
Pulm. ...	93	96	89	6	94
Non-pulm.	72	139	117	19	75
<b>NUMBER OF OBSERVATION CASES:—</b>					
Adults—Male ...	—	3	3	—	—
Female ...	—	5	5	—	—
Children*—Male ...	—	1	1	—	—
Female ...	1	—	1	—	—
<b>TOTALS</b>	947	1,663	1,382	303	925

\* Under 15 years of age.

A return showing the immediate results of treatment of patients discharged from residential institutions during the year is given in Table IX.

TABLE IX.

Classification on admission to the institution and condition at time of discharge.	DURATION OF RESIDENTIAL TREATMENT												Total
	Under 3 months.			3—6 months.			6—12 months.			More than 12 months.			
	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	
<b>PULMONARY TUBERCULOSIS :—</b>													
Class T.B. minus—													
Quiescent ... ..	9	7	2	16	11	25	2	3	17	3	7	11	1
Improved ... ..	21	8	15	16	10	14	10	12	11	13	9	20	1
No material improvement ...	70	23	32	27	8	4	7	10	4	—	3	3	1
Died in Institution ... ..	8	1	1	3	—	—	3	—	—	4	1	—	
Class T.B. plus, Group 1—													
Quiescent ... ..	3	—	—	11	1	—	1	—	—	—	—	—	
Improved ... ..	5	4	—	12	—	—	5	—	—	3	1	1	
No material improvement ...	7	3	—	7	1	—	2	1	—	4	2	—	
Died in institution ... ..	—	2	—	2	1	—	—	1	—	2	2	1	
Class T.B. plus, Group 2—													
Quiescent ... ..	3	—	—	16	3	—	4	5	—	6	1	—	
Improved ... ..	13	4	—	37	8	—	27	14	2	14	5	—	1
No material improvement ...	66	22	—	39	15	—	28	5	—	10	5	1	1
Died in institution ... ..	19	14	—	16	10	—	12	3	1	8	3	2	
Class T.B. plus, Group 3—													
Quiescent ... ..	—	—	—	1	1	—	—	—	—	—	—	—	
Improved ... ..	2	2	—	2	—	—	—	—	—	2	1	—	
No material improvement ...	23	24	2	16	7	—	8	6	—	4	2	—	
Died in institution ... ..	55	32	1	17	11	—	7	2	—	14	4	2	1
<b>NON-PULMONARY TUBERCULOSIS :</b>													
Bones and Joints—													
Quiescent ... ..	1	1	4	—	—	12	1	1	16	—	3	44	8
Improved ... ..	3	3	17	—	—	2	1	1	—	5	—	5	4
No material improvement ...	6	2	11	—	—	2	1	—	—	—	1	6	2
Died in institution ... ..	1	—	1	—	—	1	1	—	2	3	—	4	1
Abdominal—													
Quiescent ... ..	—	1	14	—	—	10	1	—	—	—	1	2	2
Improved ... ..	4	2	18	1	1	4	1	—	3	—	—	4	3
No material improvement ...	4	4	20	1	—	3	—	—	1	—	—	1	3
Died in institution ... ..	—	4	2	—	—	4	—	—	—	—	—	—	1
Other Organs—													
Quiescent ... ..	1	—	—	—	—	—	—	—	3	—	—	—	
Improved ... ..	3	1	1	—	1	1	—	—	2	—	—	1	1
No material improvement ...	2	—	4	—	1	—	—	1	—	—	—	—	
Died in institution ... ..	1	—	13	—	—	—	—	—	—	—	—	—	1
Peripheral Glands—													
Quiescent ... ..	6	4	5	—	—	9	—	—	2	—	1	—	2
Improved ... ..	17	17	26	—	—	6	—	—	—	—	1	—	6
No material improvement ...	2	2	8	—	—	—	—	1	—	—	—	—	1
Died in institution ... ..	—	—	—	—	—	1	—	—	—	—	—	—	



# THE LIVERPOOL HOSPITAL FOR CHILDREN.

This Institution is situated at Leasowe, in the Wirral Peninsula, by the edge of the sea, and affords accommodation for children suffering from non-pulmonary tuberculosis. It is administered by the Liverpool Child Welfare Association, and 145 beds are allocated to Liverpool cases.

The following tables of work during 1926 have been kindly furnished by the Senior Medical Officer, Dr. T. Hartley Martin, and indicate the scope and results of the work carried out. Table A classifies the discharged Liverpool patients according to the localisation of the disease.

## LIVERPOOL CASES DISCHARGED FROM LEASOWE HOSPITAL DURING 1926.

TABLE A.

LESION.	Totals discharged.	Non-tuberculous.	Tuberculous.	CONDITION ON DISCHARGE.						Duration of stay in days	Percentage discharged, disease quiescent
				Disease quiescent.	Improved.	Removed by parents.	Transferred.	Not improved.	Died.		
Tuberculous disease of the Spine ...	28	—	28	21	—	—	1	2	4	830	75%
Tuberculous disease of the Hip ...	9	—	9	9	—	—	—	—	—	1163	100 %
Tuberculous disease of the Knee ...	8	1	7	6	—	—	—	1	—	392	85·7%
Tuberculous Osteitis...	40	—	40	36	—	2	—	1	1	543	90%
Tuberculous Adenitis	16	—	16	15	—	—	1	—	—	115	93·7%
Tuberculous Peritonitis ...	31	—	31	23	—	1	—	4	3	148	74·2%
Lupus ...	4	—	4	—	4	—	—	—	—	199	—
TOTALS ...	136	1	135	110	4	3	2	8	8	475	81·5%

The 110 patients discharged with the disease quiescent represent 81·5 per cent of all tuberculous cases treated and 84·6 per cent of the tuberculous cases treated to completion.

The work done in the "Light" department continues to yield favourable results. General irradiation of the whole body is practised, the source of light used being long flame carbon arc lamps (B.S. cores). Acclimatisation is achieved by giving an initial dose of 10 minutes—5 back and 5 front—at a distance of three feet and increasing the dose by 10 minutes per exposure, until a full dose of one hour three times a week is attained. Although all cases react by erythema, desquamation, and pigmentation, no severe skin reactions result either during or after acclimatisation except in certain fair-haired and fair-skinned cases, nor is there any deep pigmentation similar to that produced by natural sunlight even after long continued exposures.

The results are seen in the brighter mentality of the children, increased appetite, more rapid gain in weight and a greater zest in life. This is most noticeable in cases of tuberculous peritonitis, and the improvement shown by these cases has been most gratifying.

The ease with which a regular dose on alternate days can be given and its duration controlled is a great advantage in these cases, as they do not stand exposure to strong sunlight very well. It must be confessed that the reaction of the skin seems to cease after some time, as if the skin had become accustomed to the rays. To obviate this, the type of core in the carbons used can be changed and by using tungsten cores or chrome cores a light of different composition can be secured which will cause the skin to react once more.

The after-care work in reference to Liverpool cases discharged from Leasowe is carried out at the Tuberculosis Institutes. Table B is compiled from records thus made, and the figures indicate that in a high proportion of cases a very satisfactory condition is maintained subsequent to discharge.



TABLE B.

Liverpool Cases discharged quiescent in	Numbers.	Percentage of cases quiescent year ending December 31st.							Percentage remaining quiescent without relapse since discharge.
		1920	1921	1922	1923	1924	1925	1926	
1919 ...	84	89%	86.9%	86%	...	...	...	...	80%
1920 ...	86	...	90%	88%	89.5%	...	...	...	79%
1921 ...	90	...	...	90%	84%	86.7%	...	...	81%
1922 ...	77	...	...	...	85.8%	85.8%	85.8%	...	74%
1923 ...	81	...	...	...	...	95%	91%	91%	80%
1924 ...	80	...	...	...	...	...	87%	87%	81%
1925 ...	86	...	...	...	...	...	...	94%	94%

Table C shows that it has been found possible to treat bone cases for a greater length of time than was the case formerly, resulting in a material improvement in the condition of patients on discharge. It is probable that, as the result of more prolonged institutional treatment, the proportion of relapses will be reduced, small though this proportion has been in the past in cases treated to completion.

TABLE C.

			Cases discharged in 1926.			Cases discharged 1919-1925.		
			Numbers.	Average duration of stay in days.	Percentage disease quiescent at date of discharge.	Numbers.	Average duration of stay in days.	Percentage disease quiescent at date of discharge.
Tuberculous Spine	...	...	28	830	75%	127	695	62.2 %
„ Hip	...	...	9	1163	100%	89	638	88.7 %
„ Knee	...	...	7	392	85.7 %	62	508	88.7 %
„ Osteitis	...	...	40	543	90%	199	455	82.4 %
„ Adenitis	...	...	16	115	93.7 %	108	251	91.6 %
„ Peritonitis	...	...	31	148	74.1 %	129	224	73.6 %
Lupus	...	...	4	199	—	9	241	33.3 %

## THE SANATORIUM WAITING LIST.

The number of patients waiting to enter a sanatorium at the end of each quarter from 1916 to 1926 is given in Table X. :—

TABLE X.

	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.
March 31st ...	330	361	302	441	77	264	17	67	207	184	11
June 30th .....	253	442	425	328	131	325	58	135	251	202	22
September 30th	398	422	430	140	173	171	45	120	218	127	11
December 31st	389	265	549	163	190	47	65	132	156	90	

## AFTER-CARE.

The after-care arrangements in force are as follows:—

- (1) The periodic examination by the Tuberculosis Officers of all cases under Public Medical Treatment.
- (2) Visits paid to patients in their homes by the Nurses attached to the Tuberculosis Institutes, and by the Health Visitors and Sanitary Inspectors employed by the Health Committee.
- (3) Visits paid to patients in their homes by the Nurses of the Queen Victoria District Nursing Association.
- (4) The reference of cases presenting peculiar difficulties to voluntary associations, such as the Child Welfare Association, the Personal Service Society, and the Central Relief Society, etc.

During the year the Tuberculosis Nurses attached to the Tuberculosis Institutes made 11,864 home visits. The health visitors and sanitary inspectors made 14,638 home visits. All these visits are the subject of



report to the Tuberculosis Officer concerned. The home visits of the nurses of the Queen Victoria District Nursing Association, to the number of 12,899, have already been referred to.

## LEGISLATION AND REGULATIONS.

### LIVERPOOL CORPORATION ACT, 1921.

#### PUBLIC HEALTH ACT, 1925.

Section 62 of the Public Health Act, 1925, has a purpose similar to that of Section 442 of the Liverpool Corporation Act, 1921, giving power to a Local Authority to obtain a magistrate's order for the removal to an institution of a patient suffering from pulmonary tuberculosis so housed that there is danger of the spread of infection. Although it has not been found necessary to take action under this Act, the possession of the power to do so has proved valuable in persuading to enter a sanatorium patients who would not otherwise have done so.

#### PUBLIC HEALTH (PREVENTION OF TUBERCULOSIS) REGULATIONS, 1925.

These regulations give power to the Local Authority to prevent patients suffering from tuberculosis in an infectious stage from handling milk under conditions which give rise to the danger of the spread of infection through the medium of the milk. Careful enquiries are made as to the nature of the employment of all tuberculous patients coming under observation, particularly in reference to pulmonary cases with a positive sputum. During the year no persons who were employed in the milk trade were detected to be suffering from tuberculosis in an infectious form, so that action under these regulations has not been necessary.

### NON-PULMONARY TUBERCULOSIS.

An enquiry was made by the Public Health Department into 625 new cases of non-pulmonary tuberculosis arising during 1926, with the following results :—

Ward.	Cases.	Rate per 10,000.	Average for previous 4 years.
Scotland ... ..	31	6·8	8·0
Exchange ... ..	58	15·5	14·0
Abercromby ... ..	33	6·9	9·1
Everton ... ..	110	8·5	9·0
Kirkdale ... ..	51	6·9	9·2
Edge Hill ... ..	78	8·5	8·6
Toxteth ... ..	74	6·7	6·9
Walton ... ..	63	6·6	6·6
West Derby East ... ..	45	5·1	7·5
Wavertree ... ..	40	6·7	7·0
Sefton Park ... ..	11	3·2	3·5
Garston ... ..	19	6·3	5·3
Fazakerley ... ..	2	3·0	3·3
Woolton ... ..	9	14·6	6·2
Whole city ... ..	625	7·35	8·1

There is a well-marked decrease in the notifications of non-pulmonary tuberculosis from 847 in 1925 to 604 in 1926. This decrease is mainly in the ill-defined conditions, but also affects the abdominal and peripheral glandular sites. The decrease affects the city generally, except in Exchange and Woolton.

The following figures summarise the notifications of cases of non-pulmonary tuberculosis for the past six years (1921-26), divided into group A, where there was no history of exposure to an open case of tuberculosis, and group B, where there was a history of exposure:—

Site of Disease.	Group A.	Group B.	Proportion of total expressed as a percentage.	
	No history of exposure.	History of exposure.	Group A.	Group B.
Bones and joints ... ..	852	74	23·9%	18·8%
Abdominal ... ..	747	101	20·8%	25·7%
Peripheral glands ... ..	1140	134	31·8%	34·2%
Meninges and brain ... ..	366	50	10·3%	12·7%
Skin ... ..	107	12	3·0%	3·1%
Urino-genital ... ..	79	3	2·2%	0·7%
Other sites and ill-defined	251	18	7·0%	4·6%
Totals ... ..	3532	392		



The principal differences appear to lie in an excess of bone and joint disease among cases giving no history of exposure to open tuberculosis, and an excess of abdominal disease among those with a history of such exposure.

### NOTIFICATIONS AND DEATHS.

During the year inquiries made into a number of fatal cases of tuberculosis revealed the fact that a considerable proportion took place in cases which had not been notified during the lifetime of the patient.

In Table XI. is given the results of this inquiry, together with those of a similar one in 1923, 1924 and 1925.

TABLE XI.

Year	Total Number of Deaths inquired into.	Number of deaths in cases not previously notified or referred in any other way.	Notifications prior to death, or other references, within the time specified at the head of each column.						Number of these cases known clinically to the Tuberculosis Officer at the time of death.
			Within 2 weeks of death.	Within 2-4 weeks of death.	Within 1-3 months of death.	Within 3-6 months of death.	Within 6-12 months of death.	Over 12 months prior to death.	
1923	1,239	278	81	78	166	148	108	380	863
1924	1,207	249	68	88	166	139	126	371	757
1925	1,218	273	84	81	163	127	128	357	737
1926	1,203	200	78	58	166	118	147	436	807

It is noteworthy that a considerable proportion of the cases (16.6 per cent.) were not reported until death had taken place, and an additional 11.3 per cent. were only notified within a month of death. Almost one-third of the number of persons dying from tuberculosis, therefore, had no opportunity given to them of making use of the facilities for treatment at the disposal of the Port Sanitary and Hospitals Committee. Doubtless there are several reasons which combine to produce so high a figure, such as the failure of patients to consult a

doctor until the very end of illness, doubt and difficulty in regard to the diagnosis, and the failure on the part of doctors to notify cases although a positive diagnosis has been made.

### DEATHS FROM PULMONARY TUBERCULOSIS.

The number of deaths from pulmonary tuberculosis in Liverpool from 1871 to 1926, together with the number of new cases notified, and the death rate which prevailed in England and Wales is given in Table XII.

TABLE XII.

#### DEATHS FROM PULMONARY TUBERCULOSIS.

Years.	Cases notified.		Number of deaths.	Death Rate per 1,000 Liverpool.	Death Rate per 1,000 England and Wales.
1871 to 1880 .....	Average yearly figures	Nil	1,506	2.90	2.24
1881 to 1890 .....		Nil	1,260	2.35	1.81
1891 to 1900 .....		Nil	1,171	1.92	1.42
1901 to 1910 .....		2,216*	1,233	1.68	1.15
1911 to 1920 .....		2,812*	1,214	1.55	1.10
1921.....	2,164		1,048	1.28	0.85
1922.....	2,078		1,086	1.32	0.85
1923.....	2,081		1,046	1.26	0.80
1924.....	2,345		1,056	1.26	0.80
1925.....	2,687		1,051	1.25	0.79
1926.....	2,467		1,033	1.21	—

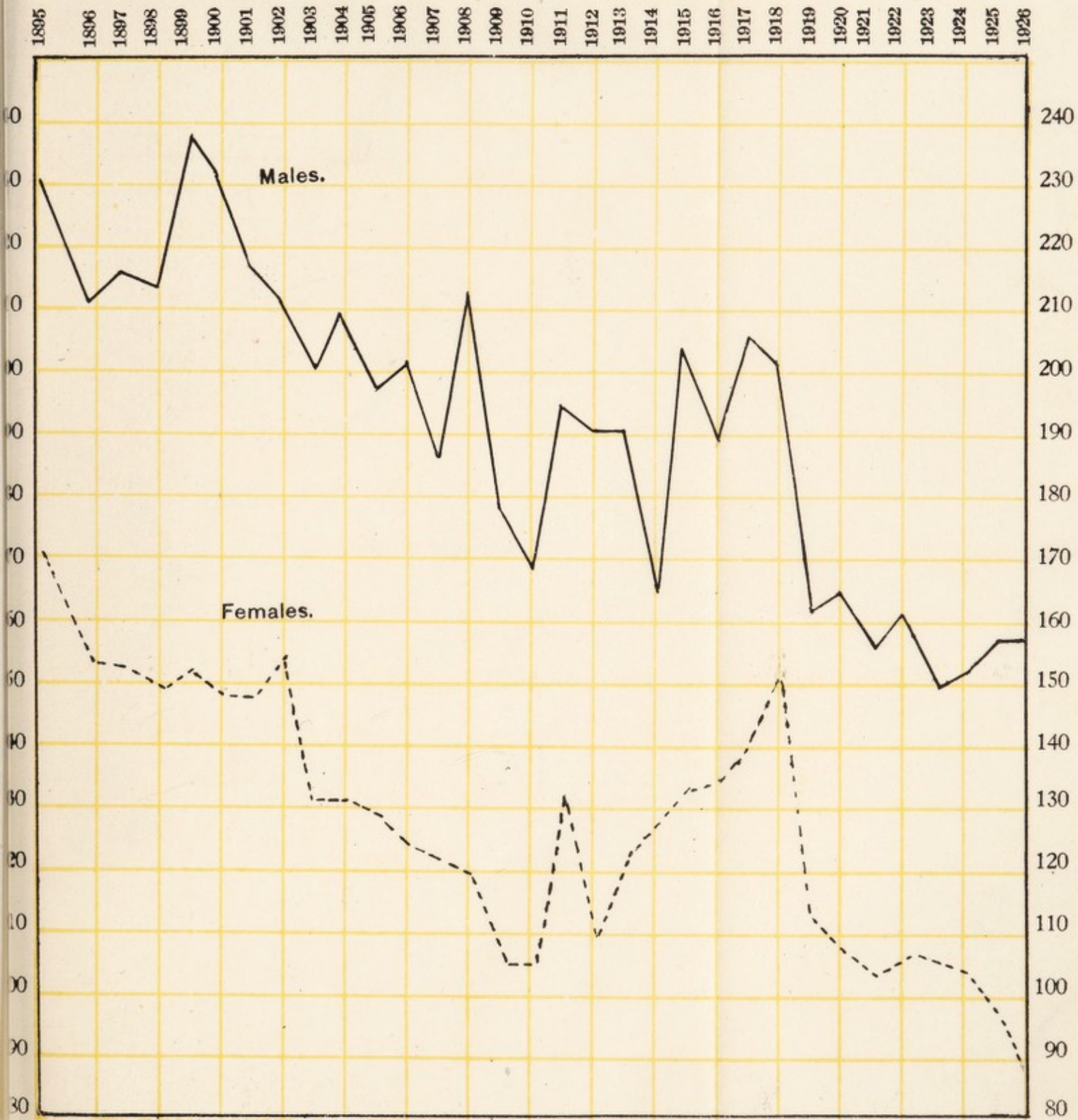
\* Voluntary notification from 1901 to 1911

In Table XIII. a similar return is made in respects of deaths from non-pulmonary tuberculosis, etc.



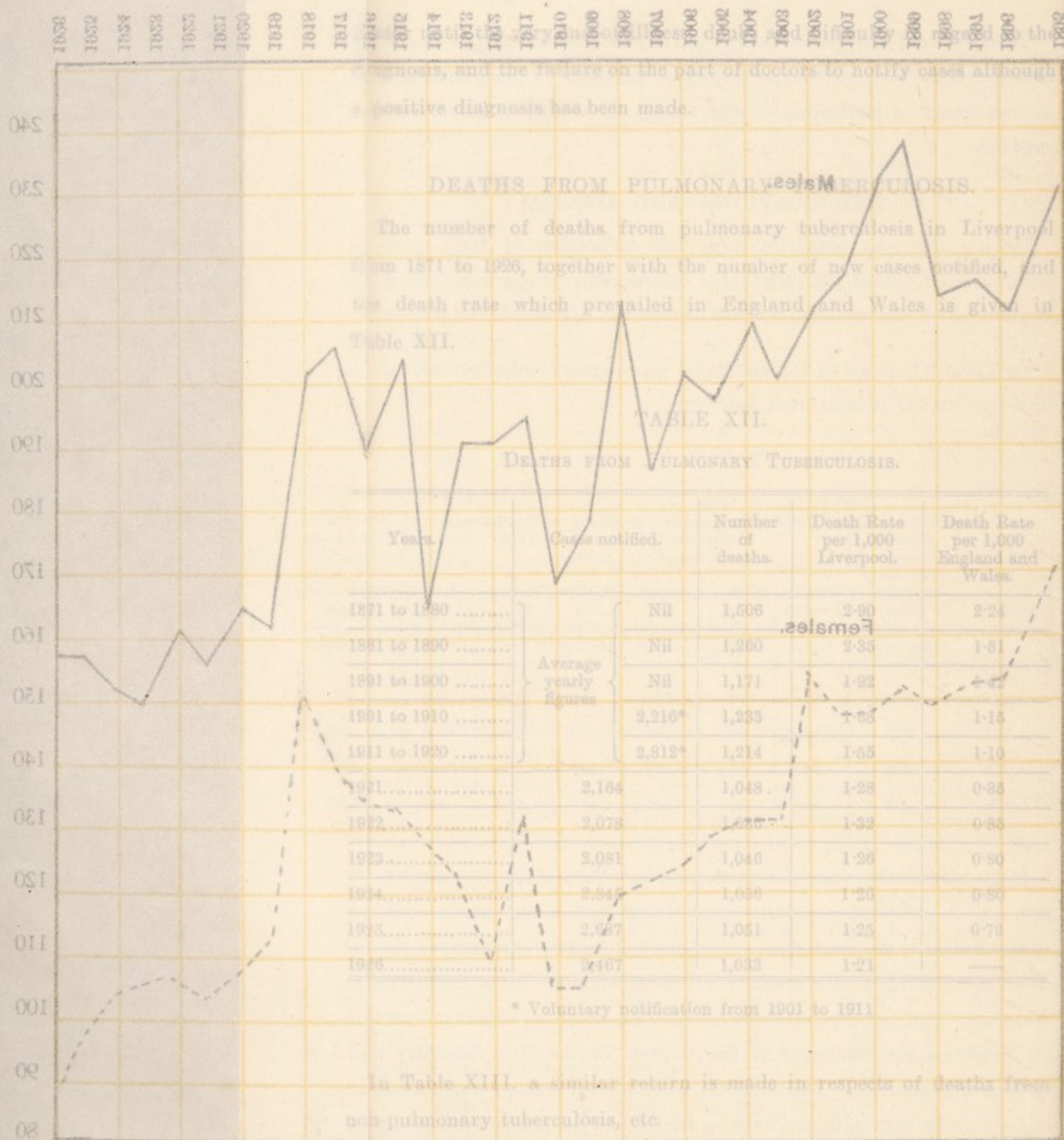
# LIVERPOOL.

## PHTHISIS DEATH RATES PER 100,000 OF POPULATION.



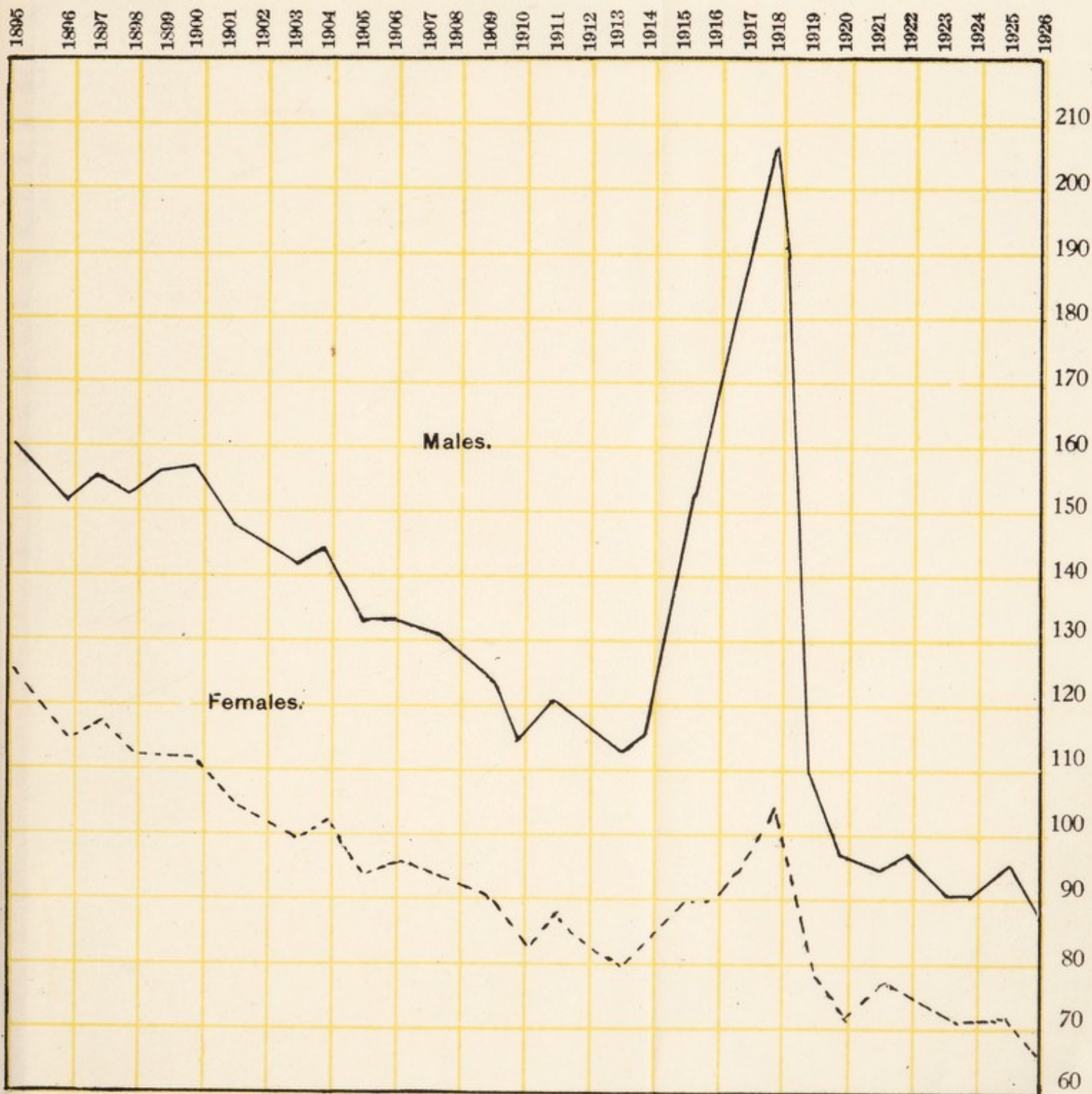
# LIVERPOOL.

## PHTHISIS DEATH RATES PER 100,000 OF POPULATION.





**ENGLAND AND WALES.**  
**PHTHISIS DEATH RATES PER 100,000 OF**  
**POPULATION.**



# ENGLAND AND WALES PHTHISIS DEATH RATES PER 10 POPULATION.

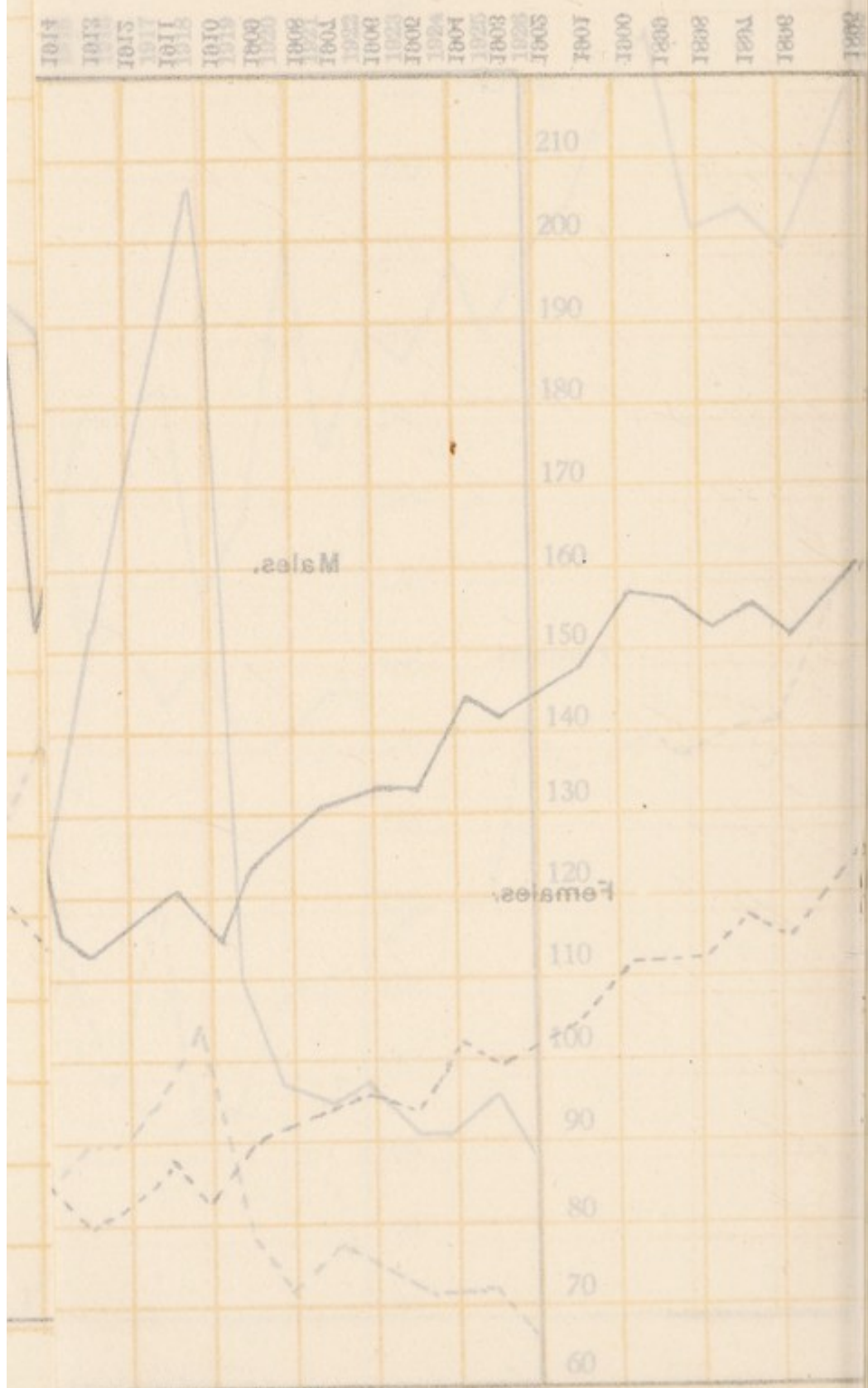




TABLE XIII.  
DEATHS FROM NON-PULMONARY TUBERCULOSIS.

Years.	Cases notified.	Number of deaths.	Death Rate per 1,000 Liverpool.	Death Rate per 1,000 England and Wales.
1871 to 1880 .....	Average yearly figures	Nil	481	·90
1881 to 1890 .....		Nil	527	·98
1891 to 1900 .....		Nil	500	·82
1901 to 1910 .....		100*	416	·56
1911 to 1920 .....		716*	349	·45
1921.....	595	294	·36	·27
1922.....	553	240	·29	·23
1923.....	498	263	·32	·22
1924.....	692	216	·26	·21
1925.....	828	232	·28	·19
1926.....	604	217	·26	—

\* Voluntary notification from 1901 to 1911.

The age and sex distribution of deaths from both pulmonary and non-pulmonary tuberculosis are given in Table XIV.

TABLE XIV.  
AGE PERIODS OF DEATHS FROM TUBERCULOSIS.

Age Periods.	PULMONARY.		NON-PULMONARY.	
	Males.	Females.	Males.	Females.
0—1	2	3	10	11
1—5	17	9	34	29
5—10	5	4	12	22
10—15	8	18	8	11
15—20	32	41	8	7
20—25	61	69	8	2
25—35	106	85	6	11
35—45	167	74	8	6
45—55	138	58	4	3
55—65	69	26	6	1
65 and upwards	31	10	5	5
TOTALS ...	636	397	109	108

The distribution of deaths from pulmonary tuberculosis according to the districts in which the patients resided and according to the quarter of the year during which death took place is given in Table XV.

TABLE XV.

## DEATHS FROM PULMONARY TUBERCULOSIS IN DISTRICTS.

DISTRICTS.				QUARTERS.								YEAR 1926.		
				March.		June.		Sept.		Dec.		M.	F.	Total
				M.	F.	M.	F.	M.	F.	M.	F.			
Exchange	...	...	...	28	6	36	16	33	22	26	14	123	58	181
Abercromby	...	...	...	11	8	7	2	19	13	12	3	49	26	75
Everton	...	...	...	29	34	35	20	17	16	28	24	109	94	203
Kirkdale	...	...	...	13	9	15	5	5	9	13	13	46	36	82
Edge Hill	...	...	...	16	9	20	8	9	4	13	6	58	27	85
Toxteth	...	...	...	21	8	20	6	12	12	14	8	67	34	101
Walton	...	...	...	28	18	26	14	9	6	13	12	76	50	126
West Derby (East)	...	...	...	19	15	12	8	7	7	8	11	46	41	87
Wavertree	...	...	...	10	4	18	9	9	3	8	9	45	26	71
Toxteth (East)	...	...	...	3	...	8	1	1	1	2	1	14	3	17
Fazakerley	...	...	...	2	...	1	1	...	...	...	1	3	2	5
Woolton	...	...	...	...	...	...	...	...	1	...	...	...	1	1
City	...	...	...	180	111	198	90	121	94	137	102	636	397	1,033

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



A similar return in respect of deaths from non-pulmonary tuberculosis is given in Table XVI.

TABLE XVI.

DEATHS FROM NON-PULMONARY TUBERCULOSIS IN DISTRICTS.

DISTRICTS.	Tubercular Peritonitis.		Tubercular Meningitis.		Other forms of Tuberculosis.		YEAR 1926.		
	M.	F.	M.	F.	M.	F.	M.	F.	T.
Exchange ... ..	3	3	5	11	3	4	11	18	29
Abercromby... ..	3	2	2	2	4	4	9	8	17
Everton ... ..	6	7	7	8	11	8	24	23	47
Kirkdale ... ..	...	3	2	6	4	3	6	12	18
Edge Hill ... ..	1	2	6	4	4	4	11	10	21
Toxteth ... ..	3	4	5	5	5	2	13	11	24
Walton ... ..	2	...	2	2	3	5	7	7	14
West Derby (East) ... ..	...	5	7	4	6	3	13	12	25
Wavertree ... ..	4	1	5	2	5	2	14	5	19
Toxteth (East) ... ..	...	...	...	1	...	...	...	1	1
Fazakerley... ..	...	...	1	1	...	...	1	1	2
Woolton ... ..	...	...	...	...	...	...	...	...	...
City ... ..	22	27	42	46	45	35	109	108	217

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

### VENEREAL DISEASES.

Satisfactory results are still being achieved through the scheme for the prevention and treatment of venereal diseases.

The clinics, now of several years' standing, have been fully availed of. There were 3,809 new cases, male and female, and the total attendances at the clinics, including the Seamen's Dispensary (41,720), were 93,264, representing an increase of over 22,000 on the previous year.

The greatest increase was at the Seamen's Dispensary, where the attendances rose from 27,265 in 1925 to 41,720 in 1926.

A table shewing attendances, etc., at each of the clinics is given, and also details of the diseases and sexes dealt with at the Royal Infirmary.

RETURN SHOWING THE NUMBER OF NEW CASES ATTENDING THE VENEREAL DISEASES CLINICS DURING THE YEAR 1926. ALSO TOTAL ATTENDANCES AND IN-PATIENT DAYS OF OLD AND NEW PATIENTS DURING SAME PERIOD.

	Seamen's Dispensary.	Royal Infirmary.	Royal Southern Hospital.	David Lewis Northern Hospital.	Stanley Hospital.	TOTAL.
New Cases ...	1,360	1,292	483	277	349	3,761
<b>Old and new patients</b>						
Total attendances	41,720	24,507	8,536	10,403	8,098	93,264
In-patient Days	—	24	3,557	—	256	3,837

The occupations stated to be followed by patients registered at the Clinics at the Royal Infirmary during the year are of interest :—

MALES.	FEMALES.
Seafaring people ... .. 209 (Of these, 12 were foreign.)	Housewives ... .. 142
Artizans ... .. 513	Home duties ... .. 11
Miscellaneous ... .. 313 (Clerks, agents, hawkers, &c.)	Shop assistants ... .. 6
	Factory workers ... .. 9
	Domestic service ... .. 25
	Other occupations ... .. 12
	Infants and children* ... 22
1,035	227



In addition, 68 male and 9 female patients who had ceased attending for six months (or longer) resumed their attendances during the year.

20.0 per cent. of the total male patients registered were seafaring people.

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

U.S.A., 4; Colonies, 7; Norway, 3; Holland, 3; other nationalities, 5; total, 22.

The ages range approximately from 15 to over 60 years, but the majority of the patients were between the ages of 20 and 35 years, as shown by the following table, viz.:—

	Males.	Females.
Under 10	*7	11
10—15	1	5
15—20	36	9
20—25	229	45
25—30	255	46
30—35	184	46
35—45	209	36
45—55	94	18
55—65	21	4
65 upwards	6	0

\* Male infants brought to the female clinic by their mothers.

There were 18 infants and young children under 10 years of age who attended this clinic during the year. Past experience shows that many cases of uncertain diagnosis, and simulating syphilis, especially skin eruptions, may be incorrectly reported as syphilis. Many of them require a more careful investigation before a definite diagnosis can be made. This has also been experienced in the past in other diseases, e.g., typhoid fever, with which disease many simulating conditions were confused. Of the above 18 infants and children, 2 were found to be suffering from syphilis, 4 from gonorrhœa, and 12 were non-venereal.

Particulars as to still-born infants examined will be found on page 240.

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.

In many cases a visit was paid to the clinic to obtain information with regard to the attendance of patients, thus obviating the necessity of too frequent visits to the homes of the patients.

It will be noticed that the occupation stated to be followed by patients attending the Royal Infirmary includes seafaring people, and the number of this class show a remarkable falling off since 1924. The decline is co-incidental with the opening of the Seamen's Dispensary, which is conveniently situated for, and attractive to, seafarers generally.

#### SEAMEN'S DISPENSARY.

Year.	New cases.	Seamen.	Total attendances (all patients).
1924 (9 months)	471	—	8,322
1925	1,084	—	27,265
1926	1,360	—	41,720

#### ROYAL INFIRMARY.

1920	2,804	880	39,278
1921	2,631	703	33,863
1922	2,195	575	29,217
1923	1,767	505	28,804
1924	1,531	349	27,896
1925	1,197	253	21,060
1926	1,292	209	24,507

#### SEAMEN'S DISPENSARY.

The value of the above Clinic, which was opened early in 1924, has again been demonstrated, the attendances shewing a very marked increase on previous years. The patients are very attentive to treatment, and take an intelligent interest in their progress.

During the year, 1,855 cases were under treatment, the total attendances numbering 41,720. Irrigations average about 100 per diem, and the Medical Officer has seen and treated as many as 80 patients in a day.

The classification of persons dealt with at the Clinic for the first time was as follows:—



Suffering from Syphilis	...	...	...	444
„ „ Soft Chancre	...	...	...	136
„ „ Gonorrhœa	...	...	...	780
				<hr/>
Total	...	...	...	1,360
				<hr/>

The following examinations of pathological material were made :—

For Spirochaetes	...	...	...	...	31
„ Gonococci	...	...	...	...	1,813
„ other	...	...	...	...	—
„ Wasserman Reaction (at City Laboratory)					766

#### HOSTEL FOR WOMEN.

The arrangement with the Diocesan Association for the treatment at the Edge Lane Medical Home of young women suffering from venereal diseases has been continued with gratifying results, the 15 beds originally provided for this class of patient having now been increased to 18 beds. During the year there were 48 new patients, and the total number of in-patient days was 6,258.

#### EDUCATIONAL PROPAGANDA.

The important work of bringing home to the general public and those likely to come in contact with venereal disease of the dangers arising therefrom is being performed by the Merseyside Boroughs Health Education Committee. Addresses have been given in Liverpool by selected medical men at such places as H.M. Prison, Walton; Seamen's Institutes, various industrial concerns, and other suitable centres in the associated boroughs. These lectures have been well attended and much appreciated. A lecture on the dangers of venereal disease is now included in the series on first aid and hygiene given to mercantile marine cadets, and also a series of addresses to associations for boys in various parts of the city.

The question of obtaining powers to require persons suffering from venereal diseases to seek medical aid, which was fully discussed some five years ago, has not been lost sight of, and as far as may be gauged from reports and speeches in the press, etc., public opinion is gradually trending in the direction of some compulsion being exercised on certain types of patients. It is being slowly realised that something more than persuasion may be necessary to control the treatment and spread of these diseases, and application has been made to Parliament in the Liverpool Corporation Bill, 1926, for further powers dealing with this subject.





	Syphilis.		Soft Chancre.		Gonorrhœa.		Conditions other than Venereal.		TOTAL.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
4. Number of cases transferred to other Treatment Centres after treatment for ...	58	26	15	...	90	21	...	...	163	47
5. Number of cases discharged after completion of treatment and observation for ...	77	4	43	...	202	11	623	336	945	351
6. Number of cases which, at the end of the year under report, were under treatment or observation for ...	1,173	609	72	...	1,447	393	153	35	2,845	1,037
TOTAL—Items 3, 4, 5 and 6 ...	2,342	932	236	...	3,130	576	776	371	6,484	1,879
7. Out-patient attendances—										
(a) For individual attention by the Medical Officer ...	16,713	6,897	1,603	...	21,545	3,177	1,504	396	41,365	10,470
(b) For intermediate treatment, e.g., irrigation, dressings, etc. ...	1,442	170	792	...	38,172	711	142	...	40,548	881
TOTAL ATTENDANCES ...	18,155	7,067	2,395	...	59,717	3,888	1,646	396	81,913	11,351
8. Aggregate number of "In-patient days" of treatment given to persons who were suffering from ...	732	5,287	131	...	562	3,262	85	36	1,510	8,585
For detection of										For Wassermann Reaction.
Spirochetes.				Gonococci.		Other Organisms.				
31				2,929		...		...		
80				2,385		3		3,737		
9. Examinations of Pathological material:—										
(a) Specimens which were examined at, and by the Medical Officer of, the Treatment Centres ...										
(b) Specimens from persons attending at the Treatment Centres which were sent for examination to an approved laboratory ...										

## HOSPITAL ADMINISTRATION.

During the year 1926 the City Infectious Hospitals and Sanatoria were in full commission.

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

City Hospital North	...	...	...	...	168 beds.
„ South	...	...	...	...	101 „
„ East	...	...	...	...	156 „
„ Fazakerley	...	...	...	...	300 „
„ Fazakerley Annexe	...	...	...	...	160 „
„ Sparrow Hall	...	...	...	...	130 „
Fazakerley Sanatorium	...	...	...	...	264 „
Highfield Sanatorium	...	...	...	...	336 „
					<hr/>
					1,615 „
					<hr/>

At the City Hospital, Fazakerley, 72 beds are set aside for the treatment of tubercular patients, in addition to the beds at the Fazakerley Sanatorium.

During the year the beds in the city hospitals were well occupied, requests being received for the admission of a great many cases of measles, whooping cough, chickenpox and other ailments of children. Many of these patients were removed from houses which were sub-let and contained several families. The city hospitals have proved of great benefit during the housing difficulties, when many families are occupying one or two rooms, where effectual isolation of a case of infectious sickness is practically impossible.

At the request of the Health Committee a few beds were set aside at the Fazakerley Hospital for the treatment of infants suffering from diarrhœa during the summer months (see page 53). This practice has been followed in previous years, and has been found of great value in dealing with cases of infantile diarrhœa in some of the most congested districts in the City. The number of cases admitted was 17.

Scarlet fever and diphtheria were both prevalent throughout the year, and a number of beds were also required for cases of encephalitis lethargica.



The value of the hospitals, and the immense amount of useful work performed, is shown by the fact that no less than 6,654 patients were treated within their walls during the year.

The Hospitals Committee have agreed with 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.

## THE HOSPITAL SERVICE.

### FAZAKERLEY HOSPITALS AND SANATORIUM.

#### REPORT OF THE MEDICAL SUPERINTENDENT.

YEAR ENDING 31ST DECEMBER, 1926.

The total number of patients admitted to the Fazakerley Hospitals (excluding the Fazakerley Sanatorium) during the year ending 31st December, 1926, shows a decrease of 500 as compared with that of 1925. The number of cases under treatment reached a maximum of 477 on March 28th, a decrease of 113 upon the highest figure for the previous year. The following figures represent the gross monthly admissions:—

		Fazakerley Isolation Hospital.		Fazakerley Annexe Hospital.		Sparrow Hall Hospital.		Total.
January	...	172	...	38	...	53	...	263
February	...	190	...	58	...	75	...	323
March	...	200	...	76	...	82	...	358
April	...	177	...	53	...	63	...	293
May	...	233	...	48	...	49	...	330
June	...	200	...	84	...	90	...	374
July	...	168	...	57	...	37	...	262
August	...	109	...	43	...	25	...	177
September	...	117	...	49	...	56	...	222
October	...	159	...	55	...	21	...	235
November	...	130	...	45	...	27	...	202
December	...	137	...	51	...	39	...	227
Total	...	1,992	...	657	...	617	...	3,266



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

## ANALYSIS OF CASES DYING WITHIN 48 HOURS OF ADMISSION

Disease.	Age.	Days ill prior to admission.	No. of hours in hospital
Scarlet fever...	6 years	2	25
Diphtheria ...	6 "	4	36
Do. ...	1 "	1	33
Do. ...	3 "	2	31
Do. ...	4 "	5	9
Measles ...	2 "	4	35
Do. ...	2 "	20	14
Do. ...	3 "	12	1
Do. ...	27 "	11	2
Do. ...	3 "	21	27
Typhoid fever ...	28 "	12	30
Pertussis ...	7 months	5	38
Do. ...	3 years	5	37
Do. ...	3 "	8	22
Do. ...	2 "	13	38
Do. ...	9 months	14	6
Do. ...	6 "	28	22
Do. ...	6 "	21	31
Do. ...	5 years	42	8
Do. ...	1 "	14	19
Lobar pneumonia ...	6 months	10	37
Do. ...	3 years	2	10
Do. ...	1 "	3	9
Broncho-pneumonia ...	6 months	8	7
Do. ...	1 year	21	7
Do. ...	1 "	6	28
Erysipelas ...	48 years	4	36
Do. ...	57 "	3	38
Do. ...	10 "	3	23
Do. (after operation) ...	3 "	2	32
Tubercular meningitis ...	16 "	14	38
Do. ...	13 "	12	42
Encephalitis lethargica ...	14 "	28	1½
Do. ...	51 "	42	47
Do. ...	30 "	56	19
Valvular disease of heart ...	45 "	56	2½
Do. ...	56 "	28	13
Pemphigus neonatorum ...	19 days	2	8
Ulcerative stomatitis ...	41 years	14	42
Streptococcal pharyngitis ...	31 "	11	17
Nephritis (Acute) ...	13 "	6	25
Cerebral hæmorrhage ...	64 "	2	32

## DIPHTHERIA.

A consideration of the figures relating to this disease during the past year reveals a somewhat striking diminution in the mortality, and this fact is the more noticeable when viewed in the light of the decrease in the numbers of true, or verified, cases of the sickness.

The chance of recovery from diphtheria is governed by a series of variable factors, principal amongst which are, the age of the patient, the site of the infection, the constitutional effect of the poison upon the patient, and the duration of the illness before the patient's arrival at the hospital for serum treatment.

Of these four, the first three are of such a nature as to be ordinarily uncontrollable. The fourth, however, it is perhaps possible to influence to some extent with substantial benefit to the patient. The earlier the serum is given, the sooner is the effect of the diphtheria toxin restricted, and counteracted, and hence the better the prospect of recovery. The average medical man can recall many cases of diphtheria which have unfortunately died, but which would have undoubtedly escaped this fatal issue had his services been sought earlier.

In reviewing the cases in the year, the age, the site, and the constitutional effect have not markedly deviated from those of other years, any modification has rather been towards the view that severe infections have been numerically more. Yet, despite these facts fewer cases died. This encouraging result is due to the sufferers being sent in to hospital earlier, a deduction amply proved by a study of the history of the patients.

Undoubtedly the general public is becoming better educated to the dangerous nature of the disease, and appreciates more fully the advantages of early hospital treatment. As a direct consequence, the medical practitioner is called in sooner, and the case, thanks to his prompt recognition and action receives treatment sufficiently early to brighten very considerably the prospects of a complete recovery.



## OTHER DISEASES.

The appended table is of interest as indicating the extent to which the Fazakerley Isolation Hospital has been used for the treatment of cases other than those classified in the scheduled tables.

Cases treated during the year ending 31st December, 1926 :—

		Died			Died
Cerbero-Spinal Fever ...	13	10	Dermatitis ...	8	—
Encephalitis Lethargica ...	46	7	Eczema ...	2	—
Poliomyelitis (Acute) ...	1	—	Impetigo ...	14	—
Paratyphoid Fever, A ...	1	—	Herpes Zoster ...	1	—
Do B ...	3	—	Ichthyosis ...	2	—
Mumps ...	74	—	Milium Rubrum ...	1	—
Rubella ...	177	—	Sudamina ...	9	—
Varicella ...	206	—	Pemphigus ...	5	—
Diphtheria and Measles ...	3	—	Pemphigus Neonatorum ...	1	1
Scarlet Fever and Varicella...	8	—	Enteritis ...	6	—
Scarlet Fever and Pertussis...	2	—	Enteritis Infective ...	14	2
Scarlet Fever and Diphtheria	5	—	Intussusception ...	1	1
Measles and Pertussis ...	9	2	Appendicectomy ...	2	—
Rubella and Pertussis ...	1	—	Appendicitis ...	1	—
Typhoid Fever and Pertussis	1	—	Gastritis ...	1	—
Varicella and Measles ...	8	—	Jaundice ...	1	—
Glandular Fever ...	1	—	Adenitis (Lymphatic) ...	2	—
Vincent's Angina ...	5	—	Adenitis (Suppurative) ...	1	—
Anthrax ...	6	—	Gingivitis (Purulent)...	2	—
Erysipelas ...	241	16	Periodontitis ...	1	—
Cellulitis ...	14	—	Alveolar Abscess ...	1	—
Gangrenous Cellulitis ...	2	2	Abscess, simple ...	1	—
Carbuncle ...	2	—	Abscess ...	1	—
			(Antrum of Highmore)		
Furunculosis ...	5	—	Rheumatism ...	1	—
			(Acute Articular)		
Septicaemia (Staphylococcal)	1	—	Parotiditis ...	1	—
Laryngitis ...	5	—	Mastoiditis ...	2	—
Tonsillitis ...	149	—	Nephritis ...	3	2
Pharyngitis ...	7	—	Valvular Disease of Heart ...	2	2
Pharyngitis (Streptococcal)	1	1	Thrombosis ...	1	—
Stomatitis ...	1	—	Scald ...	1	—
Ulcerative Stomatitis ...	1	1	Sarcoma of Tonsil ...	1	—
(Toxaemia)					
Broncho-Pneumonia ...	25	9	Cerebral Haemorrhage ...	1	1
Lobar Pneumonia ...	22	5	Hemiplegia ...	1	—
Bronchitis ...	22	—	Meningismus ...	2	—
Empyema ...	1	—	Tubercular Meningitis ...	15	15
Influenza ...	2	—	Tuberculosis, Pulmonary ...	3	—
Scabies ...	7	—	Tuberculosis, Miliary ...	1	—
Urticaria ...	3	—	Tubercular Abscess of sternum	1	1
Erythema ...	23	—			

## TUBERCULOSIS.

## SANATORIUM SCHOOL.

The average daily number of children receiving instruction by teachers during the year was:—

(1) Pulmonary, negative sputum	...	...	34
(2) Pulmonary, positive sputum	...	...	24
(3) Non-pulmonary	...	...	2

The experience of the year has again emphasised the definite therapeutic value of educational methods when applied to physically defective children. Oral teaching in the very young, and manipulative instruction in elder children, provide a stimulus and interest which contribute largely towards recovery. Consecutive teaching is, however, scarcely possible in children with active tuberculous lesions whose short attendance is necessarily intermittent and uncertain, and individual, rather than class, instruction is essential in a high proportion of such cases.

The following remarks are submitted by the head teacher:—

The period of individual school attendances varies considerably—according to the time pupils are resident in the sanatorium. Often the attendance is erratic because it is dependent on the health of the pupil. Owing to this, and the constant changing of the children, definite results from the school's work may not always be clearly seen.

Half the school hours are devoted to reading, writing, and arithmetic. Craftwork, gardening, sewing, and cookery make up an important part of the rest of the school work.

Craftwork includes raffia and leather work. In the latter craft three pupils entered for a leather competition open to schools in England and the Colonies, and two of them gained a certificate of merit.

Lessons in the open air, and walks, are taken when weather is favourable. During these walks, talks are given on flower and plant life, and specimens collected.

Each pupil has a rest period during school hours. A suitable kind of floor bed is provided for the purpose of lying down.



Early in the year an additional room was allocated to the school for the purpose of giving cookery lessons. The great interest taken by the girls in this subject is shewn by the fact that on discharge not one girl has failed to ask to be allowed to take home her cookery note book.

During the year the school work in the wards has been of a good standard. The advance upon last year's work has made an appreciable difference to the senior girls, most of whom have made useful garments for their personal use.

The younger ward scholars have progressed very well, and those who have had arc-light treatment seem to have made greater progress than before.

In December the school children gave a very successful Comic Opera, entitled "Ali Baba." The subject was heartily taken up and gave the children much enjoyment both in rehearsal and presentation.

#### X-RAY DEPARTMENT.

During the year 977 screen examinations have been made, and 373 films taken. The increase in the number of films taken as compared with previous years has resulted from the practice of relying on radiographs rather than on screening in the differential diagnosis of lung conditions. Additional expenditure has been incurred in the use of films, but this has been more than justified in that numerous doubtful cases have been definitely proved negative and so excluded from treatment.

The following summary indicates the regions of the body comprised in the 373 films taken :—

Thorax	...	...	...	128	Shoulder	...	...	...	10
Spine	...	...	...	70	Ankle	...	...	...	17
Pelvis	...	...	...	35	Kidneys	...	...	...	11
Hip	...	...	...	20	Miscellaneous	...	...	...	54
Knee	...	...	...	28					

X-rays have not been used in treatment during the year, better results in suitable cases being obtainable in the Light Department.

#### ARTIFICIAL LIGHT TREATMENT.

The following particulars have been recently returned to the Ministry of Health on this subject :—

The installation comprises 2 carbon-arc lamps in parallel, each 75 amps, the current being 70 volts direct.

Tuberculosis patients only are receiving treatment, coming within the undermentioned categories:—

1. Pulmonary only	...	...	...	...	...	62
2. Pulmonary with tuberculosis of other organs—						
(a) Lungs and peritoneum	...	...	...	...	...	3
(b) Lungs and joints	...	...	...	...	...	3
(c) Lungs and bones	...	...	...	...	...	4
(d) Lungs and scrofuloderma	...	...	...	...	...	2
(e) Lungs and Genito-urinary	...	...	...	...	...	1
3. Non-pulmonary—						
(a) Bones	...	...	...	...	...	5
(b) Bones and joints	...	...	...	...	...	1
(c) Bones and skin	...	...	...	...	...	6
(d) Joints	...	...	...	...	...	10
(e) Joints and Genito-urinary	...	...	...	...	...	1
(f) Joint, bone, and skin	...	...	...	...	...	1
(g) Joint, skin, and peritoneal	...	...	...	...	...	1
(h) Genito-urinary, and bone	...	...	...	...	...	1
(i) Genito-urinary	...	...	...	...	...	4
(j) Intestine	...	...	...	...	...	3
(k) Peritoneum	...	...	...	...	...	4
(l) Glands	...	...	...	...	...	1

#### RESULT OF TREATMENT.

Pulmonary only. 62 cases were treated, including 6 adults with positive sputum, 28 of these have been discharged, of whom 25 were improved (all sputum negative cases). Three sputum positive cases showed no improvement on discharge. Of 34 cases still in hospital, 29 show improvement, including 3 cases with positive sputum. The majority of pulmonary lesions treated have been in children.

Pulmonary, with tuberculosis of other organs. 13 cases were treated, 8 of these have been discharged improved, 1 has died, and 4 remain in hospital improving. In the fatal case physical signs of disease were



present in both lungs, although sputum examinations were negative, and bacteriological examinations of pus from sinus and abscess formations, resulting from spinal and hip lesions, failed to reveal any tubercle bacilli. The right kidney was enlarged, and the urine contained bacillus coli, staphylococci, streptococci, and hyaline casts. Autogenous vaccine therapy, and injection of sinuses with B.I.P. were tried. No beneficial result was obtained. Radiation by carbon arc was attempted as a last resource. 28 exposures extending over a period of two months made no material improvement.

Non-pulmonary. Out of a total of 38 cases treated, 9 were discharged improved, and 1 not improved, the latter being a case of faecal fistula resulting from a laparotomy four years previous to admission. In this case no appreciable variation in an afebrile temperature was observed throughout the first six exposures. An occasional rise varying from  $0.6^{\circ}$ — $1^{\circ}$  occurred as the result of exposure during the remainder of the treatment, which was abandoned after 26 exposures extending over a period of two months. At a later stage local radiation by the Tungsten Arc was attempted. No beneficial result was obtained. Of the remaining patients in this group one died under treatment, four exposures only had been given, the case being one of extensive involvement of the genito urinary tract. 27 patients are still under treatment, 23 of whom are improving.

The general routine of treatment followed has been similar to that of the previous year, and described in the annual report for 1925.

The average total number of exposures for all cases is 45, the average total exposures in hours being 30. The greatest number of exposures is usually made in surgical cases.

Temperature was recorded in all cases. A slight rise was observed in 62.5 per cent, a slight fall in 18.3 per cent., and no appreciable change in 19.2 per cent. In cases which showed any temperature variation this was chiefly confined to the first few weeks of exposure, temperature variation during the later periods of treatment being nil, or negligible. In 12 cases the temperature was febrile at the beginning of treatment; in 4 of these the temperature was normal after approximately a fortnight's treatment; in the remaining cases the variations in the

temperature readings became gradually less, and a few ultimately became afebrile. The systolic blood pressure was determined in all cases. A slight decrease was observed in 48 per cent., a slight increase in 20 per cent., and no change in 32 per cent. A change of pressure when present in either direction was only transitory.

#### TUNGSTEN ARC.

On 20th March, 1926, one hand feed arc lamp for tungsten electrodes operated by continuous current supply of 5 amps at 230 volts was installed. This lamp is used for local treatment only.

#### CASES TREATED.

##### Tuberculosis only.

Pulmonary and laryngeal	...	...	...	...	1
Scrofuloderma	...	...	...	...	2
Scrofuloderma and bones	...	...	...	...	4
Scrofuloderma and Genito-urinary	...	...	...	...	1
Bone and joint	...	...	...	...	5
Bones	...	...	...	...	7
Peritoneal and joint	...	...	...	...	1
Lupus	...	...	...	...	1
Genito-urinary	...	...	...	...	1
Anal Fistulae	...	...	...	...	1
Glands	...	...	...	...	1
Abdominal Fistulae	...	...	...	...	1
Papillomatous cutaneous tuberculosis of the hand	...	...	...	...	1

The exposure necessary to produce an erythema in a normal unexposed skin having been determined, the initial dose given is 25 per cent.—50 per cent. of such an exposure. This procedure is adopted in order that allowance may be made for the varying degrees of sensitiveness of different areas of the body. The initial dose is increased



until an erythema is produced. Each tuberculous skin focus is radiated as well as the healthy adjacent skin over an area of a few c.m.s. Radiations are repeated when the previous reaction has subsided. The production of a persistent hyperaemia around the tuberculous focus is not attempted.

The average number of exposures for all cases was 57, the duration of treatment being 95 days, or expressed in actual exposure time 5 hours 26 minutes.

The body temperature was recorded in 17 instances, and was found to be raised in 16 of these as the immediate result of exposure, remaining unchanged in one. Two cases developed a febrile temperature during the course of treatment, one being a case of extensive bone disease with multiple sinuses, the other an advanced case of pulmonary and laryngeal tuberculosis.

Radiation with the tungsten arc has been chiefly beneficial in the treatment of cutaneous tuberculosis. Tuberculous ulcers in the skin secondary to tuberculosis of glands and bones have also derived much benefit. The stimulating effect on the development of granulations in open wounds resulting from surgical removal of infected areas has hastened the process of healing.

In a few cases sinuses have been injected with a Bismuth Iodoform and Paraffin paste in an endeavour to combine asepsis and drainage over a long period and so obviate the retention of pus due to the external closure of the sinus which is liable to occur under the stimulus of light treatment. General radiation by the carbon arc combined with local radiation has been adopted in some cases, and has apparently shortened the period of treatment.

#### SURGICAL.

The undernoted table has reference to the surgical work and shews result of treatment in 48 cases discharged during the year 1926.

(ADULTS ONLY).

Part affected.	Number of cases.	Average stay in hospital in months.	RESULT.			
			Quiescent.	Improved.	Not improved.	Died.
WITH PULMONARY DISEASE.						
Bones and joints ...	14	31.4	7	3	—	4
Abdomen ...	1	1	—	—	—	1
Genito-urinary system	2	3.5	—	—	—	2
Lymphatic glands ...	1	32	—	—	—	1
Miscellaneous ...	2	16.5	1	1	—	—
TOTAL ...	20		44.4%			44.4%
WITHOUT (KNOWN) PULMONARY DISEASE.						
Bones and joints ...	13	20.2	7	3	2	1
Abdomen ...	7	15.3	3	2	1	1
Genito-urinary system	2	38	—	—	1	1
Lymphatic glands ...	4	11.5	2	—	2	—
Miscellaneous ...	2	9	2	—	—	—
TOTAL ...	28		50%			10.7%

## DENTAL WORK.

During the year the following work was carried out :—

64 Fillings.

184 Extractions under local anæsthetic.

3 Extractions under gas.

4 Extractions without an anæsthetic.

33 Scaling, and miscellaneous operations.



## OCCUPATION LIST.

## MALES.

Labourer ... ..	49	Commercial traveller ... ..	3
Clerk ... ..	23	Cotton porter ... ..	3
Dock labourer ... ..	19	Greaser ... ..	3
Sailor ... ..	16	Hairdresser ... ..	3
Carter ... ..	10	Machinist ... ..	3
Marine fireman ... ..	9	Scaler ... ..	3
Ship's steward ... ..	9	Shoemaker ... ..	3
Motor driver ... ..	7	Cooper ... ..	2
Shop assistant ... ..	6	Compositor ... ..	2
Warehouseman ... ..	6	Hotel porter ... ..	2
Ship's engineer ... ..	5	Policeman ... ..	2
Painter ... ..	5	Printer ... ..	2
Messenger boy ... ..	5	Railway porter ... ..	2
Barman ... ..	4	Sheetmetal worker ... ..	2
Joiner ... ..	4	Soldier ... ..	2
French polisher ... ..	4	Tobacco worker ... ..	2
Tailor ... ..	4		

## FEMALES.

Housewife ... ..	19	Laundress ... ..	4
Housemaid ... ..	10	Waitress ... ..	4
Shop assistant ... ..	5	Machinist ... ..	3
Tobacco worker ... ..	5	Millworker ... ..	2
Clerk ... ..	4	Packer ... ..	2

**HIGHFIELD SANATORIUM.**

REPORT OF THE MEDICAL SUPERINTENDENT

FOR THE YEAR 1926.

Of the 536 cases admitted during the year, 329 were males and 207 females, the age periods being as follows :—

Under 5	5-10	10-20	20-30	30-40	40-50	50 upwards
1	7	80	130	121	129	68

It is gratifying to note that there has been a gradual increase in the proportion of patients who are prepared to prolong their stay in sanatorium for a reasonably sufficient length of time, and during the last year this feature has been particularly satisfactory, more especially on the male side. A larger variety in the forms of occupational treatment has doubtless in part contributed to this improvement, which has not been so effective on the female side on account of the needs of the home and children in the case of the married women.

**SCHOOL.**—The average number of children on the school roll during the year was 42. The ages varied between 5 and 16 years. New pupils numbered 20, and again it must be noted that these usually very backward children frequently make rapid progress in their school work : and that attendance at the school has a noticeably beneficial effect on their health and spirits. During the year more attention has been paid to hand-work, physical exercises, and nature study.

**DENTAL TREATMENT.**—During the year 246 cases were seen by the dental surgeon. In 159 of these cases extractions of teeth were performed. In a number of the remainder scaling, temporary filling, or other work was carried out.



## REPORT ON TRAINING OF NURSES.

## GROUP II. HOSPITALS.

In 1924 the four Hospitals—City Hospital South, East, North, and Highfield Sanatorium—were grouped for the training of probation nurses, under the supervision of the medical superintendent of Highfield Sanatorium, and the appointment of a sister tutor to the group was made. (Up to that time, only the two first-named hospitals had been undertaking the training of probation nurses.) The group subsequently received the recognition of the General Nursing Council as a centre for the training of nurses under the scheme for the State Registration of Nurses (Fever Training).

In order to enable each nurse to have experience in the various infectious fevers and in tuberculosis, probation nurses are transferred for periods of six months at a time to other hospitals within the group. At each of the hospitals provision has been made for classrooms in which lectures are given, and which are available for use for individual study.

Notwithstanding the difficulties attendant on the separation of the hospitals by some distance from one another, it has been found possible to co-ordinate the nurses' training in the four hospitals so that instruction is given to groups of nurses, from different hospitals, in the same stage of study. To this end conferences are held at regular intervals, attended by the matrons of the respective hospitals, and the sister tutor, with the medical superintendent of Highfield Sanatorium.

From the autumn of 1924 until the end of 1926, 23 probation nurses in this group have passed the first State examination in nursing; and 13 have passed the final State examination in fever nursing. These figures represent 82 per cent. and 79 per cent., respectively, of those who entered for the examinations from within the group.

Preventive inoculation of probationer nurses against scarlet fever and diphtheria is now carried out in the hospitals of this group.

The following tables, prepared by the Medical Staff of each of the City Hospitals show the number of patients, the nature of the illness, and the results at each of the eight hospitals during the year 1926 :—

**CITY HOSPITAL NORTH, NETHERFIELD ROAD.**

*Visiting Physician, Dr. R. I. RICHARDSON.*

*Resident Physician, Dr. J. A. SCOTT.*

DISEASES.	Remaining Dec. 31st, 1925.	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.	105	800	—	905	—	91	726	82	1	6	0.75
Enteric Fever.	—	—	—	—	—	—	—	—	—	—	—
Diphtheria ...	1	—	—	1	—	—	1	—	—	—	—
Measles ...	—	7	—	7	—	—	7	—	—	—	—
Other Diseases	3	53	—	56	—	—	44	6	1	6	11.32
Isolation and Observation Cases ...	1	14	—	15	—	—	14	1	—	—	—
Totals ...	110	874	—	984	—	91	792	89	2	12	1.37



**CITY HOSPITAL SOUTH, GRAFTON STREET.**

*Visiting Physician, Dr. H. A. CLARKE.*

*Resident Physician, Dr. RITA HENRY.*

DISEASES.	Remaining Dec. 31st, 1925.	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.....	63	469	—	532	—	112	366	49	1	5	1.0
Diphtheria .....	—	1	—	1	—	—	1	—	—	—	—
Measles .....	10	305	—	315	—	—	275	23	2	17	5.5
Other Diseases.....	1	37	—	38	—	—	35	1	—	2	5.4
Isolation & Obser- vation Cases .....	4	17	—	21	—	—	18	3	—	—	—
Totals .....	78	829	—	907	—	112	695	76	3	24	2.9

**FAZAKERLEY SANATORIUM.***Medical Superintendent, Dr. C. RUNDLE.**Principal Resident Medical Officer, Dr. W. CRANE.**Assistant Resident Medical Officers, Drs. A. E. CONNOLLY and  
B. G. ELLIOTT.*

DISEASES.	Remaining Dec. 31st, 1925.	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.	Remaining at end of year	Died within 48 hours of Admission	Total Deaths
Tuberculosis .....	313	417	—	730	—	—	310	326	—	94
Isolation and Observation Cases ...	1	3	—	4	—	—	4	—	—	—
	314	420	—	734	—	—	314	326	—	94

**CITY HOSPITAL, FAZAKERLEY ANNEXE.***Medical Superintendent, Dr. C. RUNDLE.**Assistant Resident Medical Officer, Dr. ELSIE BURNS.*

DISEASES.	Remaining Dec. 31st, 1925.	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.....	71	288	70	429	—	23	375	27	1	4	1.4
Enteric Fever .....	1	—	—	1	—	—	1	—	—	—	—
Diphtheria .....	19	168	—	187	—	4	149	25	1	9	5.3
Measles .....	—	107	10	117	—	12	84	16	—	5	4.6
Whooping Cough ...	—	—	—	—	—	—	—	—	—	—	—
Other Diseases.....	—	14	—	14	—	2	11	—	—	1	7.1
Isolation and Observation Cases	—	—	—	—	—	—	—	—	—	—	—
Totals .....	91	577	80	748	—	41	620	68	2	19	3.3



# CITY HOSPITAL, FAZAKERLEY.

*Medical Superintendent, DR. C. RUNDLE.*

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

*Assistant Resident Medical Officers, DRs. C. ABERNETHY and L. DENIL.*

DISEASES.	Remaining Dec. 31st, 1925.	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 .	35	207	48	290	—	15	230	40	—	5	2.4
Enteric Fever	—	20	—	20	—	—	17	—	1	3	15.0
Diphtheria.....	24	226	3	253	—	1	214	22	3	16	7.0
Smallpox .....	—	—	—	—	—	—	—	—	—	—	—
Measles .....	—	412	6	418	—	15	350	18	5	35	8.5
Whooping Cough.....	—	112	—	112	—	8	70	6	9	28	25.0
Phthisis .....	—	—	—	—	—	—	—	—	—	—	—
Other Diseases.	97	919	5	1021	—	7	855	84	22	75	8.1
Isolation and Observation Cases.....	1	34	—	35	—	1	32	2	—	—	—
Totals.....	157	1930	62	2149	—	47	1768	172	40	162	8.4

# CITY HOSPITAL EAST, MILL LANE, OLD SWAN.

Visiting Physician, DR. H. A. CLARKE.

Resident Medical Officer, DR. F. WEIGHTMAN.

DISEASES.	Remaining Dec. 31st, 1925.	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.....	40	74	—	114	8	—	104	1	1	1	1.3
Enteric Fever .....	—	—	—	—	—	—	—	—	—	—	—
Diphtheria.....	107	978	—	1085	—	—	907	111	27	67	6.8
Measles .....	—	—	—	—	—	—	—	—	—	—	—
Other Diseases .....	1	50	—	51	—	—	42	3	6	10	20.0
Isolation and Obser- vation Cases ...	—	22	—	22	—	—	22	—	—	—	—
Totals.....	148	1124	—	1272	8	—	1075	115	34	78	6.9

# CITY HOSPITAL, SPARROW HALL.

Medical Superintendent, DR. C. RUNDLE.

DISEASES.	Remaining Dec. 31st, 1925.	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.....	46	70	116	232	—	3	224	5	—	—	—
Enteric Fever .....	—	—	—	—	—	—	—	—	—	—	—
Whooping Cough...	—	21	12	33	—	—	29	3	—	1	4.8
Diphtheria. ....	—	49	2	51	—	2	41	7	—	1	2.0
Measles .....	—	11	14	25	—	—	25	—	—	—	—
Other Diseases .....	7	297	—	304	—	30	239	32	—	3	1.0
Isolation and Observation Cases	—	25	—	25	—	—	21	4	—	—	—
Totals.....	53	473	144	670	—	35	579	51	—	5	1.0



### HIGHFIELD SANATORIUM.

*Medical Superintendent, Dr. H. R. MACINTYRE.*

*Senior Resident Medical Officer, Dr. W. H. BROWN.*

<i>Assistant</i>	<i>do</i>	<i>do.</i>	<i>Dr. MARGT. FERRIER.</i>
	<i>do.</i>	<i>do.</i>	<i>Dr. O. F. THOMAS.</i>
	<i>do.</i>	<i>do.</i>	<i>Dr. D. WOODSON.</i>

DISEASE.	Remaining 31st Dec., 1925.	Admitted during the year.	Total under Treatment during the year.	Transferred to Convalescent Hospital	Transferred to other Sanatoria.	Discharged.	Remaining at end of year	Died within 48 hours of Admission	Total Deaths
Phthisis.....	319	536	855	—	—	390	318	4	147

## SANITARY ADMINISTRATION.

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For the purpose of carrying out the requirements of the various Sanitary Acts of Parliament and the Orders, Bye-laws and Regulations made thereunder, the following staff of the Medical Officer of Health's Department has been employed during the year.

	Males	Females
*Chief Sanitary Inspector ... ..	1	—
*Deputy Chief Sanitary Inspector ... ..	1	—
*Prosecuting Sanitary Inspectors ... ..	10	—
*District Sanitary Inspectors ... ..	34	—
<sup>1</sup> Food Inspectors ... ..	9	—
*Inspectors under the Food and Drugs, etc., Acts ...	3	1
* „ of Cowsheds and Milkshops ... ..	2	—
* „ under the Shops Acts ... ..	2	1
* „ „ Factories and Workshops Acts ...	4	—
(These Inspectors are also appointed under the Shops Acts)		
<sup>2</sup> Smoke Inspectors ... ..	3	—
<sup>3</sup> Inspectors of Common Lodging Houses and Houses let in Lodgings ... ..	16	—
*Inspectors of Canal Boats ... ..	1	—
<sup>3</sup> Ambulance and Disinfecting Superintendents and Inspectors ... ..	14	—
Motor Ambulance Drivers ... ..	7	—
Rat Catchers, &c.... ... ..	11	—
Men engaged stripping walls and spraying infected houses, limewashing middensteads, etc. ...	20	—
*Notice Servers ... ..	3	—
Chief Clerk ... ..	1	—
Clerical Staff (Permanent) ... ..	33	—
„ „ (Temporary) ... ..	1	1
„ „ (Health Visitors, etc.) ... ..	—	6
„ „ (Tuberculosis Branch) ... ..	2	11
<sup>4</sup> Health Visitors, School Nurses, etc. (Permanent) ...	—	75
<sup>4</sup> „ „ „ „ (Temporary) ... ..	—	14
<sup>5</sup> Inspectors under the Midwives Act ... ..	—	2
<sup>6</sup> Ophthalmia Neonatorum Nurses ... ..	—	2



	Males	Females
Superintendent and Assistants at Infant Milk Centres		
(Permanent) ... ..	1	12
Temporary Assistants at Infant Milk Centres ...	4	30
<sup>7</sup> Nurses at Tuberculosis Institutes ... ..	—	7
Caretakers at Tuberculosis Institutes ... ..	2	—
„    Ford Street Mortuary ... ..	—	1
„    City Laboratories ... ..	1	—
Cleaners at City Laboratories ... ..	—	6
Staff at Seamen's Dispensary ... ..	3	1
Women engaged cleansing verminous children ...	—	3
<i>Day Nurseries, Maternity Home and Clinics.</i>		
Matrons ... ..	—	8
Deputy-matrons ... ..	—	8
Nurses and probationers ... ..	—	45
Domestic staff, including Gardeners and Cleaners ...	3	60
Seamstresses ... ..	—	3
<hr/>		
Total number of staff ... ..	192	297
<hr/>		

In every case officers are selected for these positions whose previous training and occupation have been such as to fit them for the special duties they are called upon to discharge. Those marked \* are required to hold a certificate affording evidence of adequate sanitary instruction. <sup>1</sup> Have special training in each branch of the work, *i.e.*, Butchers, Fishmongers, Fruiterers, &c., are also certificated. <sup>2</sup> Hold Marine Engineer's First Class Certificates. <sup>3</sup> All hold the certificate of the Liverpool University School of Hygiene, the Royal Sanitary Institute or an equivalent thereto. <sup>4</sup> Fully-trained and Certificated Nurses or other special qualifications. <sup>5</sup> Registered Midwives with special qualifying certificates. <sup>6</sup> Fully-trained Nurses with special training in Ophthalmia Neonatorum. <sup>7</sup> Fully-trained Nurses. The additional certificates usually held by the Health Visitors' Staff, in addition to the certificate of training as a nurse are those of the Central Midwives' Board, the Liverpool University School of Hygiene, the Royal Sanitary Institute, and, or, the Sanitary Inspectors' Examination Board.

### COMPLAINTS OF NUISANCES.

In all complaints of nuisances the district sanitary inspector visits the same day as he receives the complaint, and on his report an informal notice is served upon the person responsible for the nuisance. If the informal notice is not complied with the matter is referred to the prosecuting inspector, upon whom is placed the responsibility of seeing that the nuisance is abated.

The number of occasions upon which the advice and assistance of the Health Department have been sought has increased during the year. These applications fluctuate year by year; in 1910 they were 9,354; in 1920, 18,730; in 1921, 20,688; in 1922, 18,934; in 1923, 17,900; in 1924, 18,626; in 1925, 19,075, and in 1926, 20,514. As in former years, a complaint in many cases was made to the department only after repeated requests addressed to the persons causing or allowing the nuisance, or to the owners or agents of property, had been ignored. A great deal of the time of the inspectors was taken up by these special examinations.

Requests to examine important public buildings and offices, as well as highly rented dwelling-houses, are numerous, and the application of the smoke test has in many cases brought to light defects in the drainage system.

Last year 27,398 nuisances were discovered as the result of complaints. Preliminary notices were served either on the owners or occupiers to remedy 22,138 nuisances. The remaining 5,260 nuisances came within the province of other departments, and were referred to those departments to be dealt with.

### HOUSE-TO-HOUSE INSPECTION.

One of the most important duties placed upon Sanitary Authorities is that of house-to-house inspection. The Public Health Act provides that this should be done systematically, and the importance of the work is indicated by the extent to which house-to-house inspection is done within the city.

The value of the work is also recognised by owners of property who prefer that they should receive all notices at the same time, thus avoiding the unnecessary expenditure which would result if the notices were served at different periods.



In the course of house-to-house inspection 64,505 nuisances were discovered, to remedy which preliminary notices were served on either the owner or the occupier. A number of defects were also referred to other departments.

On re-inspection, the number found not abated was 22,600, 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.

The following table shows the number of nuisances found by the district sanitary inspectors, and the character of the proceedings taken by the prosecuting sanitary inspectors to abate the nuisances, with the results :—

Number of complaints made by inhabitants ...	...	...	20,514
<hr/>			
„ nuisances discovered on above complaints ...	...	27,398	
„ „ „ on house-to-house inspection	...	64,505	
<hr/>			
Total nuisances ...	...	91,903	
<hr/>			
„ notices issued (owners) ...	...	64,177	
„ „ (occupiers) ...	...	295	
<hr/>			
Total notices ...	...	64,472	
<hr/>			
„ visits to premises under observation ...	...	9,273	
„ incidental calls ...	...	30,760	
<hr/>			
Total ...	...	40,033	
<hr/>			
„ special nuisances referred to prosecuting inspectors ...	...	22,138	
„ ordinary nuisances referred to prosecuting inspectors ...	...	21,810	
<hr/>			
Total ...	..	43,948	
<hr/>			

Number of visits made by prosecuting inspectors—special					
reports ... ..					35,771
,, visits made by prosecuting inspectors—ordinary					
reports ... ..					28,356
Total ... ..					64,127
,, re-inspection of nuisances ... ..					
106,279					
,, nuisances abated on first re-inspection ... ..					
37,112					
,, notes sent to comply with notices... ..					
4,634					
,, re-tests of drains after compliance with notices... ..					
8					
,, informations laid ... ..					
220					
,, magistrates' orders ... ..					
95					
,, fined ... ..					
9					
,, acquitted or withdrawn ... ..					
116					

For visitations in house to house inspection see page

#### OFFENSIVE TRADES.

There are at present within the city 62 premises in which offensive trades are carried on, an analysis of the trades being as follows:—

Trade.	No. of premises.
Fat melting ... ..	10
Soap boiling ... ..	11
Tripe boiling ... ..	7
Tanneries ... ..	5
Gut scraping ... ..	5
Knackers' yard ... ..	2
Fellmongers ... ..	2
Bone boilers ... ..	2
Rabbit skin stores ... ..	2
Resin burning ... ..	2
Oil refiners ... ..	1
Fertilisers ... ..	2
Palm oil, etc. ... ..	2
Hides and skins ... ..	1
Lard compound ... ..	1
Dripping ... ..	7

During the year five applications to carry on offensive trades were considered by the Health Committee, of this number three were granted and two declined.



When permission is granted, conditions are imposed requiring that the premises be put in order to the satisfaction of the City Engineer, Building Surveyor and Medical Officer of Health, that no public or private nuisances be caused, and that the business be discontinued whenever the Council shall so require.

The number of inspections of premises where offensive trades are carried on was 1,529.

#### DETAILS OF VISITS.

Number of visits to	Bone boilers	...	...	...	...	64
"	Bone stores	...	...	...	...	69
"	Cotton seed oil works	...	...	...	...	1
"	Destructors	...	...	...	...	14
"	Dripping factories	...	...	...	...	190
"	Fat and tallow melters...	...	...	...	...	455
"	Fellmongers	...	...	...	...	14
"	Fertiliser works...	...	...	...	...	32
"	Fish oil works	...	...	...	...	—
"	Gut scrapers	...	...	...	...	131
"	Ham cooking and potted meat works...	...	...	...	...	2
"	Hide and skin works	...	...	...	...	38
"	Knackers' yard	...	...	...	...	96
"	Lard refiners	...	...	...	...	4
"	Oleo-margarine works	...	...	...	...	6
"	Paint and resin works	...	...	...	...	4
"	Palm oil works	...	...	...	...	4
"	Patent manure works	...	...	...	...	1
"	Rabbit skin stores	...	...	...	...	35
"	Rubber works	...	...	...	...	1
"	Soap boilers	...	...	...	...	138
"	Sulphuric acid works	...	...	...	...	2
"	Tanneries	...	...	...	...	62
"	Tar and naphtha works	...	...	...	...	16
"	Tripe boilers	...	...	...	...	150
Total						1,529

## FACTORY AND WORKSHOP ACT, 1901.

## FACORIES, WORKSHOPS, AND WORKPLACES.

All factories, workshops and workplaces are systematically visited by four inspectors appointed under the Act, the various premises being grouped in districts so as to secure the maximum number of visits in the minimum time.

Total number of Factories	...	...	...	...	2,412
„ Workshops	...	...	...	...	3,574
„ Workplaces	...	...	...	...	350
„ visits to Factories (including Factory Bakehouses)	...	...	...	...	4,004
„ visits to Workshops (excluding Workshop Bakehouses)	...	...	...	...	6,720

## BAKEHOUSES.

During the past 26 years there has been a gradual but marked decline in the use of underground bakehouses, and since the passing of the Factory and Workshop Act, 1901, 325 underground bakehouses have been closed.

Many causes have led to the closing of underground bakehouses, but the main cause has been due to the retirement of the small master baker, the merging of smaller businesses into larger firms, the business competition of larger firms, and the centralisation of baking in well equipped up-to-date factories, provided with modern baking appliances. In a few instances, bakehouses have been closed owing to the premises having been acquired and used for other purposes.

During the year 4,337 visits were paid to bakehouses.

Number of bakehouses on register, 31st December	...	...	595
„ special visits to bakehouses on complaints	...	...	52
„ ordinary visits to bakehouses	...	...	3,783
„ re-inspections of incorrect premises	...	...	502
Total visits	...	...	4,337



Number of occasions on which bakehouses were found					
	incorrect	...	...	...	427
„	sanitary defects found	...	...	...	386
„	notices issued	...	...	...	163

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

#### HOMework.

In accordance with the provisions of the Act, outworkers returns are received twice yearly, and the premises referred to in the returns are visited by the district sanitary staff to ascertain (a) that the sanitary condition of the premises is satisfactory, and (b) to ascertain if the premises are used as "workshop" or "domestic workshop." The following statement shows the work undertaken during the year, viz. :—

Number of outworkers' returns received	...	...	...	322
„ visits to premises	...	...	...	340
„ premises incorrect	...	...	...	Nil.

#### RESTAURANT KITCHENS.

All kitchens in connection with cafés and restaurants are systematically visited, particular attention being paid to the cleanliness of the premises and of the workers employed in the kitchen.

Total number of visits during the year	...	...	...	1,476
Number found incorrect...	...	...	...	108

#### INSPECTION OF STABLES AND REMOVAL OF MANURE.

Stables within the city are systematically visited by two inspectors, who devote a great portion of their time to the work, constant attention being paid to the frequent removal of the manure and general sanitation.

A leaflet is served on the occupiers of stables intimating the grave danger to public health which may arise from flies, and the necessity to adopt all possible precautions and attack their breeding places. The co-operation of the occupiers of all stables is asked, in order that the means adopted by the Health Committee for the extermination of flies may be successful, and as a result, in a large number of cases, middensteads have been dispensed with, the manure being removed daily by the City Engineer's Department.

The total number of visits to stables during the year was 11,273.

Middensteads in connection with stables are systematically sprayed with lime to check the breeding place of flies, and the number thus dealt with during the year was 15,509.

New byelaws have been approved of, and are expected to come into operation at an early date in connection with stables.

#### SHOPS ACTS, 1912, 1913.

In accordance with the provisions of the Shops Acts, a register of all shops within the city is kept up to date by systematic visitation. The Health Committee have made 15 half-holiday orders, and eight closing orders under the Act, and day and night visits are made to see that the provisions of these orders are carried out.

With regard to the half-holiday orders, the majority of the shops are closed at 1.0 p.m. on Wednesday.

The Shops (Early Closing) Acts, 1920-1, is also administered by the officers appointed under the Shops Acts.

The shops inspectors, in addition to their duties under the above Acts, are also concerned in the provision of sanitary conveniences in shops, and the carrying out of that portion of the Public Health (Meat) Regulations which have reference to the sanitary condition of premises in which meat is sold or exposed for sale. They are also responsible for seeing that the shops are provided with suitable receptacles for trade refuse.

The officers of the Health Committee have received valuable assistance from the city police in carrying out the provisions of the Shops Acts and Orders made thereunder.

The female inspector, in addition to her duties under the Shops Acts, has also carried out the provisions of the order made by the Ministry of Health (Circular 325) with reference to "prohibition of the employment of women after childbirth." In this connection 816 visits have been made to factories and workshops within the city. In each case, the female overseer was interviewed and the requirements of the order explained



and, as a result of her visit and explanation of the order, it may be anticipated that every precaution will be taken to see that the provisions of the order are carried out.

#### SHOPS ACTS, 1912-13 AND SHOPS (EARLY CLOSING) ACTS, 1920-21.

During the year 463 complaints were received mainly in regard to the contravention of the Half-Holiday Order.

Number of complaints ...	...	...	...	...	...	463
„ visits by day ...	...	...	...	...	...	15,578
„ visits after 6 p.m. ...	...	...	...	...	...	305,425
„ informations ...	...	...	...	...	...	497
„ convictions ...	...	...	...	...	...	268
„ withdrawn ...	...	...	...	...	...	55
„ discharged cautioned ...	...	...	...	...	...	174

In addition to the above, it was found necessary to caution persons by letter for minor infringements of the Acts.

#### SHOPS' TRADE REFUSE.

Number of notices issued to provide bins for trade refuse ...	...	...	...	...	...	46
Number of bins provided ...	...	...	...	...	...	46

#### CELLARS.

In view of the serious shortage of housing accommodation there is a tendency to re-occupy cellars as separate dwellings, many of which have been closed for several years, consequently it is necessary to make an annual inspection of all cellars, and if any are found re-occupied, the usual notice is served.

#### EXAMINATION OF CELLARS AND CELLAR DWELLINGS.

Number of inspections of street cellars ...	...	...	...	26,507
„ found illegally occupied ...	...	...	...	223
„ of inspections of court cellars ...	...	...	...	225
„ of notices issued to cease letting or occupying ...	...	...	...	419

#### DEPARTMENTAL REFERENCES.

The co-operation which the Public Health Department receives from other departments of the Corporation is fully appreciated, and as a

result sanitary defects are brought to notice, and at once dealt with by the Sanitary Department. Were it not for this early intimation it is possible that defects might remain undiscovered until such time as the district inspector visits the premises in the course of house-to-house inspection.

#### REFERENCES FROM OTHER DEPARTMENTS.

From City Engineer ... ..	3,775
„ Water Engineer ... ..	4,118
„ Lodging-house inspector ... ..	11,570
„ Education Department (suspected infection in school children) ... ..	9,573

#### REFERENCES TO OTHER DEPARTMENTS.

The officers of the Health Department co-operate with other departments by referring to them matters which are outside the scope of the Health Department, such as waste of water, choked gullies, defective street and passage pavements, dangerous walls, floors and roofs.

To City Engineer ... ..	17,712
„ Building Surveyor ... ..	5,126
„ Water Engineer ... ..	9,248
„ Education Department (school children suffering from infectious diseases) ... ..	23,700
„ Other departments ... ..	1,177

#### RATS AND MICE (DESTRUCTION) ACT, 1919.

Active measures have been taken within the city throughout the year to ensure the destruction of as many rats as possible, and also to bring to public notice the necessity for reducing the rat population to the lowest possible dimensions. There are special reasons for a constant campaign against rats in Liverpool. The first being the possibility of the spread of plague, a disease which from time to time is brought into the port. The destruction and damage to property, foodstuffs, etc., by means of rats further justifies the stringent measures which are constantly being taken against these vermin. In this connection the co-operation of warehouse



owners and occupiers of rat-infested premises is always sought and obtained.

Ten rat-catchers are constantly engaged in the extermination of rats, four being engaged in connection with the extermination of rats in warehouses, which are visited every three months, in accordance with arrangements made with the Ministry of Health. For the purpose of systematic inspection the city has been divided into six districts, and the remaining six rat-catchers systematically visit cafés, fried fish shops, grocery shops, foodstores, bread shops, and all other places where rats are likely to be found. When a rat-catcher visits rat-infested premises, he operates for a few days, and by so doing indicates to the occupier methods whereby the occupier himself can help in the extermination of rats. In the event of the occupier failing to take action a notice is served under the Rats and Mice (Destruction) Act, 1919.

The assistance given by the rat-catchers is appreciated by occupiers and owners of premises, who are always willing and anxious to do what they can in the extermination of rats.

To save the time of the rat-catchers and to provide for the destruction of the rats as quickly as possible, each rat-catcher is met at a certain place each morning, the rats being collected and labelled in the minimum time and a proportion of the rats taken the same day for examination by the City Bacteriologist.

The City Engineer's Department in previous years has done valuable work in catching rats in public sewers, and these rats are also collected and dealt with in the same way.

Copies of the memorandum prepared by the Medical Officer of Health as to the destruction of rats have been widely circulated, and postcards are left with the warehouse keepers so that the information may be at once obtained in the event of any unusual mortality amongst rats.

An office record is kept indicating the number of complaints received and a register of all premises visited, the rat-catcher enters in his daily report book full details of the day's work.

It has not been found necessary to take proceedings for non-compliance with the provisions of the Act.

To ascertain from time to time the condition of the city in regard to rat infestation a weekly return is obtained from all the officers employed by the health department, who in the ordinary course of their daily duties visit different types of premises, and at the same time make inquiries in regard to the presence of rats. In the event of an intimation that rats exist in premises, the rat-catcher at once visits.

#### SUMMARY OF RAT INVESTIGATIONS.

Number of visits to warehouses searched by rat catchers...	9,269
„ rats caught ... ..	6,039
„ shops, foodstores, cafés, etc., visited and searched by rat catchers ... ..	19,866
„ rats caught ... ..	4,364
„ rats caught by city engineer (sewerage dept.)..	4,626
„ rats caught in public markets ... ..	1,049

Number of visits and inspections made by inspectors during their ordinary visits to dwelling-houses, common lodging-houses, houses let in lodgings, and canal boats :—

Total number of visits ... ..	484,894
With evidence of rats ... ..	1,953

Number of visits and inspections made by inspectors to factories and workshops, shops, food stores, slaughter houses, fried fish shops, cowsheds, piggeries, ice-cream shops, etc. :—

Total number of visits ... ..	154,271
With evidence of rats ... ..	88

Number of visits and inspections made by inspectors to offensive trade and stables :—

Total number of visits ... ..	13,104
With evidence of rats ... ..	67



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.)	4,004	235	1
<i>Workshops</i> ... .. (Including Workshop Laundries.)	11,057	915	3
<i>Workplaces</i> ... .. (Other than Outworkers' premises in- cluded in Part 3 of this Report.)	1,476	51	—
<b>TOTAL</b> ... ..	16,537	1,201	4

**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 ... ..	882	882	—	—
Want of ventilation ... ..	17	17	—	—
Overcrowding ... ..	—	—	—	—
Want of drainage of floors ... ..	—	—	—	1
Other nuisances ... ..	848	848	—	1
Sanitary accommodation—				
Insufficient ... ..	22	22	—	—
Unsuitable or defective ... ..	418	418	—	2
Not separate for sexes ... ..	17	17	—	—
<i>Offences under the Factory and Workshop Acts :—</i>				
Illegal occupation of underground bakehouse (s. 101) ... ..	—	—	—	—
Other offences ... ..	—	—	67	—
(Excluding offences relating to outwork and offences under the sections mentioned in the Schedule to the Ministry of Health (Factories and Work- shops Transfer of Powers) Order, 1921)				
<b>TOTAL</b> ... ..	2,204	2,204	67	4

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

There were no cases of outwork in unwholesome premises (sec. 108) during the year.

### AMBULANCE AND DISINFECTING STAFF.

There were 6,002 cases of infectious disease removed to hospital by officers of the ambulance staff during the year.

The number of rooms stripped or sprayed was 3,691, and the number of rooms disinfected was 36,343. There were also 2,596 library books disinfected.

The number of articles (bedding, clothing, etc.) disinfected at the disinfecting apparatus was 78,530. In addition there were 3,000 bags.

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. When necessary the disinfecting apparatus attached to each of the city hospitals can be utilised.

### DISINFECTION OF TRANS-MIGRANTS.

Typhus fever, which is a vermin-transmitted disease, has caused the Ministry of Health and also the American Health Authorities to view the arrival of emigrants and trans-migrants from these countries en route to America with some anxiety.

The emigration houses where these people are housed, pending the sailing of the vessel, are kept under strict supervision by the lodging-house inspectors; they are visited daily, and all cases of infectious illness promptly reported to the shipping company's doctor and the local health authority. The bedding is also frequently examined and attention is given to the occupation of the rooms to prevent over-crowding and to ensure cleanliness.

### MORTUARIES.

The Mortuary at the Prince's Dock is for the reception of the bodies of persons who have been drowned, killed or found dead, and upon which the Coroner desires to hold inquests. Bodies are taken to this mortuary by the police, and when it is necessary to make post-mortem examinations. During the year the number of bodies removed to Prince's Dock Mortuary was:—From the river, 6, and from the city, 317.

The method of transport of the bodies of persons killed, or found dead in the street, has been adequately provided for, the Health



Committee having arranged, through the Chief Constable, with a firm of undertakers to supply a hearse on short notice, together with a shell coffin. This arrangement has proved satisfactory.

The district mortuaries are seldom used. For the convenience of juries, as well as for other reasons, it is preferable that bodies should be conveyed to the central mortuaries. The Ford Street mortuary is provided for the reception of bodies which cannot be kept at the homes in which death had taken place, without possible injury to the health of the inmates, and is also used for the reception of stillbirths. The number of bodies received during the year was 374.

#### 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 Crematorium is attached to a Chapel, beneath which is a spacious columbarium, or chamber, fitted with small niches, used as the resting places for urns holding the ashes of the dead. The niches are closed with marble slabs bearing suitable inscriptions.

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

1896.....	2	1913.....	66
1897.....	10	1914.....	49
1898.....	27	1915.....	53
1899.....	23	1916.....	58
1900.....	40	1917.....	62
1901.....	40	1918.....	70
1902.....	54	1919.....	88
1903.....	35	1920.....	70
1904.....	40	1921.....	74
1905.....	35	1922.....	74
1906.....	46	1923.....	62
1907.....	34	1924.....	74
1908.....	32	1925.....	75
1909.....	46	1926.....	96
1910.....	37		
1911.....	50		1,574
1912.....	52		

## SMOKE NUISANCES.

Proceedings for the abatement of nuisances caused by the emission of excessive smoke from factories, steamers, etc., were taken under the following act :—

THE LIVERPOOL CORPORATION ACT, 1921.—SECTIONS 472 AND 473.

## REPORTS OF EXCESSIVE SMOKE.

Number of reports <i>re</i> factories	...	...	...	...	44
„ „ <i>re</i> steamers in dock	...	...	...	...	19
„ „ <i>re</i> steamers in river	...	...	...	...	78
Total					141

Twenty-eight steamship owners were communicated with, or written to, in respect of nuisances caused by the emission of excessive smoke, and 1,361 manufacturers and 150 steamship owners cautioned.

## INFORMATIONS FOR EXCESSIVE SMOKE.

Information against occupiers of factories	...	...	11
„ „ owners of steamers in river	...	...	26
„ „ „ „ dock	...	...	2
Total			39

	Acquitted or withdrawn.		Fined.	Amount of Fines.	
Factories	...	0	11	£11	0 0
Steamers	...	3	25	£20	10 0
	3	...	36	£31	10 0

## SMOKE INSPECTION.

The number of references and complaints received relating to defective house flues showed a large decrease during the past year, thus enabling the inspectors to give considerably more of their time to observation work on factories and steamers.



The total number of complaints received of nuisances caused by smoke from defective state of house flues, low chimneys, etc., was 73, and the visits relating to same numbered 582

Chimneys raised in consequence of complaints received...	9
Flues altered or repaired ... ..	17
Complaints under observation ... ..	38
Complaints referred to other departments ... ..	1
Complaints not sustained ... ..	8
<hr/>	
Total ... ..	73
<hr/>	

#### SMOKE ABATEMENT.

INDUSTRIAL SMOKE.—The past year has been a disastrous one from the point of view of smoke abatement. From May to December, manufacturers were forced to find supplies of fuel or other means with which to carry on business, owing to the miners' strike.

The most remarkable fact remains, that during this period not a single factory in the city had to close down owing to fuel shortage.

Some factory owners converted their furnaces in order to burn oil as fuel, others were fitted to blow atomised oil over the furnace-bars, on which was kept a layer of incandescent coke, while the remainder relied on supplies of imported fuel to keep their factories working. The amount of smoke emitted from the chimneys of factories during this period was at times very bad and the usual stringency had to some extent to be relaxed.

One large factory in the city caused considerable nuisance by emitting quantities of grit from their chimney, to such an extent that the foot-walks were covered with fine layers of grit. This was due to the class of fuel that was used, the nuisance being abated as soon as a suitable fuel was available.

STEAM WAGONS.—These vehicles caused a considerable amount of nuisance, due to using low-grade fuel, owing to their inability to obtain

supplies of Welsh coal or coke. The drivers of these wagons were to some extent responsible for the nuisance, by overcharging their furnaces. With certain types of wagons, when the overcharge is dropped into the furnace, it is almost impossible to prevent a nuisance. Special attention was given by the inspectors to this class of nuisance.

LOW CHIMNEYS.—It is often observed that products of combustion emitted from a chimney cause a nuisance to the surrounding inhabitants, due to the chimney being too low. A change of fuel would sometimes remedy this, but when it was not practicable to change the fuel, notices were served on the occupier to raise the chimney.

STEAMERS IN DOCK AND ON THE RIVER.—Observations have been continued with regard to excessive smoke emitted from steamers in dock and plying on the river Mersey. During the strike period the number of craft was much below the normal, consequently the amount of excessive smoke was diminished. There were 97 reports of excessive smoke from steamers in dock and on the river, 69 of which related to foreign-going vessels. No proceedings were taken with regard to this class of vessel, but the owners were communicated with in respect of the nuisance. The number of owners of vessels proceeded against was 28, of which 25 were convicted and three discharged with a caution.

DOMESTIC SMOKE.—There is no legislation to deal with this nuisance. Individually the amount of smoke emitted from domestic fireplaces is small. In the aggregate it is heavy, almost as heavy as that of the industrial chimneys. This was proved during the strike period, for it was particularly noticeable that the atmosphere was much clearer than in pre-strike times, though all the factories were working under adverse conditions. While many improvements have been made to reduce industrial smoke, little or nothing has been done with regard to domestic smoke. The substitution of coke for coal where possible, and the conversion of open hearths to gas fires or electric radiators, would largely reduce the smoke nuisance. This would considerably assist in making the city a cleaner place to live in.



## SMOKELESS FUEL.

What is required for domestic fireplaces is a new form of fuel, something between our existing form of coal and coke. The use of coal is both wasteful and dirty, while the coke is taken to such a high temperature that it is difficult to ignite, and almost impossible to burn in the ordinary open hearth. There is a class of fuel, viz., "low temperature carbonised coal," which gives satisfactory results. The difficulty, however, is that of obtaining adequate supplies. If this type of fuel could be produced on a large scale at a reasonable price, it would greatly assist the problem of domestic smoke. As an alternative, open hearths may be converted into gas fires or electric radiators, but the cost of converting thousands of fireplaces in this manner would be enormous.

The Corporation of Glasgow have installed a large plant for the production of this low distillation fuel, and are marketing the same at a slightly lower price than that of coal, with very satisfactory results.

## THE PUBLIC HEALTH (SMOKE ABATEMENT) ACT, 1926.

This act was passed in December and comes into operation on July 1st, 1927.

It defines that smoke need not necessarily be "black" smoke, and that soot, grit, ash and gritty particles shall be included as smoke. The maximum penalty is increased from five pounds to a penalty of fifty pounds, and a daily penalty of forty shillings to one of five pounds.

It also defines that a chimney shall include structures and openings of any kind capable of emitting smoke.

Powers are given to local authorities to make byelaws respecting new buildings (other than private dwelling-houses) to minimise or reduce the smoke emitted from cooking or heating apparatus. All steamships which come under the category of sea-going are exempted from the act.

These provisions are undoubtedly a step in the right direction towards smoke abatement.

### ATMOSPHERIC POLLUTION.

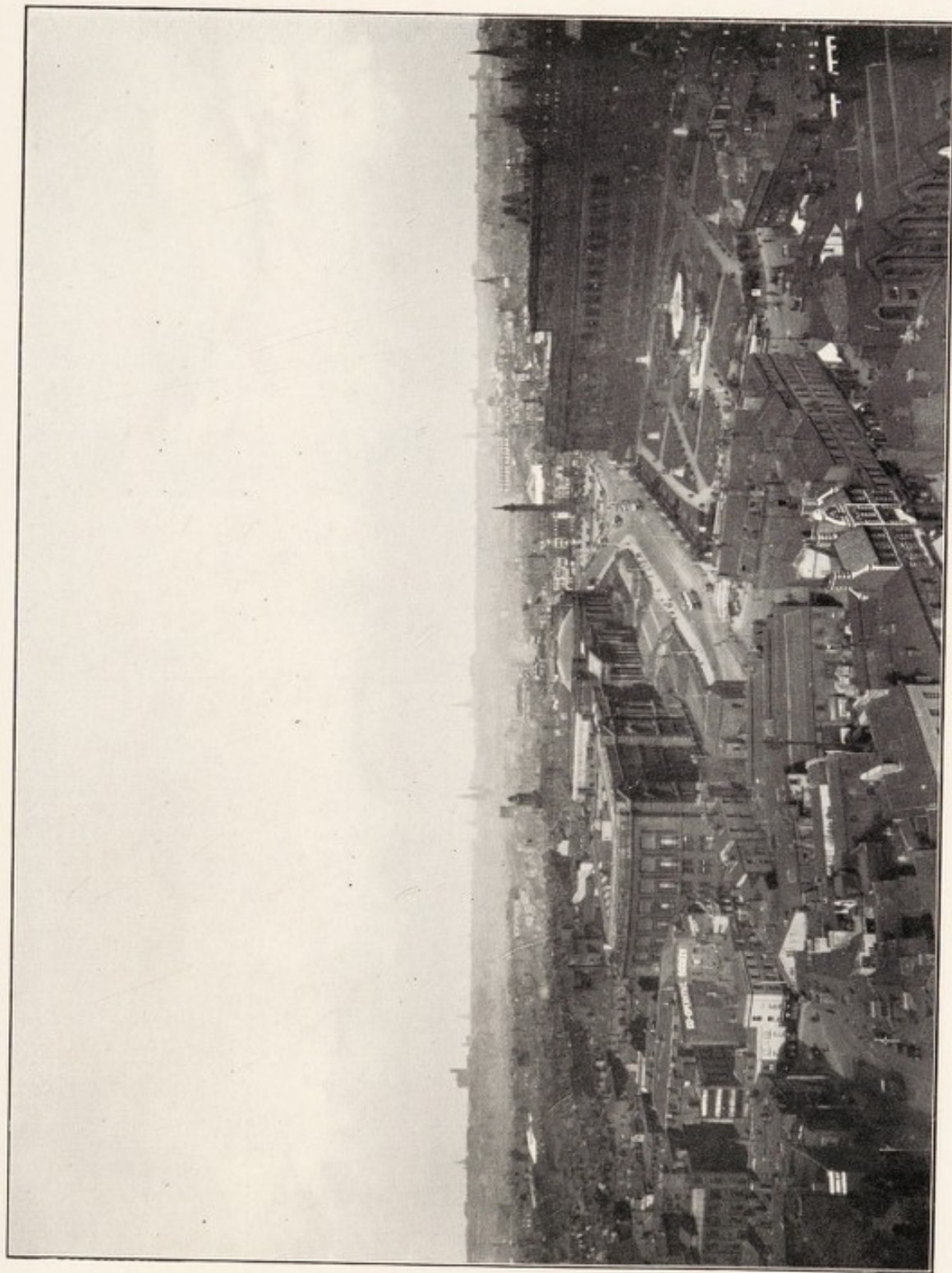
The analyses of the deposits collected from the atmospheric pollution gauge at the North Tuberculosis Dispensary in Netherfield Road are shown in the table (page 189). This is the sixth complete year's record since the gauge was reinstalled at the end of the war. It will be seen that deposits of soot and other material fell on every square mile of that part of the city in amounts averaging 50 tons per month, the same as in 1925, as against 51 tons in 1924 and 59 tons in 1923. The great diminution in deposit during the early part of the coal strike in June is very striking, the amounts deposited per square mile during May and June being 69 and 32 tons respectively. With the importation of foreign coal the amount of deposit reached normal limits again in the succeeding months.

The collected rainwater was acid for two months out of the twelve, namely, November and December, this corresponds to the winter months, when domestic fires are most in use. The acidity is mainly due to the combustion of the sulphur compounds in coal. It is this acidity which has such a deleterious action on bronze statues and stone work containing large amounts of carbonate of lime.

It will be seen that about two-thirds of the deposits consist of mineral matter. The remainder is mainly sooty matter derived, in residential districts, mostly from domestic fires consuming coal. Relief is mainly to be sought in the increased use of electricity, of gas, and of smokeless fuels. These particles of suspended matter assist in the production of fogs and diminish to a considerable extent the amount of sunlight received, especially tending to cut off the ultra violet rays, whose action is of value in the prevention of rickets and other affections.



CITY OF LIVERPOOL--LOOKING EAST.

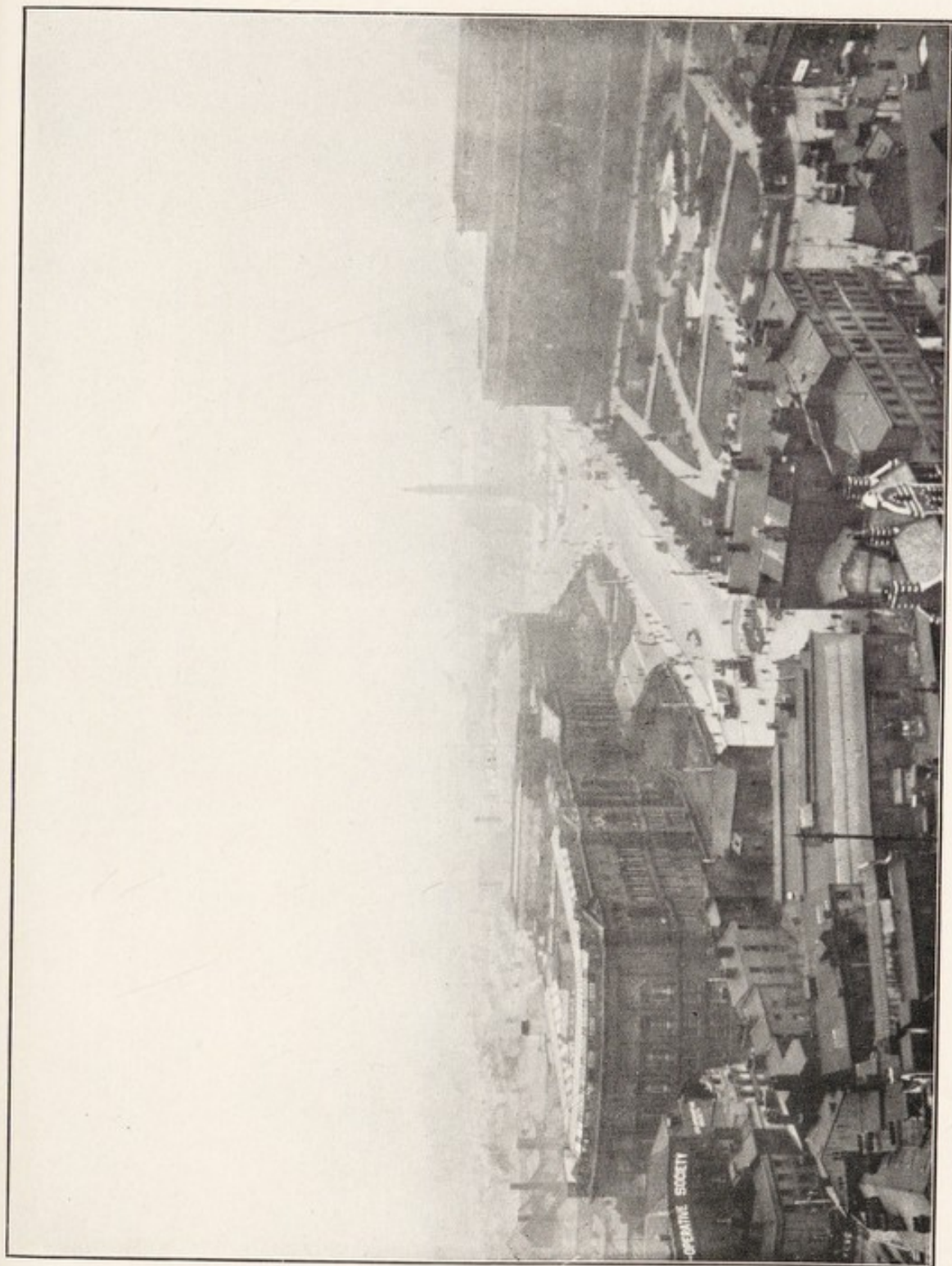


PHOTOGRAPH TAKEN FROM CLOCK TOWER, MUNICIPAL OFFICES, 24th JUNE, 1926, AT 6-0 P.M., DURING COAL STRIKE.

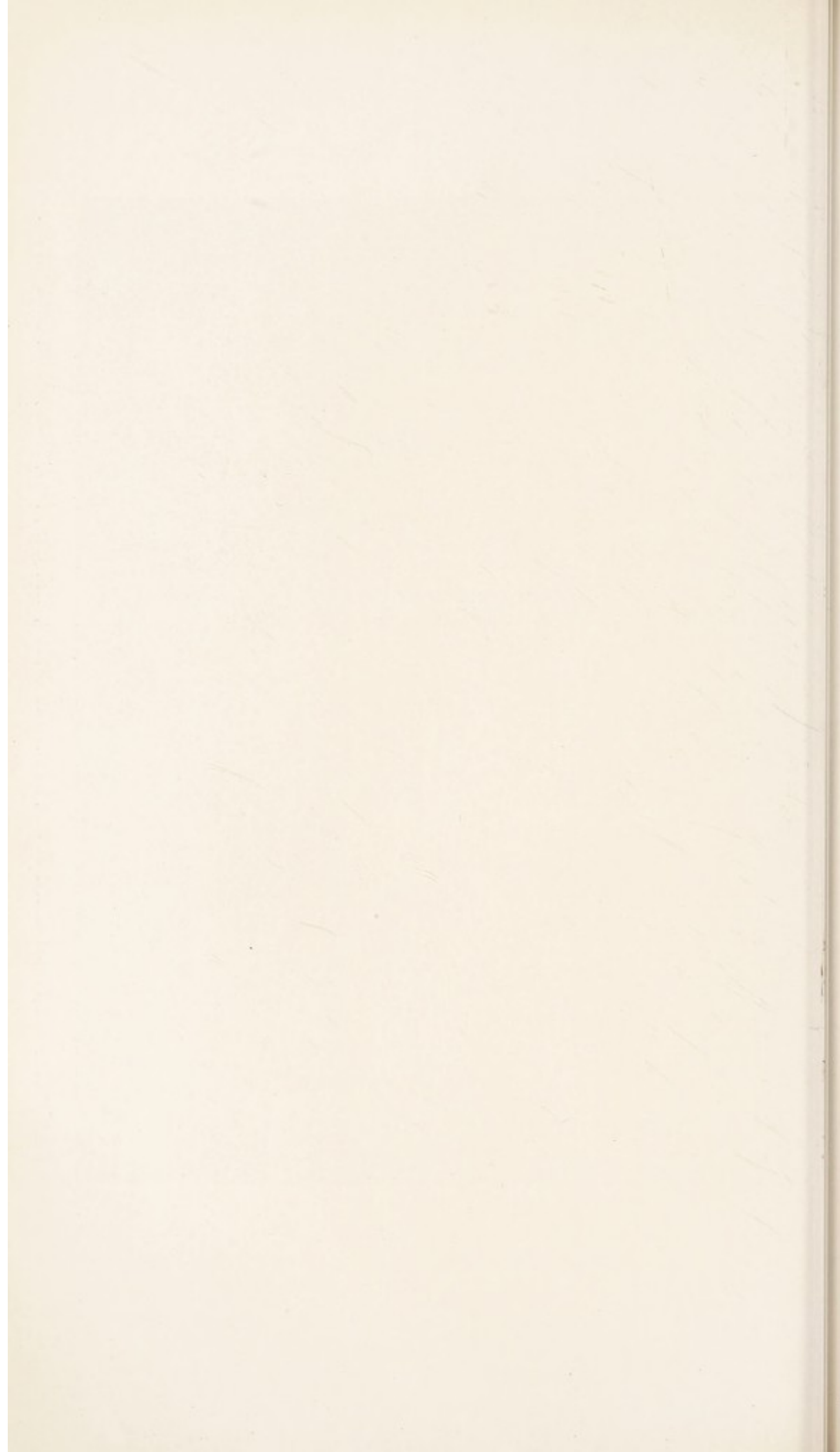




CITY OF LIVERPOOL—LOOKING EAST.



PHOTOGRAPH TAKEN FROM CLOCK TOWER, MUNICIPAL OFFICES, 20th JULY, 1927, NOON, AFTER COAL STRIKE.





## ATMOSPHERIC POLLUTION, 1926.

RESULTS OF ANALYSES BY THE CITY ANALYST (RESULTS CALCULATED IN TONS PER SQUARE MILE).

	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.	Totals for 12 months
Sum Total Solids .....	47.727	51.239	78.476	44.471	69.102	32.022	54.740	37.431	46.455	60.103	48.110	35.870	605.746
UNDISSOLVED MATTER—													
Tarry Matter and Bitumen	0.775	0.494	0.462	0.449	0.574	0.469	0.240	0.286	0.403	0.273	0.625	0.060	5.410
Other Organic Matter .....	6.365	10.751	14.447	7.372	11.192	6.194	8.675	6.046	7.777	9.702	5.773	6.260	100.554
Mineral Matter .....	16.613	23.804	42.950	18.143	27.708	14.231	27.950	13.555	18.077	27.058	11.388	12.640	254.117
Total Undissolved Matter ...	23.753	35.049	57.859	25.964	39.474	20.894	36.865	19.887	26.257	37.033	17.786	19.260	360.081
DISSOLVED MATTER—													
Organic Matter by Ignition	10.424	4.047	6.717	8.433	11.108	3.904	3.065	6.579	8.654	9.476	17.141	7.180	96.728
Mineral Matter .....	13.550	12.143	13.900	10.074	18.520	7.224	14.810	10.965	11.544	13.594	13.183	9.430	148.937
Total Dissolved Matter .....	23.974	16.190	20.617	18.507	29.628	11.128	17.875	17.544	20.198	23.070	30.324	16.610	245.665
Alkalinity as $\text{NH}_3$ .....	0.084	0.135	0.097	0.041	0.176	0.097	0.390	0.148	0.194	0.104	—	—	1.466
Acidity as $\text{H}_2\text{SO}_4$ .....	—	—	—	—	—	—	—	—	—	—	0.645	0.140	0.785
Chlorine as $\text{Cl}$ .....	3.083	1.581	4.268	2.121	2.441	0.969	1.541	1.476	2.050	2.666	2.340	2.150	26.086
Ammonia as $\text{NH}_3$ .....	0.676	0.479	0.410	0.364	0.899	0.344	1.216	1.002	0.981	0.734	1.008	0.290	8.403
Sulphate as $\text{SO}_3$ .....	6.084	6.320	4.919	6.135	12.084	3.182	5.434	5.044	6.143	5.518	7.921	4.010	72.794
Lime as $\text{CaO}$ .....	1.392	2.630	2.575	1.757	13.221	1.073	1.275	0.436	2.881	2.055	2.303	1.270	32.868
RAINFALL { Millimetres ...	68.13	79.36	30.62	22.97	103.70	38.28	100.1	86.0	113.18	80.77	129.26	29.35	881.72
{ Inches .....	2.68	3.13	1.20	0.90	4.08	1.50	3.94	3.38	4.45	3.18	5.09	1.16	34.69

SPECIAL VISITS.

Number of visits to railway carriages...	...	...	...	675
„ „ „ platforms (fish arrivals)	...	...	...	146
„ „ poultry depots	...	...	...	440
„ „ manure depots	...	...	...	225
„ „ marine stores	...	...	...	1,196
„ „ fried fish shops	...	...	...	1,948

Complaints are occasionally received from passengers directing attention to the dirty condition of railway carriages, these carriages are from time to time inspected, and if they are found in an unclean condition the railway company concerned is informed and the matter receives prompt attention.

The manure depots are situated in close proximity to the north corporation destructor, and visits are made to these depots to see that the manure which has been received from the stables in the centre of the city is frequently removed so as to avoid the possibility of the depots being the breeding places for flies.

HOUSE-TO-HOUSE INSPECTION.

The following table indicates the results of the systematic house-to-house visitation by the district male staff :—

Number of street houses examined	...	...	...	139,780
„ court houses examined	...	...	...	3,310
Total				143,090
Number of apartments examined	...	...	...	708,429
„ houses where nuisances existed	...	...	...	42,699

INFECTED HOUSES.

The following table shows the number of houses visited where notifiable infectious diseases had occurred; also the number of visits to these houses, and to houses where cases of non-notifiable infectious diseases had been reported to the department by the Education department :—



Number of street houses where notifiable disease occurred ...	10,702
„ court houses where notifiable diseases occurred...	113
„ visits to infected houses and cellars (notifiable cases) ... ..	20,162
„ visits to infected houses and cellars (school cases)	9,419
„ visits and re-visits to Phthisis cases ... ..	3,994
„ enquiries <i>re</i> suspected Smallpox contacts ...	568
„ other enquiries ... ..	—

#### COURT AND ALLEY EXAMINATIONS.

Number of inspections of courts and alleys ... ..	19,563
„ „ water-closets ... ..	34,935
„ water-closets found dirty, but cleansed by officers' instructions ... ..	20,979

#### PICTUREDROMES.

At the request of the Licensing Justices, officers of the Health Committee systematically visit all picturedromes to see that the means provided for the ventilation of the auditorium is being used, attention also being directed to the condition of the sanitary conveniences, provision of seats for the attendants, the general cleanliness of the premises, and the water supply.

During the year 234 night visits were paid, and on each occasion the premises were found to be in a satisfactory condition, a day inspection is also made so that closer attention may be given to the examination of the sanitary conveniences.

#### SHAVING BRUSHES.

As a precautionary measure in connection with the possible spread of anthrax from shaving brushes, samples of shaving brushes are purchased from shops in different parts of the city, and all of them are submitted to the City Bacteriologist for examination.

Number of shaving brushes submitted during the year ...	27
„ found infected “Positive B. Anthrax” ... ..	Nil.

### COMMON LODGING HOUSES.

At the end of the year 1925 there were on the register (including emigration houses), 153 lodging houses. During the year 1926, 11 houses were given up and removed from the register, and 8 new houses added, leaving, at the end of 1926, 150, providing accommodation for 6,579 lodgers.

Under Part 5 of the Public Health Acts Amendment Act, 1907, Sections 69 to 72 (adopted in 1912), 68 keepers were re-registered and 37 deputy-keepers registered.

### INSPECTION OF LODGING HOUSES.

Visits by day	...	...	...	...	...	6,948
„ night	...	...	...	...	...	989
Visit to houses not on register	...	...	...	...	...	122

No informations have been laid against keepers during the year

### INFECTIOUS DISEASES IN LODGING HOUSES.

The number of cases of infectious disease notified during the year was 24, and the necessary disinfection and cleansing of the premises was carried out after each case.

One hundred and thirty-two persons living in common lodging houses were notified as suffering from phthisis. In all cases where patients on discharge from a sanatorium return to these houses, instructions are given regarding the isolation of the patient, and the precautions to be taken to prevent the spread of infection.

Enquiries were also made regarding 191 cases of Trachoma or Conjunctivitis occurring amongst transmigrants passing through Liverpool, the majority of which were notified from various ports in England where they landed from the continent. Prior to sailing for the American continent, persons affected with these diseases are re-examined by the doctors attached to the various shipping companies.

Those rejected are either placed under treatment in the care of the shipping companies or are taken charge of by the Jewish Board of Guardians until they are certified fit to sail, and should they not recover within a reasonable time they are returned home.



During this period the patients are kept under observation by the department and their ultimate destination ascertained, as shewn in the following table :—

TRACHOMA OR CONJUNCTIVITIS.

Cases under treatment 1st January, 1926	...	...	2
„ notified from Hull or other ports	...	...	176
			— 178
„ discovered in Liverpool	...	...	15
			— 193
Number of above who sailed for U.S. of America or Canada	...	...	180
Number recovered and waiting to sail	...	...	2
„ returned home	...	...	5
„ diverted to other ports	...	...	6
			— 193

There are 19 houses providing accommodation for 641 women lodgers. For details of women's lodging houses see Reports for the years 1909 and 1914.

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 under the Act are infrequent, the number of licenses granted since the adoption of the Seamen's lodging-house byelaws being 33, and only three such licensed houses are now on the register, providing accommodation for 63 seamen.

It has not been found necessary to institute proceedings under the byelaws. Now that the privilege to board vessels and seek for lodgers is 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.

### HOUSES LET IN LODGINGS (SUB-LET HOUSES).

The supervision of these houses is carried out under byelaws made by the City Council and confirmed by the Secretary of State. The first byelaws were made in 1866 and amended in 1869. Further amendments were made in 1885, 1886, 1901, 1911, under the Public Health Act, 1875.

Under these byelaws, power is given to deal with overcrowding, non-separation of the sexes, cleansing of floors, stairs and passages, ventilation of rooms, prevention of the spread of infectious disease, provision of w.c. accommodation, and the limewashing of walls and ceilings of houses, yards and water closets.

The amended byelaws, which came into operation in 1911, gave powers requiring 400 cubic feet for *each* person occupying a room which is not exclusively used for sleeping purposes, the separation of the sexes, in rooms occupied by the tenant's family, or in rooms over which he retains possession or control. Lodgers are made responsible for overcrowding, and for the separation of sexes, in rooms let to them, and for the cleansing of the floors, and for the cleansing of the stairs, passages, and landings used exclusively by them.

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

#### INSPECTION OF HOUSES LET IN LODGINGS.

Houses on register, December 31st, 1925	...	...	17,601
„ removed from register during 1926	...	...	10
„ added to register during 1926	...	...	292
„ on register, December 31st, 1926	...	...	17,883

#### DAY VISITS :

Day visits	...	...	...	...	...	113,302
Rooms measured	...	...	...	...	...	1,544
Floors found dirty	...	...	...	...	...	448
Floors found cleansed on revisit	...	...	...	...	...	448
Stairs and passages dirty	...	...	...	...	...	149
Stairs and passages found cleansed on revisit	...	...	...	...	...	149



Informations were laid for breaches of the byelaws as follows :—

Not washing floors ... ..	16
Not sweeping floors ... ..	9
Not cleansing stairs, passages ... ..	13

### CLEANSING OF WALLS AND CEILINGS.

During the year the following notices were served on landlords of houses let in lodgings under Section 7 of the 1911 Byelaws :—

Preliminary notices to cleanse wall and ceilings ...	76
Houses cleansed ... ..	71
Rooms „ ... ..	489
Houses standing over at end of 1926 ... ..	5

### REFERENCES FROM OTHER DEPARTMENTS.

All these references relate to matters within the province of the department to deal with :—

Received from Sanitary Department ... ..	379
„ by anonymous complaints ... ..	17
„ by tenants' „ ... ..	34
„ by lodgers' „ ... ..	36
„ by other sources ... ..	8

### REFERENCES TO OTHER DEPARTMENTS.

The number of matters referred to other departments was :—

Referred to Sanitary Department ... ..	11,576
„ „ (Specials) ... ..	361
„ City Engineer ... ..	450
„ Water „ ... ..	2,191
„ City Surveyor ... ..	1,036
„ Health Visitors ... ..	6
„ Education Authority ... ..	1

### NIGHT VISITS.

#### OVERCROWDING AND NON-SEPARATION OF SEXES.

Up to the year 1918 the sub-letting of rooms was almost confined to houses in those districts in the city inhabited by the poorer classes.

Since then, owing to the housing shortage, sub-letting has extended to the houses occupied by the artizan and middle classes.

In these districts many newly married couples unable to obtain houses have been compelled to accept accommodation with relatives or friends, and in the course of time, increases in family and in the ages of the children, with no corresponding increase of accommodation cause overcrowding and inability to properly separate the sexes.

In order to deal with these offences a different method of procedure had to be adopted, which increased the work of the staff and resulted in reducing the number of informations laid against the offenders in these cases.

In all instances where the above infringements of the Bye-Laws are discovered during the night inspections, the offenders are interviewed the following day, and suggestions made or instructions given, whereby these offences can be abated with the least inconvenience to the occupants, e.g., by utilising apartments not at the time used for sleeping purposes, by transferring occupants of overcrowded rooms to rooms not fully occupied; or by obtaining more adequate accommodation in other premises.

Regarding this latter method the inspectors, on their visits by day, record any vacant rooms which they may notice, and which appear to be suitable for occupation.

Subsequent visits are made to ascertain if these instructions are carried out, and only when they are wilfully ignored, and infringements allowed to continue are informations laid against the offenders.

Night visits (between 11-45 p.m. and 2 a.m.)	...	...	22,671
Cases of overcrowding found	...	...	757
Visit to instruct how to arrange so to abate overcrowding...	...	...	757
Re-inspection after instructions given	...	...	1,074
Cases of overcrowding abated on re-inspection	...	...	653
Informations laid for overcrowding	...	...	6
Convictions for overcrowding	...	...	4
Dismissed cautioned	...	...	1
Withdrawn	...	...	1



## DETAILS OF OVERCROWDING :

Overcrowding by families occupying 1 room	...	...	...	255
" " " 2 rooms	...	...	...	337
" " " 3 or more rooms	...	...	...	178

## NON-SEPARATION OF SEXES :

Cases found	...	...	...	...	...	188
Visit to instruct how to re-arrange so as to separate the sexes	...	...	...	...	...	188
Re-inspection after instruction given	...	...	...	...	...	272
Cases abated on re-inspection	...	...	...	...	...	186
Informations laid	...	...	...	...	...	1
Discharged cautioned	...	...	...	...	...	1

The following table shows the number of Houses let in Lodgings on the register, together with the number of visits at night for the prevention of overcrowding and non-separation of sexes for the past 10 years :—

OVERCROWDING.							NON-SEPARATION OF SEXES.			
Year.	No. of Houses let in Lodgings on Register.	No. of night visits.	No. of infringements found.	No. of infringe- ments found abated on re-visit.	No. of informa- tions laid.	No. of convictions.	No. of infringe- ments found.	No. of infringe- ments found abated on re-visit.	No. of informa- tions laid.	No. of convictions.
1916	16,827	22,199	1,547	—	662	636	275	—	163	158
1917	16,635	21,746	1,822	—	533	508	278	—	153	147
1918	16,870	19,524	1,206	786	233	220	211	—	112	106
1919	14,636	23,350	1,537	755	198	191	287	69	106	97
1920	15,080	24,596	1,211	467	89	85	273	69	86	83
1921	15,332	24,851	1,157	1,114	55	45	208	200	45	37
1922	15,802	23,910	926	909	57	50	162	155	30	25
1923	16,639	24,118	1,007	920	35	28	166	153	19	16
1924	17,267	22,838	1,106	775	5	4	170	119	7	6
1925	17,601	22,600	935	678	3	1	186	149	5	2
1926	17,883	22,671	757	653	6	4	188	186	1	—

**CANAL BOATS ACTS, 1877 and 1884, and  
CANAL BOATS ORDERS, 1878, 1922 and 1925.**

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 the locks which lead to the docks, is about three miles.

The number of inspections of canal boats during the year was 4,457, and the condition of the boats and their occupants as regards matters dealt with in the acts and regulations are as follows :—

Boats on register, 1st January, 1926 ... ..	304
New boats registered ... ..	19
Boats removed from register—	
Broken up ... ..	8
Left the district ... ..	5
	13
Boats on register, 31st December, 1926... ..	310
,, not seen in the district ... ..	18
,, regularly plying on the canal ... ..	198
,,       ,,       ,, on rivers and docks ... ..	94
,, re-registered on account of change of owners... ..	5
,, on which contraventions occurred ... ..	80

One copy of the registration certificate was issued owing to the original certificate being worn out and ineligible.

Of this number, 58 were registered by other authorities.

**NATURE OF CONTRAVENTIONS :—**

Unregistered boats used as dwellings ... ..	13
No certificate of registration on board, or certificate ineligible	8
Registered lettering, &c., not legible ... ..	19
Leaky decks ... ..	19
Defective skylight ... ..	1
,, stoves and stovepipes... ..	9
Cabins requiring repainting ... ..	5
No water cask, and defective water casks and water tank ...	4
Dirty condition of cabins ... ..	3
Unregistered cabin occupied ... ..	2
Cabin rat-infested ... ..	1
Defective bulkhead ... ..	1
No fixed sleeping accommodation ... ..	1



Defective cabin lockers ... ..	2
No double bulkhead for offensive cargo ... ..	1
Defective decklight ... ..	1
Defective ventilation ... ..	2

Written notices were issued to owners in 45 instances; verbal notices were given to masters in 28 instances, and to owners in 7 instances. All these notices have been complied with, with one exception: in this case the boat has not been seen in the district since.

No informations were laid during the year against owners or masters for infringement of the acts or regulations, and no cases of infectious sickness were reported as having occurred during the year on any canal boat visiting the district.

Four motor-propelled boats and fifty-nine steam-propelled boats are registered by the authority.

#### DETAILS OF VISITS.

Three hundred and thirty boats were visited, which were registered as follow:—196 at Liverpool, 40 Runcorn, 3 Leigh, 4 Wigan, 19 Manchester, 11 Chester, 30 Blackburn, 24 Leeds, 2 Widnes, 1 Mirfield.

All were "wide" boats, 23 being propelled by steam, 34 steam-towed, 5 motor-driven, and the remainder horse-drawn.

The number of inspections of these 330 boats which were plying on the canal was 3,636, and the population as follows:—

Men.....	688	Males over 14 years of age .....	688
Women.....	58	„ over 5 and under 14.....	9
Children.....	29	„ under 5 years of age.....	11
		Females over 12 years of age.....	58
		„ over 5 and under 12.....	2
		„ under 5 years of age....	7
	<hr/>		<hr/>
	775		775
	<hr/>		<hr/>

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, Sec. 2, Canal Boats Act, 1877.)

Seventeen children of school age were found on canal boats during the year. Two only were referred to the Education Authorities, the others being on trips with their parents during the school holidays.

No families were found on boats on the canal or river, or in the docks, who had not a home ashore in addition to that on board.

On May 1st, 1923, the Ministry of Health, under Section 10 of the Canal Boats Act, 1884, issued an order, cited as the Canal Boats Order, 1922. This order brings within the scope of the Canal Boats Acts all similar vessels which had hitherto been registered under the Merchant Shipping Acts, and consequently were exempt from inspection. Ten boats of this class have been registered as canal boats, under this order, during the year.

In 1903 the inspectors of the Port Sanitary Authority were also appointed as canal boats inspectors. This appointment authorised them to inspect canal boats which ply to and from the docks and on the river. In regard to these boats, 821 inspections were made, and 54 contraventions were discovered, which were subsequently dealt with. In each instance a written notice was served on the owner, and all were complied with. These figures are included in the foregoing table.

### **SUPERVISION OF FOOD SUPPLIES.**

The responsibility of seeing that the food supplied to the public is wholesome and free from adulteration and contamination devolves upon the Medical Officer of Health and his staff. The duties involved in this supervision are carried out by several sections, e.g., the supervision of the slaughter of animals and the preparation of meat and meat products for sale devolves upon the meat inspection staff, which has also allocated to it duties in connection with the inspection of fish, fruit, poultry and eggs, together with other market produce. Another section of the staff supervises the composition of food under the Food and Drugs and other Acts by seeing that food is free from adulteration and does not contain any chemical preservative or colouring matters which would be dangerous to health. This section also operates under the Public Health (Preservatives in Food) Regulations, and obtains samples of milk from railway stations, institutions and during delivery to the general public. A special staff of inspectors visits the dairies and milkshops in the



city to supervise the milk supply from local dairies. The cleanliness of these premises and utensils and the registration of persons employed in the trade are supervised under the Milk and Dairies Order, 1926.

### MEAT AND MEAT PRODUCTS, ETC.

The inspection of meat, and meat products, etc., is performed under the various Public Health Acts, the Liverpool Corporation Act, and byelaws and regulations dealing with animals and carcasses in the central abattoir and private slaughterhouses, factories where meat products are prepared, and establishments from which meat, etc., is sold.

The supervision of slaughterhouses, knackers' yards and wholesale fruit and fish markets is also carried out by the staff.

During the past few years, owing to the interest taken in pure food by the Government and the community generally, various acts have been passed by Parliament, and regulations have been issued by the Minister of Health, which have materially assisted local authorities in maintaining a wholesome food supply.

Amongst the most recent legislation are to be found—The Public Health (Meat) Regulations, 1924. These regulations were framed with the object of ensuring that all animals slaughtered for human food are examined by qualified inspectors before being passed for sale, and of preventing meat from becoming contaminated in butchers' shops or in transit by road and rail. The result in this city has been very good, and together with the assistance and co-operation of the traders concerned a great advance in the hygienic handling of meat has been achieved. The effect of the order will be realised by the fact that over 200 butchers' shops have been fitted with glass fronts in preference to the old style of open windows exposing the meat to dust and dirt.

In connection with the general subject of food supply it has been suggested that meat shops might be registered, and protection of a similar character afforded to other articles of food, such as fish, fruit and cooked meats.

Meat and food inspection is carried on systematically in shops, wholesale warehouses, factories, markets, private slaughterhouses, and central abattoirs.

There are 15 private slaughterhouses in the city, only six of which are being used to any great extent. There are three being used for the slaughter of horses for export to Belgium and France.

The inspection of these private slaughterhouses, which are widely distributed over the city, takes up much time of the staff.

During the past year 21,834 animals were slaughtered in such slaughterhouses, and all carcasses were inspected before leaving the premises.

To meet the early morning trade at the wholesale markets the inspection staff begin duty before the markets are open for buyers in order that congestion may not occur through wholesalers being delayed by waiting for the inspection of their goods. Saturday evenings are also occasions for special inspection, the shops and markets being systematically inspected until 9 p.m.

Sunday is still one of the main days for slaughter at the central abattoir, and it has consequently been necessary to have some of the food inspectors on duty on such days. It is hoped that with the advent of the new abattoir at Stanley Sunday slaughtering will cease.

The number of animals slaughtered in the city again show an increase, which may be accounted for by the growing tendency of traders to have their animals slaughtered on the premises from which they are to be sold. The following statistics demonstrate the necessity of a definite and systematic food inspection, viz. :—During the year 363,567 animals were slaughtered at the central abattoir; 21,854 animals were slaughtered in the private slaughterhouses; 66,887 were brought in dressed from other centres, and 343,917 chilled and frozen carcasses were sold from the Gill Street meat market.

There were 4,175 animals which showed abnormal or diseased conditions and a detailed examination made of each. There are no horse-flesh shops in the city, but 1,953 horses were slaughtered for export to Belgium and France. These carcasses have to be inspected and stamped at the slaughterhouse by the food inspector before being accepted on the Continent.



The duties of the staff have not been merely inspectorial, but efforts have been made to afford the trades generally information and assistance which would enable them to obviate the possibility of unsound food being sold to the public. The result of the co-operation between the trades and the inspectors has proved effective, and the system of food inspection rendered thereby more efficient.

THE TUBERCULOSIS ORDER OF 1925 aims at the eradication of tuberculosis from milking herds and a purer milk supply, and compels owners of cows to notify the local authority of any sign of tuberculosis in the herd. Should an animal be suspected it is examined by the veterinary inspector, and if suffering from such a disease it is valued and sent for slaughter. The cow-keeper is compensated in all such cases according to the degree of tuberculosis found at the post-mortem examination. This order was made to serve as an inducement to all cow-keepers to report suspected cases at an early stage in the disease and thereby help to procure and maintain a tubercle-free herd. During the year 45 post-mortem examinations have been conducted by the inspectors, and of these 38 cows were found to be suffering from advanced tuberculosis and seven from minor localised affections. Seven carcasses of cows, slaughtered under the Tuberculosis Order, were sent to the abattoir for sale from districts outside the city. On examination at the abattoir four of these were allowed to be sold, portions of the remaining three carcasses being rejected.

The following table supplied by the chief veterinary officer shows the number of animals dealt with during 1926, and the form in which they were diseased :—

Total number of animals examined.	Number Slaughtered	No. with Tuberculosis of udder	No. giving Tuberculosis Milk	No. with Tuberculosis with emaciation	No. with chronic cough and definite signs of Tuberculosis.
918	48	19	—	2	27

#### FOOT AND MOUTH DISEASE.

On the 10th September, one pig was discovered in the piggery suffering from Foot and Mouth Disease. This animal had come from

Shrewsbury, and was detected soon after arrival. The abattoir was immediately closed on the instructions of the inspector of the Ministry of Agriculture and the slaughter of all the remaining animals was commenced.

Slaughtering was carried on night and day continuously, and on Sunday morning, the 12th September, all the live stock in the abattoir had been slaughtered, with the result that there was no extension of the disease except in the case of one pig, which showed suspicious signs, and which had come from the same lot as the one affected.

Cleansing and disinfection of the abattoir and lairages was immediately carried out, and with the help of the fire brigade was completed at 10 p.m. on Sunday, when an inspection was made by the inspectors of the Ministry of Agriculture, who were satisfied as to the thoroughness of the cleansing and authorised the abattoir to be opened at 6 a.m. on Monday, the 13th, for the sale of meat and the reception of live stock on special licence on Tuesday, the 14th September.

The valuable assistance rendered by the fire brigade was the only means of cleaning the premises in the short time available. The disinfection was carried out by means of a strong disinfecting solution pumped through the hose from a specially constructed canvas tank. The water was delivered from the main to the tank, disinfectant added to the water in the tank and pumped all over the abattoir, roofs, walls, streets and outside the buildings—all being thoroughly washed to the entire satisfaction of the Ministry's inspectors.

#### PRIVATE SLAUGHTERHOUSES.

There are 15 private slaughterhouses in the city, which is a reduction of two during the year.

The private slaughterhouses have been well conducted and kept in good condition. A number of such slaughterhouses are situated in cramped and congested positions, and are not suitable places for the slaughter of animals, but owing to the very congested and insanitary state of the central abattoir it has been found necessary to keep these



places in use until such time as a new public abattoir is built commensurate with the trade of the city.

### ABATTOIRS.

The congested insanitary and unsuitable position of the central abattoir and allied trades remains the same as in previous years. Repairs have been carried out, but no amount of repairing can make the building a suitable place in which to slaughter animals and sell the carcasses for human food. The only remedy lies in the erection of a modern abattoir and meat market in keeping with the other branches of public health work in the city.

Plans for a new abattoir and comprehensive meat market at the Stanley cattle market have been prepared, and it was hoped that the building would be commenced during the year. When the tenders for the work were received it was found that the scheme in this form was too costly. The Markets Committee have expressed their determination to limit the cost to a figure that would not cast an undue burden on the trade, and the Surveyor and Consulting Engineer are now engaged on a modification of the plans and structure. A brief summary of the new building appeared in last year's report.

The following table shows the number of private slaughterhouses in the city, viz. :—

SLAUGHTERHOUSES.

	1920	Jan. 1926	Dec. 1926
Registered ...	5	5	5
Licensed ...	14	12	10

Three of these are used exclusively for the slaughter of horses for export.

## ANIMALS SLAUGHTERED FOR HUMAN FOOD IN THE CITY

	Bulls	Bullocks.	Cows.	Heifers.	Calves.	Sheep.	Lambs.	Goats.	Swine.	Horses
Public Abattoir	283	1,548	10,320	1,838	25,674	45,482	242,857	37	28,528	—
Private Slaught- ter-houses ...	—	106	476	33	1,379	201	4,227	2	13,477	1,953
<b>TOTAL</b> ...	283	8,654	10,796	1,871	27,053	45,683	247,084	39	42,005	1,953

Total number of animals slaughtered in the city, 385,421. Compared with 1925 this figure shews an increase of 4,048 animals.

## IMPORTED MEAT SOLD IN MEAT MARKETS.

	Cattle.	Calves.	Sheep.	Lambs.	Swine.
Abattoir (Irish and Birkenhead dressed)	10,670	2,020	14,988	32,736	7,673
Gill Street (Imported) ... ..	45,703	27	155,328	140,602	2,257
Retail Shops ... ..	7	14	3	209	567
<b>TOTAL</b> ... ..	56,380	2,061	170,319	173,547	10,497

ANIMALS IMPORTED, SLAUGHTERED AND SOLD FROM THE  
MEAT MARKETS AND PRIVATE SLAUGHTERHOUSES.

Cattle.	Calves.	Sheep.	Lambs.	Goats.	Swine.	Horses.
78,399	30,180	217,149	516,124	14	41,594	1,953



The 1,953 horses were slaughtered for export to France and Belgium. These carcasses were inspected and passed by food inspectors, with the exception of 18, which were rejected as unfit for human food.

**IMPORTED MEAT AND OFFAL SOLD IN BOXES AND BAGS  
AT THE MEAT MARKETS.**

	Boxes and bags.
Abattoir (Irish and Birkenhead) ... ..	6,015
Gill Street (Imported) ... ..	73,653
<b>TOTAL ... ..</b>	<b>79,668</b>

During the year 2,024 cows from cowsheds in the city were slaughtered at the abattoir with the following result :—

Cows slaughtered.	Disease.	Totally rejected.	Partially rejected.	Organs only.
2,024	Tuberculosis ...	62	21	150
	Other Diseases...	42	12	17

Cows from shippens in the city dealt with at private slaughter-houses :—

Cows slaughtered.	Disease.	Totally rejected.	Partially rejected.	Parts affected.
450	Tuberculosis ...	4	5	Sternum.
	Johnes Disease ...	1	—	—
	Arthritis ...	1	2	Shanks.
	Mastitis ...	1	—	—
	Injury ... ..	—	2	Flanks.

The following carcasses were seized or surrendered for various diseases :—

Cattle;	Calves.	Sheep.	Swine.	Goats.	Horses.	Total.
307	169	486	169	7	18	1,156

**ANIMALS SENT TO KNACKER'S YARD AT CARRUTHERS STREET  
FOR DESTRUCTION.**

Horses destroyed.	Horses sent in dead.	Asses destroyed.	Cows destroyed.	Other animals destroyed.	Total.
69	377	8	123	2	579

The following table shows the result of the examination of carcasses of diseased or injured animals totally or partially rejected :—

Disease.	Bulls.	Bullocks.	Cows.	Heifers	Calves	Sheep	Swine	Goats	Horses
Abscess, Total .....	...	...	...	...	...	3	...	...	...
„ Partial .....	...	...	8	...	...	...	45	...	...
Anaemia .....	...	...	...	...	...	1	...	...	...
Asphyxia .....	...	1	...	1	31	105	40	...	...
Chondroma.....	...	...	...	...	...	2	...	...	...
Decomposition .....	...	2	...	...	3	33	12	...	...
„ Partial .....	...	...	53	...	...	...	1	...	...
Distomatosis .....	...	...	...	...	...	22	...	...	...
Dropsy .....	...	...	17	...	22	168	13	1	1
Emaciation.....	...	...	...	...	30	151	22	6	8
Enteritis .....	...	...	6	...	4	1	2	...	...
Erysipelas .....	...	...	...	...	...	...	1	...	...
Endocarditis .....	...	...	1	...	...	...	...	...	...
Foot & Mouth Disease	...	...	...	...	...	...	2	...	...
Gangrene .....	...	...	4	...	...	...	...	...	...
Gastritis .....	...	...	...	...	...	1	...	...	...
Gastro Enteritis .....	...	...	4	...	...	...	...	...	...
Icterus .....	...	...	...	1	19	...	8	...	...
Immaturity .....	...	...	...	...	40	2	5	...	...
Inflammation.....	...	...	1	...	...	...	2	...	...
Injury, Total.....	2	2	7	...	2	11	2	...	3
„ Partial .....	...	...	100	...	2	31	25	...	...
John's Disease.....	...	...	2	...	...	...	...	...	...
Joint ill.....	...	...	...	...	6	...	...	...	...
Lymphangitis .....	...	...	...	...	...	...	...	...	2
Mammitis Traumatic	...	...	6	...	...	...	...	...	2
Melanosis .....	...	...	...	...	...	...	...	...	2
Neoplasm (Malig.)...	...	...	2	...	...	...	...	...	...
Necrosis .....	...	...	...	...	1	...	...	...	...
Oedema .....	...	...	...	...	...	1	...	...	...
Parturient Apoplexy	...	...	1	...	...	...	...	...	...
Peritonitis .....	...	...	3	...	1	...	5	...	...
Pericarditis (Septic)	...	...	5	...	1	...	3	...	...
Pleurisy, Total .....	...	...	...	...	...	...	4	...	...
„ Partial .....	...	...	2	...	...	...	...	...	...
Pneumonia .....	...	...	4	...	1	4	1	...	2
Pyæmia .....	...	...	2	...	...	...	1	...	...
Pyrexia .....	...	...	2	...	...	...	...	...	...
Sæpraemia .....	...	...	...	...	...	1	...	...	...
Septicæmia .....	1	...	4	...	...	...	...	...	...
Septic Arthritis .....	...	...	10	5	3	...	6	...	...
„ Mastitis.....	...	...	4	...	...	...	...	...	...
„ Metritis.....	...	...	9	...	...	...	...	...	...
Tuberculosis Total	2	5	178	11	5	1	38	...	...
„ Partial .....	1	2	194	...	...	...	578	...	...
Uraemia .....	...	...	...	...	...	...	2	...	...



## ORGANS DESTROYED.

Disease.	CATTLE.					Calves	Sheep	Swine	Horses
	Bulls.	Bullocks.	Cows.	Heifers	TOTAL				
HEADS :—									
Tuberculosis .....	5	36	447	8	496	...	...	...	...
Abscess .....	...	11	91	1	103	...	...	...	...
Actinomycosis ...	...	2	8	...	10	...	...	...	...
Injury .....	...	...	3	...	3	...	...	...	...
Decomposition ...	...	...	4	...	4	12	208	...	...
Foot & Mouth	...	...	...	...	...	...	...	...	...
Contact .....	...	...	...	...	...	...	...	3	...
LUNGS :—									
Tuberculosis .....	4	55	1,560	8	1,627	4	...	166	...
Abscess .....	...	12	80	...	92	...	...	6	...
Echinococci .....	...	13	623	...	636	...	4	29	...
Pleurisy .....	...	3	6	...	9	...	6	17	...
Pneumonia .....	...	...	1	...	1	...	...	1	...
Congestion .....	...	2	159	...	161	...	24	205	...
Decomposition ...	...	...	6	1	7	...	442	148	...
Emphysema .....	...	...	9	...	9	...	...	...	...
Unclassified	...	...	...	...	...	...	...	...	...
Cystic Conditions	...	...	...	...	...	...	44	...	...
Melanosis .....	...	...	1	...	1	...	...	...	...
Foot & Mouth	...	...	...	...	...	...	...	...	...
Contact .....	...	...	...	...	...	...	40	3	...
LIVERS :—									
Tuberculosis .....	3	43	696	4	746	...	...	...	...
Abscess .....	...	15	114	...	129	1	7	6	...
Distomatosis .....	3	424	3,431	34	3,892	...	1028	...	...
Cav. Angioma ...	...	6	143	...	149	...	...	...	...
Cirrhosis .....	...	22	229	...	251	1	...	49	...
Unclassified	...	...	...	...	...	...	...	...	...
Cystic Conditions	...	...	...	...	...	...	38	...	...
Decomposition ...	...	6	92	...	98	2	410	140	...
Congestion .....	...	3	137	...	140	...	29	142	...
Echinococci .....	...	10	147	...	157	...	22	35	...
Melanosis .....	...	...	...	...	...	2	...	...	...
Foot & Mouth	...	...	...	...	...	...	...	...	...
Contact .....	...	...	...	...	...	...	40	3	...
HEARTS :—									
Tuberculosis .....	1	22	323	3	149	3	...	186	...
Pericarditis .....	...	...	4	1	5	...	...	...	...
Decomposition ...	...	...	26	...	26	...	475	131	...
Congestion .....	...	12	...	...	12	...	25	118	...
Abscess .....	...	...	...	...	...	...	...	3	...
Injury .....	...	...	...	...	...	...	20	...	...
Foot & Mouth	...	...	...	...	...	...	...	...	...
Contact .....	...	...	...	...	...	...	40	3	...

## ORGANS DESTROYED.

Disease.	CATTLE.					Calves	Sheep	Swine	Horses
	Bulls.	Bullocks.	Cows.	Heifers	TOTAL				
SPLEENS :—									
Tuberculosis .....	2	18	478	3	501	...	...	...	...
Abscess .....	...	...	4	...	4	...	...	...	...
Decomposition ...	...	...	26	...	26	...	...	...	...
STOMACHS :—									
Tuberculosis .....	1	11	471	3	486	...	...	...	...
Abscess .....	...	...	7	...	7	...	...	...	...
Adhesions .....	...	...	1	...	1	...	...	...	...
Decomposition ...	...	...	12	...	12	...	...	...	...
INTESTINES :—									
Tuberculosis .....	1	11	771	3	786	...	...	...	...
Abscess .....	...	...	7	...	7	...	...	...	...
Decomposition ...	...	...	12	...	12	...	...	...	...
KIDNEYS :—									
Tuberculosis .....	4	19	710	6	739	...	...	...	...
Abscess .....	...	...	1	...	1	...	...	...	...
Cysts .....	...	...	52	...	52	...	...	...	...
White Spots .....	...	...	...	...	...	4	...	...	...
Cirrhosis .....	...	...	36	...	36	...	...	...	...
Decomposition ...	...	18	20	...	38	...	...	46	...
UDDERS :—									
Tuberculosis .....	...	...	20	...	20	...	...	...	...
Decomposition ...	...	...	17	...	17	...	...	...	...
Mammitis .....	...	...	110	...	110	...	...	...	...
Abscess .....	...	...	1	...	1	...	...	...	...
FEET :—									
Foot & Mouth									
Contact .....	...	...	...	...	...	...	...	48	...
TAILS :—									
Decomposition ...	...	...	63	...	63	...	...	...	...



**QUANTITIES OF FISH, RABBITS, POULTRY AND GAME WHICH PASSED  
THROUGH THE WHOLESALE MARKET.**

FISH.				RABBITS.	POULTRY.	GAME.
Wet. Tons.	Dry. Tons	Shell. Tons.	Salmon. Tons.	No. of Packages.	No. of Packages.	No. of Packages.
15,880	3,213	961	6	8,584	4,975	317

The above figures do not include packages of fish, rabbits, etc., dealt with by firms not under the control of the Markets Committee.

**FRUIT AND VEGETABLE MARKETS.**

Large consignments from all over the world passed through the fruit markets, and the wholesale depots in Queen's Square, Liverpool, is the principal distributing centre in the country for imported fruit, and during the year 103,344 tons of vegetables passed through the vegetable market.

**PREMISES VISITED BY THE FOOD INSPECTORS.**

Slaughter houses.	Butchers' shops.	Fruit shops.	Fish & Fruit shops.	Food Hawkers' premises.	Jam factor- ies.	Pickle factor- ies	Food factories	Knackers yards.	Total Visits Paid
6,081	33,744	39,553	32,692	4,223	57	46	644	140	117,180

Seventy-eight samples of foodstuffs were obtained for bacteriological and analytical examination, including fish, shellfish, meat, fruit and tinned foods. The following articles were condemned as unfit for human food, viz.:—Beef, mutton and lamb, etc., 553,954 lbs.; wet and dry fish, 44,723 lbs.; mussels, cockles and winkles, 215 packages; crabs, lobsters, crayfish and prawns, 6,909 lbs.; poultry, 3,130 head; game, 439 head; rabbits, 4,391 head; hares, 150 head; fruit, 834,224 lbs.; vegetables, 542,098 lbs.; tinned foodstuffs, 3,112 tins; eggs, 11,364; egg pulp, 80 lbs.

**LIVER FLUKE IN SHEEP IN 1926.**

A serious loss to the Welsh sheep farmers was occasioned a few years ago by the prevalence of the Liver Fluke (*Distomum Hepaticum*). The

efforts made by the department of agriculture in North Wales to eradicate the disease by spraying the pastures and brooks with chemical substances to destroy the small water snail which the liver fluke infests in one of its intermediate stages of growth seem to have had successful results. Careful observations on the efficacy of the various treatments have been made, and as a large number of Welsh sheep are slaughtered in Liverpool from time to time, strict examinations were made and records kept by the city food inspectors of all the Welsh and other sheep slaughtered in the city. It is interesting to observe that so far as Welsh sheep slaughtered in the city are concerned, the disease has shown a remarkable decline, there being fewer carcasses or livers condemned on account of this condition. The numbers of Welsh sheep slaughtered, however, was less, whereas the number of Scotch sheep increased.

The following table shows the number of carcasses and livers condemned for the presence and effects of fluke infestation:—

Month.	CARCASSES REJECTED.				LIVERS REJECTED.			
	England	Ireland	Scotland	Wales	England	Ireland	Scotland	Wales
January	6	...	...	2	30	48	62	5
February	4	...	1	...	25	34	51	2
March ...	1	...	1	...	5	21	18	6
April ...	...	...	...	3	15	9	9	...
May ...	...	...	...	...	3	18	5	3
June ...	...	...	...	...	12	4	...	3
July ...	...	...	...	...	19	20	6	6
August ...	...	...	...	...	18	42	14	26
Sept. ...	...	...	...	...	108	61	68	57
October...	...	1	1	...	85	97	101	144
November	...	...	1	...	53	73	39	34
December	...	...	4	...	10	42	42	11
Total for 1926	11	1	8	5	383	469	515	297



### DAIRIES, COWSHEDS AND MILKSHOPS.

The Milk and Dairies (Consolidation) Act, 1915, which came into operation on the 1st day of September, 1925, repealed the Dairies, Cowsheds and Milkshops Orders of 1885, 1886 and 1899, and the regulations made by local authorities under Article 13 of the Order of 1885, also sections 488 to 494 inclusive of the Liverpool Corporation Act, 1921.

The sections 475 to 487 inclusive of the Liverpool Corporation Act, 1921, dealing with the licensing of cattle are not so repealed.

The Milk and Dairies Order, 1926, dated July 6th, 1926, made under the Milk and Dairies (Consolidation) Act, 1915, came into operation on October 1st, 1926. The order provides for the registration of all persons carrying on the trade of cowkeepers or dairymen, and provision is also made for the registration of all dairies, including all farms, and all places at which milk is produced for sale, whether in large or small quantities.

Nationally, the Milk and Dairies Order, 1926, is an improvement on its predecessors, as the requirements are applicable to all areas alike and should, if it be properly enforced, ensure uniformity of administration.

To many outside areas, however, the administration of the order has been made difficult, and rendered somewhat inefficient by the postponement of some of the clauses, viz., those dealing with water supply, lighting, ventilation and pavement of cowsheds. Further, it merely forbids the keeping of swine and poultry in any cowshed or place where cows are milked.

Fortunately, however, section 482 of the Liverpool Corporation Act, 1921, which is not repealed, and which deals with the licensing of cattle, requires "That all licensed premises shall at all times be kept in a cleanly and wholesome order and condition, and properly drained, ventilated, and supplied with water, and no animals shall at any one time be kept in any licensed premises, other than the animals of the

kind specified in the licence." By the non-repeal of this and other sections of this act, Liverpool is still in advance of national legislation so far as cowsheds and the production of milk within the city is concerned.

The order provides that:—

"As soon as possible after milking, the milk of each cow shall  
"be removed from the cowshed to a suitable milk room,"

and also requires

"every cowkeeper to cause the milk to be cooled to a temperature  
"of not more than five degrees Fahrenheit higher than the  
"temperature of the water supply available for cooling."

For the past  $3\frac{1}{2}$  years this department, whilst carrying out the ordinary routine work, has succeeded in educating the Liverpool cowkeepers to the advantages which were to be gained by the provision of such a milk room. Upwards of 150 of these cooling rooms have been built, and the cowkeepers find it has resulted in the production of cleaner milk, having correspondingly increased keeping qualities.

The installation of a milk cooling room separate from and adjoining the outer walls of the cowshed as recommended by the Public Health Department saves labour and prevents contamination of the milk by unnecessary exposure, as each pail of milk is at once removed from the atmosphere of the cowshed and cooled. This cooling room was in advance of legislation, and gave such satisfaction to those who adopted it, that the committee of the Liverpool and District Cowkeepers' Association advised all their members to adopt the Liverpool type of milk cooling room.

The carrying out of the order relating to the provision of milk cooling rooms has increased the work of the department, but satisfactory



progress is being made, and it is hoped that at the end of the current year the whole of the Liverpool cowkeepers will have complied with the requirements as regards the provision of these rooms.

The majority of Liverpool cowkeepers are already cooling their milk, as they have good water supplies; they realise that efficient cooling inhibits bacterial growth and gives improved keeping qualities, ensuring the body of milk retaining its uniform fat content.

The definition of a dairy has been altered and does not now include :—

“A shop from which milk is not supplied otherwise than in  
“the properly closed and unopened receptacles in which it was  
“delivered to the shop.”

Owing to this definition many general shops are now selling sterilized bottled milk, as the premises do not require to be registered, providing the milk is sold to the customer in the unopened bottles and in the condition in which it was delivered by the wholesaler to the retailer.

This new departure, so far as the sale of milk is concerned, has a tendency to cause complaints as to the sale of milk from unregistered premises. On careful investigation the basis is generally found to be that the purchaser on receiving the bottle from the shopkeeper, opens it and pours the milk into a jug, and returns the bottle to the seller, presumably in order to save the payment of the required deposit and the trouble of returning the empty bottle.

The order also requires every “cowkeeper and dairyman to make known the provisions of the order to all persons in his occupation so far as such provisions impose any duties and restrictions on such persons.”

It is here that the educational propaganda work gives such valuable results. The explanation of acts and orders to the members of the trade

is largely the method adopted by this department. The educated dairyman is thus enabled to train his employees. In the few exceptions in which it proves ineffective the primary application in these cases makes the older methods far more effective when they are compelled to be applied. A sharp notice calling the offenders' attention to the contraventions obtains the desired result.

#### STATISTICS RESPECTING COWSHEDS.

Number of applications to keep cows on premises not previously						<u>1926</u>
	licensed	...	...	...	...	2
"	"	for re-issue of licence	...	...	...	1
"	cows applied for	...	...	...	...	26
"	"	granted	...	...	...	26
"	applications refused	...	...	...	...	0
	for transfer to fresh tenants of cow-					
	sheds previously licensed	...	...	...	...	12
"	"	granted	...	...	...	12
"	"	refused	...	...	...	0
"	"	for additional stock	...	...	...	1
"	cowsheds on register 31st December, 1925	...	...	...	...	286
"	"	"	"	1926	...	279
"	cows licensed to be kept within the city area	...	...	...	...	4,727

#### COWSHED INSPECTION.

				<u>1925.</u>	<u>1926.</u>
Number of inspections of cowsheds	...	...	...	2,504	2,198
"	found incorrect	...	...	76	72

Forty-six notices were issued to occupiers directing their attention to contraventions of regulations, and were at once complied with—prosecutions being unnecessary.

The number of cowsheds in the city during the years 1918 to 1926, 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.
1918	...	339	...	5,487	...	1
1919	...	323	...	5,228	...	2
1920	...	295	...	4,942	...	7
1921	...	296	...	4,921	...	1
1922	...	294	...	4,880	...	3
1923	...	293	...	4,883	...	1
1924	...	291	...	4,832	...	3
1925	...	286	...	4,830	...	2
1926	...	279	...	4,727	...	2

MILKSHOPS.

				<u>1925.</u>		<u>1926</u>
Number of new applications for registration	...			40	...	28
„ transfers	„	„	...	75	...	75
Total number of	„	„	...	115	...	116
Number of applications granted	...	...	...	98	...	103
„ „ withdrawn	...	...	...	10	...	5
„ „ in abeyance	...	...	...	7	...	8
Number of milkshops on the register at the end of 1922	...					691
„ „ „ „ 1923	...					743
„ „ „ „ 1924	...					790
„ „ „ „ 1925	...					787
„ „ „ „ 1926	...					797

DAIRIES AND MILKSHOPS.

				<u>1925.</u>	<u>1926.</u>
Number of inspections of dairies and milkshops	...			7,793	7,216
„ found incorrect	...	...	...	87	68

Sixty-eight caution notices were issued to occupiers of milkshops for contraventions of the regulations, and were at once complied with—prosecutions being unnecessary.

## MILK SPECIAL DESIGNATION ORDER, 1923.

Designations.	OBLIGATIONS ON PRODUCERS.					OBLIGATIONS ON SELLERS.	
	Veterinary examination and certificate to Licensing Authority.	Tuberculin testing and production of certificate.	New Animals.	Reacting Animals and Diseased Animals.	Register, marking and isolation of animals.	Bottling of Milk.	Regarding Seals. Bacteriological Standards.
"Certified" ...	3 monthly.	6 monthly.	To be tuberculin tested before adding to herd.	Removed or not added and report to Licensing Authority <i>re</i> disposal.	Keeping of Register and marking of animals is compulsory. Herd to be isolated.	Bottled immediately and sealed with disc and cap with name and address, date, and designation	Seal to be unbroken on delivery. Not over 30,000 bacteria per c.c. nor any colon bacilli in 1/10th c.c. on sample before delivery.
Grade "A"— Tuberculin tested ...	Ditto.	ditto.	ditto.	ditto.	ditto.	ditto.	Same as for Grade "A" below.
Grade "A" ...	3 monthly for producers.	—	—	Diseased or Tubercular animals to be removed	Ditto.	May be bottled or in unventilated sealed container labelled and marked with address, date and designation.	Not over 200,000 bacteria per c.c. nor any colon bacilli in 1/100 c.c. on sample before delivery.
Grade "A"— "Pasteurised" ...	Grade "A" milk that, after pasteurisation, as required by the Ministry of Health, contains not more than 30,000 bacilli per cubic centimetre and no coliform bacillus in 1/10 c.c. All other conditions as required for Grade "A" milk.						
"Pasteurised"	Milk to be retained at a temperature of not less than 145° and not more than 150° Fahr. for at least half-an-hour, and immediately cooled to a temperature of not more than 55° Fahr. 1. The milk shall not be so heated more than once. 2. The type of apparatus used and methods employed shall be satisfactory to Licensing Authority.						Not more than 30,000 bacteria per c.c. nor any colon bacilli in



The number of vendors' licences issued during the year under the above order are as follow :—

Certified milk	...	...	...	...	...	6
Grade A Tuberculin tested	...	...	...	...	...	3
Grade A	...	...	...	...	...	1
						—
						10
						—

#### 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>1925.</u>		<u>1926.</u>
Number of premises under inspection	...	1,157	..	1,143
„ visits made	...	2,408	...	2,144
„ caution notices issued	...	39	...	12

#### PIGGERIES.

In 1926, 10 applications, involving the keeping of 297 pigs, were made, 9 applications were granted, and one for the keeping of 20 pigs was refused.

There are now on the register 114 piggeries licensed for the keeping of 2,326 pigs, the average number kept being 1,118; 473 visits of inspection of premises were made during the year.

## TUBERCULOSIS AND THE MILK SUPPLY.

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The two principal aspects of milk supervision which concerns the department are (a) the prevention of tuberculosis arising from milk from infected cattle, and (b) to ensure the supply to the public of a clean, wholesome milk, free from dirt and other contamination.

For convenience of consideration the milk supply to the city may be divided into two classes, (i) that produced from cows within the city, and (ii) that coming from farms outside the city boundary.

The chief veterinary officer has kindly supplied the following information of the work during the year 1926 :—

### MILK PRODUCED WITHIN THE CITY.

About one-third of the total milk consumed in Liverpool is produced within the city from approximately 3,840 cows, this number being a decrease of 30 from those of 1925. Licensed cowsheds number 279, a decrease of 7; with licenses to hold 4,727 cows, a decrease of 103.

All cattle in the city are clinically examined at intervals.

This routine veterinary examination has proved its value in the early elimination of diseased cows. The numbers of such are now likely to remain fairly constant year by year.

All cowkeepers are required to notify any suspicious condition in the udders of their cows.

Samples of milk are constantly being taken by the inspectors of the Health department for bacteriological examination. Of 234 samples taken during the year, 12 were referred to the chief veterinary officer as being tuberculous, resulting in the detection of 3 tuberculous udders and in the 9 remaining cases 7 of the herds were shown to be giving non-tuberculous milk, a tuberculous cow having been discovered in each of two herds as a result of routine visits immediately prior to receipt of information concerning the tuberculous bulk samples.

Forty-eight cows were notified to the department by the owners as suspicious, 7 of which were found to be infected with tuberculosis of the udder.



The town cowsheds are subjected to periodical visits by a sanitary inspector of the department when regard is paid to general hygiene and cleanliness of premises, cattle, utensils, etc.

During 1926, 1,196 such visits were paid.

Considerable progress has been made in regard to the hygiene of the cowsheds and production of clean milk, many suggestions made by the inspectors of the department having been adopted, but there is still much to do until the ideal is attained. It is however evident that a steadily increasing interest is being taken in the production of clean milk in respect of which the policy of the department is sympathetic education rather than harsh methods imposed on the unwilling.

The following is a table of the veterinary inspection of cows in town cowsheds, together with figures for the previous five years for comparison :—

Year.	No. of Visits to Cowsheds.	No. of cases notified by owners.	Routine and other Visits to Cowsheds.	No. of Cows examined.	No. of Cows with Tuberculosis of the udder.
1921	91	7	84	1,400	21 or 1·5%
1922	100	8	92	1,535	6 or 0·39%
1923	130	6	124	1,849	15 or 0·81%
1924	714	17	697	8,949	26 or 0·28%
1925	780	63	717	11,161	21 or 0·18%
1926	825	48	777	10,515	20 or 0·19%

Nineteen control samples involving groups of cows were taken, of which four were returned tuberculous.

#### MILK PRODUCED OUTSIDE THE CITY.

Since 1st September, 1926, the legislative powers, previously held by the city veterinary officers, to deal with diseased herds whose milk is consumed in the city, have been rescinded. The onus of such work is now placed on the local authority of the producing district.

The chief veterinary officer has made a practice of being present at examinations of suspected herds, and, up to date, the county officers have adopted all suggestions made as to the standard of action required.

During the year, thirty-four cases of infected country milk have been investigated.

The following is a table of veterinary inspection of cows in country cowsheds, together with figures for the previous five years for comparison :—

Year.	No. of visits to Farms.	No. of Farms affected.	No. of Re-visits.	Total Visits.	No. of Cows examined.	No. of Cows with Tuberculosis of the udder.
1921	40	23	18	58	2,225	10 or 0·44%
1922	49	34	21	70	2,324	16 or 0·68%
1923	36	36	19	55	1,754	17 or 0·97%
1924	98	25	15	113	3,802	17 or 0·44%
1925	74	29	19	93	3,315	17 or 0·51%
1926	62	36	2	64	*2,690	10 or 0·37%

\* The falling off in the number of cows examined is due to the introduction of the Milk and Dairies (Consolidation) Act.

The farms whence milk is derived for use at the Liverpool City Hospitals and at the infant welfare centres, are also periodically visited, the herds therein examined clinically and the general hygiene of the milk production observed.

The following tables shows the number of visits paid during the year 1926 :—

#### MILK SUPPLIED TO THE CITY HOSPITALS.

No. of Farms.	No. of Visits paid.	No. of Cows examined.
5	20	755

#### MILK SUPPLIED TO THE INFANT WELFARE CENTRES.

No. of Farms.	No. of Visits paid.	No. of Cows examined.
8	28	2,421

The figures shown in the above two tables are also included in the table of veterinary inspections of cows in country cowsheds.



## BACTERIOLOGICAL EXAMINATION OF MILK.

From January, 1901, to December, 1926, 10,766 samples of milk from sources outside the City were submitted for bacteriological examination, and 738 of the samples were found to be contaminated by tubercle bacilli, this being equal to 6.8 per cent.

The 492 farms from which the contaminated milk was supplied were visited and the herds examined, the number of cows being 23,016; 243 cows were regarded as "suspicious," and the farmers were requested to isolate them pending a report of the City Bacteriologist on samples of milk taken direct; 551 samples were taken in this way, and 132 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 showed that the remainder of the herds were not giving tuberculous milk.

In the earlier years of the operation of the Liverpool Corporation Act, 1900 (now included in the Liverpool Corporation Act, 1921), 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 the herds.

As a general rule, when first visiting 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, and the walls and ceilings 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, etc., has been instrumental in bringing about more activity in regard to these matters in country districts.

During the same period 5,835 samples of milk from town cowkeepers were submitted for bacteriological examination, and 246 of the samples were found to be contaminated by tubercle bacilli, this being equal to 4·2 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 following tables give particulars relating to the samples taken and result of examination, together with the number of cows examined :—

TABLE RELATING TO COUNTRY SAMPLES.

Year.	Samples from Bulk.			FARMS.			Samples direct from individual cows at farm		
	No. taken.	Tubercular.	Percentage Tubercular.	Farms affected.	Cows examined.	Cows suspected.	No. taken.	Tubercular.	Percentage Tubercular.
1919	346	26	7·51	6	312	1	3	1	53·33
1920	800	56	7·0	18	1,225	8	14	4	28·57
1921	507	54	10·65	23	2,225	10	37	10	27·02
1922	590	53	8·98	34	2,324	16	45	15	33·33
1923	593	62	10·45	36	1,754	17	39	18	46·15
1924	549	57	10·38	25	3,802	17	60	14	23·33
1925	482	36	7·46	29	3,315	17	43	14	32·55
1926	449	34	7·57	36	2,690	10	36	6	16·66
TOTAL ...	6,812	534	7·83	268	23,745	123	412	99	24·02

TABLE RELATING TO TOWN SAMPLES.

Year.	Samples from Bulk.			Cowsheds.	
	Number taken.	Tubercular.	Percentage Tubercular.	Cows examined.	Cows suspected.
1919	163	4	2·45	867	2
1920	222	17	7·66	934	6
1921	302	46	15·23	1,400	21
1922	244	11	4·50	1,535	6
1923	309	19	6·14	7,012	15
1924	232	22	9·48	8,949	26
1925	211	8	3·80	11,161	21
1926	234	13	5·55	10,515	20
TOTAL ...	3,010	209	6·90	48,627	186



**SALE OF FOOD AND DRUGS ACTS**  
and Various Orders and Regulations relating to Food Supplies.

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The Sale of Food and Drugs Act, and its various amendments, are designed to safeguard the public from purchasing articles injurious to health or not of the nature, substance and quality demanded.

Great care is necessary in procuring samples, and in submitting them for analysis, or very misleading results will ensue. All samples of food or drugs are taken either by or under the superintendence of trained and qualified Inspectors of the Health Department. It is of the greatest consequence that trained and practised persons should be employed for this purpose, and it is necessary from time to time to employ women or young people as agents, to go into the shop to purchase the articles, and as soon as the agent receives them, the Inspector enters the shop and completes the formalities which the Act requires.

Only a few purchases are made of those articles which, experience shows, are not likely to be adulterated. On the other hand, when enterprising firms, seeking new fields for adulteration and profit, place suspicious articles on the market, it becomes necessary, sometimes, to take a considerable number of the articles before the fraud can be detected and checked.

The practice of taking samples "informally" (*i.e.*, without any intimation to the vendor that samples are to be analysed) has been continued throughout the year. This practice is very valuable, as it saves time and trouble whilst causing no annoyance to honest shopkeepers, whose objections to the taking of samples, with all the formalities required by the Act, are that the counter space is occupied for the division of the samples into three parts, and, in addition, the action excites curiosity and possibly suspicion on the part of regular customers.

The tables on the following pages give a summary of the samples analysed during the year.

DETAILS OF SAMPLES OF MILK OBTAINED FOR CHEMICAL ANALYSIS.

	1925.	1926.
Number of samples purchased on week-days in town	1,353	1,167
„ informations ... ..	20	16
„ samples taken at railway stations on week-days ... ..	1,413	1,200
„ informations ... ..	12	15
„ samples purchased on Sundays in town ...	180	169
„ informations ... ..	8	1
„ samples taken at railway stations on Sundays ... ..	146	67
„ informations ... ..	1	0
„ samples taken at City Hospitals ... ..	155	111
„ informations ... ..	—	—
„ samples taken at Corporation Infant Welfare Centres and Day Nurseries...	360	314
„ informations ... ..	—	—
„ samples taken at other Institutions ...	440	405
„ informations ... ..	—	3

MARGARINE ACT.

	1925.	1926.
Number of visits to wholesale dealers in margarine..	88	80
„ visits to shops... ..	2,595	2,755
„ visits to other places ... ..	2,133	1,982

PUBLIC HEALTH (MILK AND CREAM) REGULATIONS,  
1912 and 1917.

Report for the year ending 31st December, 1926.

1. MILK AND CREAM NOT SOLD AS PRESERVED CREAM.

Number of samples examined for the presence of a preservative :—  
Milk, 3,433; Cream, 36.

Number in which a preservative was reported to be present :—

(a) Milk ... ..	0
(b) Cream ... ..	1

(Vendor 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	...	...	...	12
Correct statements made...	...	...	...	12
Incorrect statements made	...	...	...	Nil.

- (b) Determinations made of milk fat in cream sold as Preserved Cream :—

Above 35 per cent.	...	...	...	12
--------------------	-----	-----	-----	----

- (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.

SPECIAL EXAMINATIONS.

The total number of samples submitted during 1925 and 1926 for special examination was 130 and 89, 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 number of licences issued under this Act during the year 1926 was 23.

Summary of Samples submitted for Analysis from January 1st to December 31st, 1926,  
and other Statistical details.

INFORMAL SAMPLES.			Nature of Sample.	FORMAL SAMPLES.				
Number taken.	Number genuine.	Adulterated. Sch'dule A. Sch'dule B.		Number taken.	Number genuine.	Adulterated. Sch'dule A. Sch'dule B.	Number caut'nd.	Infor- mations.
5	5	—	Arrowroot.....	24	24	—	—	—
5	5	—	Barley .....	75	73	—	2	—
32	32	—	Beer and Stout .....	—	—	—	—	—
—	—	—	Bread .....	26	26	—	—	—
49	47	2	Butter .....	427	427	—	—	—
4	4	—	Cake Flour .....	8	8	—	—	—
14	14	—	Cheese .....	21	21	—	—	—
6	6	—	Cocoa .....	61	61	—	—	—
30	27	3	Condensed Milk .....	—	—	—	—	—
9	9	—	Coffee and Mixtures .....	84	84	—	—	—
1	1	—	Corn Flour .....	23	23	—	—	—
150	149	1	Confectionery .....	55	55	—	—	—





## SUMMARY OF SAMPLES, &amp;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.	
11	9	1	1	Lemon Cheese .....	—	—	—	—	—
77	76	1	—	Margarine.....	27	—	—	—	—
460	436	16	8	Milk.....	2973	153	59	118	35
—	—	—	—	Do. Skimmed .....	11	—	—	—	—
—	—	—	—	Do. Separated .....	11	—	—	—	—
—	—	—	—	Do. Sterilised .....	19	1	—	1	—
—	—	—	—	Do. Butter .....	2	1	—	1	—
3	3	—	—	Oatmeal and preparations.....	40	—	—	—	—
4	4	—	—	Preserved peas.....	—	—	—	—	—
9	8	—	1	Rice and ground rice .....	174	1	38	1	—
7	7	—	—	Self-raising flour .....	58	—	—	—	—
6	6	—	—	Sugar.....	80	—	—	—	—
15	15	—	—	Syrup and treacle .....	2	—	—	—	—



## SUMMARY OF SAMPLES, &amp;c.—continued.

INFORMAL SAMPLES.				FORMAL SAMPLES.						
Number taken.	Number genuine.	Adulterated.		Nature of Sample.	Number taken.	Number genuine.	Adulterated.		Number caught.	Informations.
		Sch'dule A.	Sch'dule B.				Sch'dule A.	Sch'dule B.		
1	1	—	—	Tapioca .....	69	69	—	—	—	—
8	8	—	—	Temperance beverages .....	35	27	7	1	7	—
9	9	—	—	Tinned and potted meats .....	—	—	—	—	—	—
18	17	1	—	Tinned and potted Fish .....	—	—	—	—	—	—
6	6	—	—	Tinned Fruits .....	—	—	—	—	—	—
2	2	—	—	Vinegar .....	10	10	—	—	—	—
11	11	—	—	Wines and Spirits .....	37	37	—	—	—	—
90	88	1	1	Drugs .....	6	6	—	—	—	—
75	73	2	—	Miscellaneous .....	251	250	—	1	—	—
1232	1189	32	11		5106	4826	171	109	136	35

## CONDENSED AND DRIED MILK REGULATIONS, 1923.

### *Condensed Milk.*

In accordance with the terms of Section 8 of the Milk and Dairies (Amendment) Act, 1922, the Minister of Health issued regulations relating to the sale of condensed milk. Definite standards are fixed by the regulations, and it is clearly set forth that a label must bear a definite statement of the equivalent amount of liquid milk which the tin contains, and for the purposes of the Order calculations are made on the basis of not less than 12·4 per cent. of milk solids, of which not less than 3·6 per cent. should be milk fat.

There are three kinds of offences under the regulations :—

1. The label may not be as described.
2. The statement of equivalence may be incorrect.
3. The standard of composition may be infringed.

Labelling, etc.	Definition of " Milk " for purpose of Regulations.	Composition required under Regulations.																												
CONDENSED MILK.																														
Milk container to be labelled as prescribed with name and address of manufacturer or dealer.	MILK—12·4% of milk solids, including not less than 3·6% of milk fat.	All condensed milk shall contain not less than the appropriate percentage of fat and milk solids as follows :—																												
The equivalent weight in pints of Milk.	SKIM MILK—Milk which contains not less than 9% of milk solids other than milk fat.	<table><thead><tr><th></th><th>%</th><th>Milk Solids</th><th>Fat</th></tr></thead><tbody><tr><td>Full Cream—</td><td></td><td></td><td></td></tr><tr><td>Unsweetened</td><td>... 9·0</td><td>31</td><td>1</td></tr><tr><td>Sweetened</td><td>... 9·0</td><td>31</td><td>1</td></tr><tr><td>Skimmed Cream—</td><td></td><td></td><td></td></tr><tr><td>Unsweetened</td><td>... —</td><td>20</td><td>2</td></tr><tr><td>Sweetened</td><td>... —</td><td>20</td><td>2</td></tr></tbody></table>		%	Milk Solids	Fat	Full Cream—				Unsweetened	... 9·0	31	1	Sweetened	... 9·0	31	1	Skimmed Cream—				Unsweetened	... —	20	2	Sweetened	... —	20	2
	%	Milk Solids	Fat																											
Full Cream—																														
Unsweetened	... 9·0	31	1																											
Sweetened	... 9·0	31	1																											
Skimmed Cream—																														
Unsweetened	... —	20	2																											
Sweetened	... —	20	2																											
In case of skimmed milk (in $\frac{1}{2}$ " type, "Unfit for Babies." Labelling as above not required if for export or in tin exceeding 5 lbs. or in a refreshment room or restaurant for consumption on premises).																														
No imports into England or Wales unless in conformity with above.		Samples may be obtained as under Food and Drugs Acts.																												

During the year, 36 samples of condensed milk were examined, nine of which were below standard, and the vendors in each case were cautioned.

### *Dried Milk.*

The regulations apply to dried milk to which no other substance has been added, and to the dried milk contained in any powder or solid of which not less than 70 per cent. consists of dried milk. There



are standards laid down for dried full cream milk, dried partly skimmed milk, and dried skimmed milk. As in the case of the condensed milk regulations, the statement of equivalence is to appear on the label, which is also to contain in the case of infants' foods, to which the regulations apply, a notice of any substance added.

When dried milk is sold loose, a printed label or notice is to be delivered to the purchaser.

Labelling, etc.	Definition of "Milk" for purpose of Regulations.	Composition required under Regulations.
<p><b>DRIED MILK.</b> Milk receptacle to be properly labelled, giving equivalent in pints of milk.</p>		
A. Dried Full Cream— No further matter required.		<p>Dried milk must contain not less than the following percentage of milk fat :— A. Milk, full cream ... 26% B. Milk, <math>\frac{3}{4}</math> cream ... 20% C. Milk, <math>\frac{1}{2}</math> cream ... 14% D. Milk, <math>\frac{1}{4}</math> cream ... 8% Samples may be obtained as under Food &amp; Drugs Acts.</p>
B. Dried $\frac{3}{4}$ Cream, and		
C. Dried $\frac{1}{2}$ Cream— Partly skimmed milk containing 8%-26% milk fat. Label "Should not be used for babies except under medical advice."		
D. Dried $\frac{1}{4}$ Cream— Dried skimmed milk containing less than 8% milk fat. Label, $\frac{1}{2}$ " type, "Unfit for Babies."		
	<p style="text-align: center;">%    % Milk Milk Fat. Solids           &amp; Fat.</p> <p>Milk ... 3.6 12.4 Cream Milk ... 2.7 11.6 Cream Milk ... 1.8 10.8 Cream Milk ... .9 9.9 "Skimmed milk" means milk which contains not less than 9% of milk solids other than milk fat.</p>	

During the year 15 samples of dried milk were examined, and all of them were correct.

### ARSENIC ON APPLES.

Arsenic was found on the surface of certain apples and pears in the previous year, but in every case it was ascertained that it was due to the spraying with a view to the destruction of the Codlin Moth. This spraying gave rise on evaporation to a deposit which in some cases contained a small amount of arsenious oxide. Arrangements were immediately made to sample consignments of apples and pears arriving in this port. Reports show much variation as to quantity of deposit, which was found chiefly at the stem and calyx ends, but in no

case was it in harmful amount. In many of the samples examined arsenic was not present. These samples still continue to be taken by the Health Department.

The subject has been under the consideration of the Ministry of Health, who have been in touch through the usual channels with the foreign Governments concerned, with the result that methods are now being adopted which will avoid the presence of this substance on fruit. In the United States, for example, already growers and packers are installing apparatus for cleansing the surface of apples during grading.

#### FERTILISERS AND FEEDING STUFFS ACT, 1906.

On 1st January, 1907, a Fertilisers and Feeding Stuffs Act, which replaced the old Act of 1893, came into operation.

Under it the City Analyst was appointed official agricultural analyst, and the three inspectors under the Sale of Food and Drugs Act were appointed official samplers.

A certain remuneration was agreed to in respect of the work done under the Act.

Total number of samples submitted during the following years:—

1920	...	...	...	...	...	...	18
1921	...	...	...	...	...	...	25
1922	...	...	...	...	...	...	18
1923	...	...	...	...	...	...	13
1924	...	...	...	...	...	...	61
1925	...	...	...	...	...	...	30
1926	...	...	...	...	...	...	52



PUBLIC HEALTH (PRESERVATIVES IN FOOD)

REGULATIONS, 1925, AS AMENDED 1926-1927.

Following upon the report of the Departmental Committee on the use of preservatives or colouring matters in food, the Minister of Health in the exercise of his powers, issued regulations relating to preservatives in food.

The dates on which the principal regulations as now amended will come into operation are as follows :—

- (1) All foods except those specified below ... 1st January, 1927
  
- (2) Bacon, ham, egg yolk and articles of food containing preservative necessarily introduced by the use in their preparation of preserved margarine ... 1st July, 1927
  
- (3) Butter, cream and articles of food containing preservative necessarily introduced by the use in their preparation of preserved bacon, preserved ham, preserved egg yolk or preserved cream ... 1st January, 1928
  
- (4) Articles of food containing preservative necessarily introduced by the use in their preparation of preserved butter ... 1st July, 1928

The schedule states the kind and quality of preservatives permissible, and names the articles to which it may be added. It also prohibits the use of colouring matters in food which are named in the schedule. It prescribes for the labelling of articles of food containing preservatives and for preservatives themselves.

## REPORT OF THE CITY BACTERIOLOGIST, 1926.

During the year 1926, 31,439 specimens were examined for the Public Health, Port Sanitary, Water and Baths and Wash-houses Departments, as compared with 32,510 for the year 1925. These specimens may be grouped as follows :—

1. Milk and other foodstuffs.
2. Water.
3. Rats, etc., for possible infection with the bacillus of Plague.
4. Material from infectious diseases in man (Diphtheria, Vincent's Angina, Typhoid Fever, Tuberculosis, etc.).
5. Venereal Diseases.
6. Material from animals with suspected infection.
7. Other specimens.

### MILK AND OTHER FOODSTUFFS.

The following samples have been examined :—

(1) Fresh Milks—			
City Hospitals, and other Institutions	...	...	157
Infant Welfare Centres	...	...	81
Milk Shops, Railway Stations, etc.	...	...	578
			816
(ii) Tinned Milks	...	...	9
(iii) Other foodstuffs—shell-fish, tinned and potted meats, etc.	...	...	44
			869

(i) *Fresh Milks*.—City Hospitals: Of the 157 samples examined 16 shewed no evidence of *B. Coli* in 1 c.c., 14 contained *B. Enteritidis* Sporogenes in 10 c.c.; 2 contained Streptococci, and *B. Tuberculosis* was found in 11 samples. A bacterial count was also done in 24 of these samples. One sample was examined for diphtheria bacillus, and proved negative.



Infant Welfare Centres : Of the 81 samples examined, 10 shewed no evidence of *B. Coli* in c.c., 5 contained *B. Enteritidis Sporogenes* in 10 c.c., and *B. Tuberculosis* was found in 6 samples. A bacterial count was also done in 2 of these samples.

Milk Shops, Railway Stations, etc. : Of the 578 samples examined 139 shewed no evidence of *B. Coli* in 1 c.c., 35 contained *B. Enteritidis sporogenes* in 10 c.c., 6 contained *Streptococci*, and *B. Tuberculosis* was found in 38 samples. A bacterial count was also done in 13 of these samples. Ten samples shewed the presence of acid-fast bacilli on microscopical examination. One sample was examined for the presence of diphtheria bacillus and proved negative.

Thus, in 816 samples of milk, 55 were found to be infected with *B. Tuberculosis*. This, at first sight, seems a large proportion, but many of the samples were in duplicate or triplicate, and it is impossible to draw any conclusions from these figures as to the percentage of tuberculosis in the milk supply of the city.

(ii) *Tinned Milks*.—Of the 9 samples of tinned milks examined, 2 were sterile, 1 was putrefactive, and 1 sample of "Sterilized" cream contained 228,000 bacteria per c.c.

(iii) *Other Foodstuffs*.—Of the 32 samples of tinned, potted, etc., foodstuffs examined, 8 were sterile, 1 meat pie shewed the presence of organisms of the mesentericus group, and 1 organisms of the *Sporogenes* group; 1 sample of potted shrimps shewed the presence of *B. Enteritidis Sporogenes*, and 1 sample of chocolate was putrefactive, and contained organisms of the mesentericus group.

There were 9 samples of butter, cheese, etc., examined for *B. Tuberculosis*, and all proved negative.

Of the 12 samples of shell-fish examined, none shewed evidence of any contamination with typhoid organisms, although 3 samples shewed the presence of *B. Enteritidis Sporogenes*, and 1 evidence of putrefaction.

## WATER.

There were 371 samples of water examined, viz. :—

For the Water Engineer—

Daily samples	...	...	...	...	...	305
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Monthly samples—

Prescot—Vyrnwy	...	...	...	...	11
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„ Rivington	...	...	...	...	11
-------------	-----	-----	-----	-----	----

George Holt Well	...	...	...	...	9
------------------	-----	-----	-----	-----	---

John Holmes Well	...	...	...	...	7
------------------	-----	-----	-----	-----	---

	—	38
--	---	----

Special samples from—

Deanwood Stream	...	...	...	...	10
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Prescot—Vyrnwy	...	...	...	...	1
----------------	-----	-----	-----	-----	---

„ Rivington	...	...	...	...	1
-------------	-----	-----	-----	-----	---

George Holt Well	...	...	...	...	1
------------------	-----	-----	-----	-----	---

John Holmes Well	...	...	...	...	8
------------------	-----	-----	-----	-----	---

Windsor Yard	...	...	...	...	4
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Prescot Road Hydrant	...	...	...	...	1
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Dunmore Road Hydrant	...	...	...	...	1
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	—	27
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For the Public Health Department	...	...	...	1
----------------------------------	-----	-----	-----	---

	—	371
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The water throughout the year, whether from the wells or from Prescot, was, from a bacterial standpoint, satisfactory.

## RATS, &amp;c.

During the year 1,654 rats from warehouses, &c., within the city, were examined, and no evidence of the bacillus of plague was found in any of them.

## MATERIAL FROM INFECTIOUS DISEASES IN MAN.

(a) Swabs from suspected cases of Diphtheria :—

	Posi- tive.	Doubt- ful.	Nega- tive.	Total.
City hospitals	999	1	7,376	8,376
Infant welfare centres	11	5	66	82
Private practitioners, etc.	217	—	1,175	1,392
	<u>1,227</u>	<u>6</u>	<u>8,617</u>	<u>9,850</u>



## (b) Swabs from suspected cases of Vincent's Angina :—

	Posi- tive.	Nega- tive.	Total.
City hospitals ... ..	14	17	31
Private practitioners, etc. ... ..	14	9	23
	<hr/>	<hr/>	<hr/>
	28	26	54
	<hr/>	<hr/>	<hr/>

## (c) Blood from suspected cases of typhoid fever :—

	Positive.	Negative.	Total.
City hospitals ... ..	41	57	98
Private practitioners, etc. ... ..	7	29	36
	<hr/>	<hr/>	<hr/>
	48	86	134
	<hr/>	<hr/>	<hr/>

## (d) Urine and faeces from suspected cases of typhoid fever, etc. :—

	Posi- tive.	Doubt- ful.	Nega- tive.	Total.
City hospitals ... ..	6	1	159	166
Private practitioners, etc. ... ..	—	1	10	11
	<hr/>	<hr/>	<hr/>	<hr/>
	6	2	169	177
	<hr/>	<hr/>	<hr/>	<hr/>

## (e) Sputa, etc., from suspected cases of tuberculosis :—

	Positive.	Negative.	Total.
City hospitals and other institutions ... ..	17	166	183
Private practitioners, etc. ... ..	228	1,033	1,261
	<hr/>	<hr/>	<hr/>
	245	1,199	1,444
	<hr/>	<hr/>	<hr/>

(f) Anthrax Infection—33 specimens of tissues, swabs, etc., were examined chiefly for the city hospitals, and *B. Anthracis* was found in 3 cases.

(g) Vaccines—4 vaccines were prepared from specimens sent from the city hospitals.

(h) Miscellaneous—362 specimens of tissues, secretions, fluids, etc., were examined, chiefly for the city hospitals and other institutions.

# VENEREAL DISEASES.

The following specimens have been examined from persons known, or suspected, to be suffering from venereal diseases :—

	Positive.	Doubtful.	Negative.	Total.
<b>Clinics —</b>				
Wassermann reactions ... ..	1,331	23	2,175	3,529
For Gonococci ... ..	35	4	772	811
	1,366	27	2,947	4,340
<b>Hospitals, Private Practitioners, &amp;c.</b>				
Wassermann reactions ... ..	1,575	26	2,601	4,202
For Gonococci ... ..	80	43	409	532
For Spirochoetes ... ..	—	—	6	6
Still-born Infants ... ..	13	9	325	347
For Ophthalmia Neonatorum ...	19	2	41	62
	1,687	80	3,382	5,149
<b>Grand Totals ... ..</b>	<b>3,053</b>	<b>107</b>	<b>6,329</b>	<b>9,489</b>

As the majority of these specimens were sent from patients suspected to be suffering from syphilis, or undergoing treatment, several specimens of blood may have been sent from one case at different times, and therefore no percentages as to positive and negative results can be estimated from these figures.

In the case of still-born infants examined (see above table), those giving positive evidence of syphilis amount to nearly 4 per cent. In 5 of the doubtful cases a specimen of blood from each mother was examined, and one was definitely positive.

The cases of ophthalmia neonatorum shewing positive evidence of gonococci amount to nearly 31 per cent.

## MATERIAL FROM ANIMALS WITH SUSPECTED INFECTION.

For tuberculous infection—Of the 17 specimens of tissues, etc., examined, 11 were tubercular, and 6 shewed no evidence of infection.



For anthrax infection—There were 48 samples of shaving brushes, bristles, etc., and 10 specimens of tissues, etc., examined. All were negative.

Other specimens—Three disinfectants were examined for the Baths and Wash-houses department; none of these samples call for any special comment.

### COMPARATIVE SUMMARY OF EXAMINATIONS FOR 1925 AND 1926.

Description of specimens.	1925	1926
Milks and other food-stuffs ... ..	918	871
Waters ... ..	361	378
Rats, etc. ... ..	9,113	8,452
Material from infectious diseases in man:—		
Swabs for Diphtheria ... ..	11,415	9,851
Do. for Vincent's Angina ... ..	—	54
Blood for Typhoid fever ... ..	123	135
Urine and Faeces for Typhoid fever ... ..	235	178
Sputa, etc., for Tuberculosis ... ..	1,828	1,444
Anthrax infection ... ..	24	33
Vaccines ... ..	9	4
Miscellaneous ... ..	345	362
Venereal Diseases ... ..	7,915	9,489
Material from animals with suspected infection:—		
Tissues, etc., for Tuberculous infection ... ..	6	17
Hair, Shaving brushes, etc., for Anthrax infection	208	158
Tissues, etc., for Anthrax infection ... ..	6	10
Other specimens ... ..	4	3
TOTALS ...	32,510	31,439

## 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 592 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 1926 the quantity of domestic and trade refuse collected and received was approximately 318,600 tons, and the quantity disposed of was approximately 372,800 tons, the latter figure including 54,200 tons of clinker residue and fluedust from destructors. The quantity dealt with per working day was 1,214 tons.

The whole of the 608 miles of streets with their passages, with the exception of a few on the outskirts of the City, 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. During 1926 street washing was carried out as follows:—

- 54 streets washed once a week;
- 1 street washed three times a week;
- 1 street washed daily; and
- 236 streets washed as occasion required;

and all tunnel entrances to courts were also regularly washed.

Three motor sweeping machines are employed regularly, and sweep approximately 30 miles of roadway nightly.

On Sunday mornings a number of the principal streets and streets in congested areas are cleansed, and certain street and court bins emptied.

During 1926 approximately 49,000 tons of street sweepings were collected and disposed of as manure and top dressing.

In connection with street watering upwards of  $15\frac{1}{4}$  million gallons of water were distributed during the season, in addition to the large quantity used for street washing.



851,650 square yards of carriageway were treated with dust-laying compositions, of which 57,217 square yards were in Sefton and Newsham Parks.

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, 1926, was 661.

There are 34 underground urinals with 317 stalls and 149 overground urinals with 561 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 1925 the number of bins in use of this type was 86,000, and the number of ashpits had been reduced from 65,000 to approximately 5,800. In addition, more than 70,000 loose bins had been supplied. In the year 1900 an improved sanitary ashbin 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 1,354, which are emptied daily. Ashbins and ashpits at domestic premises are emptied approximately once weekly. The Bell-Card 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.

Horse middens are emptied weekly, and oftener if required, and abattoir garbage is removed nightly, 3,599 tons of abattoir garbage being removed during 1926.

All ashpits and ashbin refuse is emptied direct into the carts and motors, and all loaded carts and motors 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 162,722 tons were burned at the destructors, 65,192 tons were deposited at sea by hopper barge, 31,401 tons were sold to farmers, and 64,941 tons were otherwise disposed of for filling up pits, and agricultural purposes, etc. In addition, approximately 48,600 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.

### REMOVAL OF INSANITARY PROPERTY.

The following summary indicates the number of houses which have been dealt with from the year 1865 to 1926 (inclusive):—

Date	Powers	Approximate number of houses dealt with
1865 to 1904	The Liverpool Sanitary Amendment Act, 1864. ... ..	6,300
1905 to 1925	HOUSING ACTS.	
	(a) Unhealthy Areas (23)... ..	2,966
1906	(b) As the result of a Circular Letter directing the Owner's attention to the insanitary condition of the property ... ..	1,020
1906 to 1926	(c) Closing Orders ... ..	1,760

In addition to the above, a large number of insanitary houses have been demolished by owners for the purpose of private improvement.

### CLOSING ORDERS.

In view of the shortage of dwellings no Closing Orders were made under the Housing Acts during the years 1916 to 1920 and 1922 to 1926 (inclusive).

During the year 1921, Closing Orders were made in regard to certain houses in Quarry Street area, which were referred to in the Report for 1925.

### HOUSING ACT, 1925.

The approximate number of insanitary houses existing on the 1st January, 1927 (including added areas) was as follows:—

Number of courts	... ..	266
Number of court houses	... ..	1,408
Approximate number of front houses contiguous to court houses	... ..	532



## PITT STREET AREA.

On March 19th, 1926, the Ministry of Health made a Confirmation Order in respect to the compulsory purchase of the properties on this area. The Report and Vital Statistics in respect to this area are referred to in detail in the Annual Report of 1925.

Plans have been approved for the erection of 57 tenements on this site and 18 of the number are nearing completion. This will be a most useful beginning in opening up a district in which the re-housing of the residents is urgently required.

## BEAU STREET AREA (Confirming Order, 23rd October, 1908.)

The land and premises on this area have been acquired and all the property demolished.

In view of the proposed new road the question of rebuilding on a portion of the area has been in abeyance. Meanwhile, the vacant land is let at short tenancies.

## PRINCE EDWIN STREET AREA. (Confirming Order 10th October, 1924.)

Sixty tenements have been erected, and are all occupied.

## INSANITARY HOUSES REMAINING TO BE DEALT WITH.

Approximately 900 of these houses are so scattered as to be incapable of being included in an unhealthy area, and in respect to these houses, the following letter has been sent to the owners :—

“ That the property is not in all respects reasonably fit for human habitation, proceedings are contemplated with reference thereto, under the Housing Act, 1925.

“ Before further and formal action is taken, I am desired to enquire what steps you can take with a view to rendering the property fit for human habitation, and also if you are willing to cause the works to be undertaken, if your proposals are approved by the Housing Committee.

“ Generally speaking it is essential that improved sanitary arrangements and means of ventilation should be introduced (by the demolition of obstructive buildings or otherwise) and the properties put in a reasonable state of repair.

"The Housing Committee will give careful consideration to any proposal you may be pleased to make in response to this enquiry, which is without prejudice.

"Pending a formal proposal, which, if made, ought to be submitted within one month from the date hereof, communications respecting the property should be addressed to the Town Clerk, Municipal Buildings, Dale Street, Liverpool."

In response to this letter a number of replies have been received from the Owners suggesting certain alterations, and these will be considered by the Committee.

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#### RE-HOUSING SCHEMES.

The following Preliminary Report of the Medical Officer of Health and the Acting Director of Housing was submitted to the Housing Committee, on the 24th June, 1926 :—

Adverting to the resolution of the Housing Committee, dated May 27th, 1926, recommending the City Council that the Committee be authorised to obtain, from the Liverpool School of Architecture and other similar sources premiated designs for re-housing in connection with schemes to be prepared, the Medical Officer of Health and Acting Director of Housing beg to submit the following report :—

#### UNHEALTHY AREAS STILL TO BE DEALT WITH.

There are at present nine unhealthy areas in the city remaining to be dealt with, in which the houses are so grouped together as to be suitable for being dealt with as improvement schemes under Part 2 of the Housing Act, 1925.

#### OFFICIAL REPRESENTATION.

In 1920 a draft official representation was submitted in respect to these areas, and on March 25th, 1921, the Housing Committee decided that certain areas should be considered with a view to making improvement schemes, and the remainder dealt with by closing order.



CITY COUNCIL, APRIL 6TH, 1921.

At a meeting of the City Council on April 6th, 1921, the proceedings of the Housing Committee relative to these properties were, by permission of the Council, withdrawn.

These areas, however, are situated some distance apart, consequently they cannot be brought together so as to be included in one comprehensive scheme suitable for being dealt with under the terms of the resolution, but, of the nine aforementioned unhealthy areas, two, namely, Gomer Street area and Comus Street area, are included in the extended scheme referred to in the following report, and the unhealthy area, known as Great Richmond Street area, in respect of which the Ministry have recently approved an improvement scheme, is also within the boundaries of the extended scheme.

### CENTRAL AREA

(INCLUDING BAPTIST STREET AREA).

The Medical Officer of Health and Acting Director of Housing having in view the desire of the committee as expressed in the resolution to the City Council, beg to submit an area covering approximately 86 acres, as such as may meet the wishes of the Committee.

#### BOUNDARIES.

The area is bounded by Juvenal Street on the north, Clayton Street and Islington on the south, Soho Street on the east, and Scotland Road and Byrom Street on the west. The boundary line is indicated on the plan.

#### DESCRIPTION.

There are on this area 2,155 dwelling-houses, 761 being sublet, and 736 are of the worst type of dwelling, being deficient in means of ventilation, without adequate yard space, separate closet accommodation, and proper water supply.

#### HOUSES OCCUPIED.

With the exception of three houses, which are more or less derelict, all houses on this area are occupied.

#### DWELLING-HOUSES AND SHOPS.

In addition to the 2,155 houses previously referred to, there are 305 business premises consisting of a dwelling-house and shop.

## LICENSED PREMISES.

Included in the 305 business premises, there are 37 licensed premises.

## POPULATION.

A careful house-to-house census has been recently taken, from which it appears the approximate population on this area is 15,471 persons. The number of families is 4,012.

## OCCUPATIONS.

The majority of the persons who reside in this area are of the artisan class, and include general labourers, dock labourers, carters, hawkers, office cleaners, etc.

## RENTALS.

The rentals of the houses used exclusively as dwellings are as follows :—

## DETAILS OF RENTALS

IN RESPECT TO DWELLING-HOUSES, BUT NOT INCLUDING DWELLING-HOUSES  
AND SHOPS.

	Totals.
Number of houses under 6/- per week ... ..	598
„ „ 6/- to 9/- per week ... ..	844
„ „ 9/- to 12/- per week ... ..	265
„ „ over 12/- per week ... ..	423
„ „ for which the rent was not obtain- able at time of visit ... ..	25
	<hr/>
	2,155
	<hr/>

## OTHER PROPERTIES INCLUDED IN AREA.

Number of Churches and Mission Halls ... ..	11
„ Schools and Rescue Homes ... ..	5
„ Works ... ..	131
„ Stables, lock-up shops and stores ... ..	201
„ Cinemas and Public Halls ... ..	2
„ Drill Sheds ... ..	1
„ Breweries ... ..	3
„ Plots of vacant land ... ..	26



- SCHOOLS.** Holy Cross Schools, Hunter Street.  
 St. Joseph Schools, Grosvenor Street.  
 Bishop Goss Schools, Cazneau Street.  
 Christ Church Schools, Christian Street.
- CHURCHES.** Holy Trinity Church, St. Anne Street.  
 St. Anne's Church, St. Anne Street.  
 St. Joseph's Church, Grosvenor Street.  
 Friends Meeting House, Hunter Street, and Islington.  
 Christ Church, Hunter Street.  
 St. Stephen's Church, Byrom Street.  
 Byrom Hall, Byrom Street.  
 Other small Mission Halls.
- CINEMAS.** New Adelphi, St. Anne Street.
- BREWERIES.** Mellors, Hunter Street.  
 Robinson, Soho Street.  
 Smart, Chaucer Street.

#### TYPES OF WORKS.

- Printing Factory, Islington, Blake & Mackenzie.  
 Builders' Works, Christian Street, Hall & Sons.  
 Warehouse and Store, St. Anne Street, Lipton's Ltd.  
 Tobacco Factory, Hare Place, Clarke & Sons.  
 Bread Factory, Soho Street, Lunt & Sons.  
 Bread Factory, Rose Place, Sykes & Sons.  
 Glass Factory, St. Anne Street, Keizer & Company.  
 Furniture Depository, Cazneau Street, Henry Heyes & Sons.

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#### CORPORATION PROPERTIES INCLUDED IN AREA.

- Dwellings, Juvenal Street.  
 Dwellings and shops, St. Anne Street and Holly Street.  
 Baths, Mansfield Street.  
 Weights and Measures Office, Byrom Street.  
 City Engineer's yard, Mill Lane.  
 Bridewell and Police Station, Rose Hill.  
 Open space, Thurlow Street.  
 Open space and gymnasia, Richmond Row.

#### VACANT LAND.

The vacant land consists of small plots situated in different parts of the area, and are mainly the sites of demolished and insanitary property, approximate area = 1,306 square yards.

#### GENERAL.

Viewing the area as a whole, it is one of the most congested and densely populated districts within the city, the majority of the streets and passageways are narrow, the air space around the dwellings is inadequate, the general arrangement of the streets and houses is unsatisfactory, the majority of the houses are old and worn, and, with a few exceptions, the dwelling-houses on this area do not comply with modern sanitary requirements.

#### PROPOSED NEW STREET.

A joint Committee formed by members of the Health and Housing Committees have had under consideration a proposed new street to link up with the widening of Prince Edwin Street, which if carried out would cut through the Beau Street area, and run almost in a diagonal line across the area referred to in this report. The erection of dwellings on the Beau Street area has been postponed in consequence of this proposed new street.

#### ACQUISITION.

To acquire the various properties on this area the dwelling-houses which are insanitary could be dealt with by closing order or as unhealthy areas under Parts 1 and 2 of the Housing Act, 1925, but other properties included for the purpose of making the scheme efficient would require to be purchased.

#### THE HOUSING COMMITTEE.

RESOLVED, that a copy of the report be sent to each member of the Committee marked "Private and Confidential," and that the Medical Officer and Acting Director of Housing be instructed to submit a detailed report upon the scheme dealing more particularly with the types of properties comprised in the area, the estimated cost of acquisition and the line of the proposed new road through the area.



## UNOCCUPIED HOUSES.

The following report was submitted to the Health Committee on 10th February, 1927 :—

Adverting to the resolution of the Health Committee, dated January 13th, 1927, asking for a full and complete return of the number of empty houses and cellar dwellings in the city, and whether for sale or to be let, the Medical Officer begs to submit the following return :—

Total number of empty dwelling-houses in the city ... 1,123

Of the aforementioned 1,123 houses, 986 are for sale, and 137 are to be let. The approximate rentals of these houses are as follows :—

	Houses.
Under 10/- per week ... ..	40
Over 10/- and under 15/- per week ... ..	230
Over 15/- and under 20/- per week ... ..	159
Over 20/- and under 25/- per week ... ..	172
25/- per week and over ... ..	522
	—
	1,123
	—

The above rentals are clear of rates.

## CELLAR DWELLINGS.

In 1908 the special legislation obtained by the Health Committee in regard to cellar dwellings in the city, provided that after the 31st day of December, 1912, it shall not be lawful to let or occupy or permit to be occupied as a separate dwelling any room or place whereof the floor of any part thereof is more than two feet below the surface of the adjacent ground.

In 1909 a circular letter was issued to owners of all cellar dwellings directing attention to the above provision.

In December, 1912, the whole of the cellar dwellings in the city were inspected, and a record made indicating how they were used.

The following table indicates the position in 1912 and 1926 :—

Number of cellars found occupied as separate dwellings,	
December, 1912 ... ..	1,614

## RESULT OF RE-VISIT, DECEMBER, 1926.

Number of cellar dwellings bricked up	...	...	...	264
" " " demolished	...	...	...	9
" " reconstructed and let in connection with house above	...	...	...	115
" " occupied as kitchens, wash cellars, etc.	...	...	...	472
" " still occupied as separate dwellings	...	...	...	146
" " found unoccupied	...	...	...	608

With regard to the unoccupied cellars, there is no indication that any are to be let, and the majority of them are in a damp and derelict condition.

The following report was submitted by the Acting Director of Housing to the Housing Committee on 23rd December, 1926 :—

## SITES IN POSSESSION OF THE HOUSING COMMITTEE.

Pursuant to the resolution of this Committee of the 25th November, 1926, instructing the Acting Director of Housing to report on the sites now in possession of the Committee, the Acting Director would remind the Committee that the various sites owned by them in the central areas of the city may be divided into the following categories :—

- (a) Numerous small isolated sites, formerly occupied by insanitary property, court houses, etc., which are incapable of being used for building purposes owing to their small area and inaccessibility from the streets.
- (b) Sites which are included in the Baptist Street area, and which should be dealt with in connection with the improvement scheme to be considered for this area.
- (c) Areas which are not included in any scheme, and which only possess frontages for the erection of a small number of houses.
- (d) Areas for which schemes have already been prepared.
- (e) Areas to be dealt with under existing Improvement Orders.

It is not proposed to set out the various small areas coming under heading (a) as these cannot be utilised for building purposes, but the areas classified under headings (b), (c) and (d) are set out below, and the area of the site in square yards is given in each case :—



*(b) Sites in Improvement Scheme.*

1. Rose Hill	...	...	Area 335 square yards.
2. Mansfield Street	...	..	426    ..    ..
3. Torbock Street	...	..	200    ..    ..
4. Clayton Street	...	..	345    ..    ..

*(c) Areas available for the erection of a small number of houses.*

1. Smithfield Street and Cockspur Street	...	Area 272 square yards.
2. Fontenoy Street and Alexander Pope Street	..	220    ..    ..
3. Mile End	...    ...	.. 470    ..    ..
4. Kew Street	...    ...	.. 440    ..    ..
5. Blair Street, 2 plots...	..	550    ..    ..
	and	.. 584    ..    ..
6. New Henderson Street	..	230    ..    ..

In the case of Smithfield Street and Cockspur Street, the Acting Director is of the opinion that the site is too small for development, and should be reserved for future development in conjunction with the property at the junction of the two streets.

Fontenoy Street and Alexander Pope Street would provide frontages for 4 houses, Kew Street for 4 houses, Blair Street for 6 houses, and New Henderson Street for 2 houses, allowing approximately 16 feet frontage per house and the necessary provision of back passage.

In the case of Blair Street, the Acting Director would remind the Committee that the diversion of Blair Street is under consideration, and it would be unwise to take any action with regard to this particular site.

With regard to Mile End the Acting Director would suggest that any further building work on this site should be on the lines of an extension of the existing dwellings, and before such extension could be carried out satisfactorily it would be necessary to purchase additional land adjoining the present site.

*(d) Areas for which schemes have been prepared.*

- |                  |     |                        |
|------------------|-----|------------------------|
| 1. Hornby Street | ... | Area 828 square yards. |
| 2. Calvin Street | ... | " 819 " "              |

Plans for the erection of 24 dwellings on these two sites were prepared in 1924.

Tenders were provisionally accepted, subject to the approval of the Ministry of Health.

After submission to the Ministry several interviews took place with the Ministry officials, and it was also pointed out in correspondence that the two sites in question could not be dealt with as re-housing schemes, and would, therefore, only be eligible for financial assistance provided that the houses complied with the conditions of the Housing Acts of 1923 and 1924, and that in order to so qualify the dimensions of some of the dwellings would have to be increased.

It was therefore suggested that as the cost per dwelling was very high (probably due to the smallness of the scheme), it would be inadvisable to proceed with the erection of dwellings until there was a possibility of dealing with a bigger frontage.

*(e) Areas in Improvement Orders.*

1. Burlington Street.
2. Great Richmond Street.
3. Rankin Street.
4. Hopwood Street.
5. Silvester Street.
6. Saltney Street.

The present position with regard to these areas is that property is being negotiated for, and that as soon as acquired and available accommodation can be offered to the tenants, the schemes will be proceeded with.

The Acting Director would remind the Committee that the building of houses in small isolated blocks is the most expensive form of development, and it must not be anticipated that prices would be obtained for the erection of a few houses in the centre of the city which would compare with prices for similar houses on the outskirts.



In addition to this, any scheme for houses erected under the Housing Acts would be subject to the approval of the Ministry of Health, and it is likely that considerable difficulty would be experienced in obtaining sanction to develop the small sites, on the ground of the density of houses already existing in the neighbourhood.

### PROVISION OF DWELLINGS.

The real barrier in regard to the removal of insanitary houses within the city is the question of replacing the persons who may be dispossessed. The Ministry of Health have already approved of the reports of the Medical Officer of Health in regard to certain unhealthy areas, but in each case, a clause is inserted in the Confirming Order to the effect that any unoccupied houses on the unhealthy areas shall not be demolished, until accommodation for the number of persons equivalent to the number of working-class occupants in each house is available in new dwellings erected by the Council unless the Council are satisfied that suitable alternative accommodation for such occupants is available elsewhere.

### NEW DWELLINGS IN SUBURBS.

In the year 1919 the Housing Committee commenced to erect houses in the suburbs, and up to the present 11,053 houses and 169 flats have been completed, and 5,507 houses are in progress of erection.

During the same period 3,959 houses have been erected by private enterprise, but there is still an urgent demand for dwellings.

The difficulty in regard to the removal of insanitary houses in the more congested part of the city has been partly removed by the proposal to erect 260 tenements in Melrose Road, and 198 tenements in South Hill Road.

Plans in respect to the erection of these tenements have been approved, and in the case of South Hill Road, building operations have now commenced. In regard to Melrose Road, plans have been approved, and the tenders for the erection of these tenements are now under consideration.

The Housing Committee has erected the following dwelling-houses since 1919 :—

		" A "	" B "	
		(Non-parlour)	(Parlour)	Totals
Elms House Estate ...	...	252	—	252
Larkhill Estate ...	...	476	1,730	2,206
Fazakerley Estate ...	...	62	150	212
Edge Lane Drive Estate ...	...	560	311	871
Walton-Clubmoor Estate ...	...	1,438	1,474	2,912
Springwood ...	...	224	983	1,207
Partly developed Estates ...	...	—	554	554
Woolton ...	...	48	—	48
Knotty Ash ...	...	48	38	86
Highfield Estate ...	...	—	527	527
Pinehurst Road Estate ...	...	281	305	586
King Street, etc., Garston ...	...	71	—	71
Ronald Street ...	...	78	—	78
Norris Green Estate ...	...	824	619	1,443
		4,362	6,691	11,053

All these dwellings are completed and occupied.

#### DESCRIPTION OF TENEMENTS.

Number of 1-roomed dwellings ...	193
Number of 2-roomed dwellings ...	1,366
Number of 3-roomed dwellings ...	1,166
Number of 4-roomed dwellings ...	318
	3,043

Number of self-contained dwellings (included in above)	133
Number of lock-up shops	15

#### RENTALS.

The rentals of the tenements vary from 2s. 8d. to 8s. 11d., and those of the self-contained cottages from 8s. 11d. to 10s. 6½d. per week.



## RE-HOUSING IN OLD CITY AREA.

The number of dwellings provided by the Corporation up to the present is 3,043; their situations and dates of opening are as follows:—

Situation	Date opened.	Number of tenements. (Including houses with shops attached)
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	182
Kempston Street .....	1902	79
Kew Street .....	1902/3	114
Adlington Street Area .....	1902/3	273
Stanhope Cottages .....	1904	60
Mill Street .....	1904	55
Hornby Street .....	1904	454
	1906/7	
Clive Street and Shelley Street .....	1905	83
Eldon Street .....	1905	12
Upper Mann Street .....	1905/6	88
Combermere Street .....	1909	49
Burlington Street .....	1910	114
Saltney Street .....	1911	48
Grafton Street .....	1911	60
Bevington Street Area .....	1912	224
Northumberland Street Area .....	1913	68
St. Anne Street Area .....	1914	77
Gore Street .....	1916	24
Jordan Street .....	1916	31
Sparling Street .....	1916	16
Penrhyn Street .....	1921	26
Mason Street .....	1921	28
Blenheim Street .....	1923	18
Prince Edwin Street .....	1924	60
St. Augustine Street .....	1925	6
Bond Street .....	1925	24
<b>Total</b> .....	—	<b>3,043</b>

**CORPORATION TENEMENTS.**  
(Old City Area.)

**VITAL STATISTICS.**

**Comparative Tables.**

**ALL DWELLINGS.**

Population, 1921	...	...	...	12,870
Population, 1922	...	...	...	13,402
Population, 1923	...	...	...	13,597
Population, 1924	...	...	...	13,775
Population, 1925	...	...	...	13,786
Population, 1926	...	...	...	14,312

	1921.		1922.		1923.		1924.		1925.		1926.	
	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 .....	517	40.1	542	40.44	475	34.93	450	32.66	476	34.52	508	35.49
Deaths .....	246	19.1	245	18.28	242	17.79	226	16.40	258	18.71	258	17.32
Infantile Mortality .....	68	131.5 per 1,000 Births.	69	127.30 per 1,000 Births.	60	126.31 per 1,000 Births.	59	131.11 per 1,000 Births.	61	128.15 per 1,000 Births.	75	147.63 per 1,000 Births.
Deaths under 1 year .....												
Phthisis .....	27	2.09	26	1.9	28	2.05	22	1.59	22	1.59	29	2.02



**CORPORATION TENEMENTS.**  
(Old City Area.)

**VITAL STATISTICS.**

**Comparative Tables.**

**RESTRICTED DWELLINGS.**

Population, 1921	...	...	...	10,840
Population, 1922	...	...	...	11,361
Population, 1923	...	...	...	11,516
Population, 1924	...	...	...	11,690
Population, 1925	...	...	...	11,683
Population, 1926	...	...	...	12,205

	1921.		1922.		1923.		1924.		1925.		1926.	
	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 .....	431	40.6	452	39.78	406	35.25	364	31.13	399	34.15	432	35.39
Deaths .....	206	19.003	208	18.30	211	18.32	193	16.50	218	18.65	225	18.43
Infantile Mortality .....	54	125.2	62	137.16	51	125.61	51	140.10	51	127.81	67	155.03
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 .....	21	1.9	24	2.11	23	1.99	16	1.36	21	1.79	25	2.04

**CORPORATION TENEMENTS.**  
(Old City Area.)

**VITAL STATISTICS.**

**Comparative Tables.**

**UNRESTRICTED DWELLINGS.**

Population, 1921	...	...	...	2,030
Population, 1922	...	...	...	2,041
Population, 1923	...	...	...	2,081
Population, 1924	...	...	...	2,085
Population, 1925	...	...	...	2,103
Population, 1926	...	...	...	2,107

	1921.		1922.		1923.		1924.		1925.		1926.	
	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.
<b>Births</b> .....	86	42.3	90	44.09	69	33.15	86	41.24	77	36.61	76	36.07
<b>Deaths</b> .....	40	19.7	37	18.12	31	14.89	33	15.82	40	19.02	33	15.66
<b>Infantile Mortality</b> .....	14	162.7	7	77.77	9	130.43	8	93.02	10	129.87	8	105.26
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.
<b>Phthisis</b> .....	6	2.9	2	0.97	5	2.40	6	2.87	1	0.47	4	1.89



# **CORPORATION TENEMENTS.**

(Old City Area.)

## **VITAL STATISTICS.**

Statistics as to Birth Rate and Infantile Mortality Rate in Corporation Dwellings as a whole for the five years 1922 to 1926 :—

Year	Birth Rate per 1,000 of population.	Infantile Mortality. Deaths under 1 year per 1,000 births.
1922.....	40·44	127·3
1923.....	34·90	126·3
1924.....	32·66	131·1
1925.....	34·52	128·15
1926.....	35·49	147·63

## **ALL DWELLINGS.**

Average Birth Rate for the 5 years 1922 to 1926	...	...	35·58
Average Death Rate for the 5 years 1922 to 1926	...	...	17·84
Average Infantile Mortality Rate (under 1 year) 1922 to 1926..			132·19
Average Phthisis Death Rate for the 5 years 1922 to 1926	...		1·84

RETURN REQUIRED BY MINISTRY OF HEALTH,  
YEAR ENDED 31ST DECEMBER, 1926.

GENERAL STATISTICS.

Area (acres) ... ..	21,219
Population ... ..	849,593
Number of inhabited houses ... ..	171,208
Number of families, or separate occupiers (1921 Census) ... ..	173,823
Rateable value ... ..	£7,021,884
Sum represented by a Penny Rate ... ..	£25,000

HOUSING.

Number of New Houses erected during the year :—

(a) Total ... ..	4,838
(b) With State Assistance under the Housing Act, 1924 :—	
(i) By the Local Authority ... ..	3,102
(ii) By other bodies or persons ... ..	1,197

1. UNFIT DWELLING-HOUSES.

Inspection—

(1) Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts) ... ..	143,090
(2) Number of dwelling-houses which were inspected and recorded under the Housing (Inspection of District) Regulations, 1910 ... ..	143,050
(3) Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation ... ..	1,940
(4) Number of dwelling-houses (exclusive of those referred to under the preceding sub-heading) found not to be in all respects reasonably fit for human habitation ... ..	Nil.



## 2. REMEDY OF DEFECTS WITHOUT SERVICE OF FORMAL NOTICES.

Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their Officers ... ..	Nil.
--	------

## 3. ACTION UNDER STATUTORY POWERS.

A.—*Proceedings under Section 3 of the Housing Act, 1925.*

(1) Number of dwelling-houses in respect of which notices were served requiring repairs ... ..	Nil.
(2) Number of dwelling-houses which were rendered fit :—	
(a) by owners ... ..	Nil.
(b) by Local Authority in default of owners	Nil.
(3) Number of dwelling-houses in respect to which Closing Orders became operative in pursuance of declarations by owners of intention to close..	Nil.

B.—*Proceedings under Public Health Acts.*

(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied ... ..	42,333
(2) Number of dwelling-houses in which defects were remedied—	
(a) by owners ... ..	42,333
(b) by Local Authority in default of owners..	Nil.

C.—*Proceedings under Sections 11 to 15 of the Housing Act, 1925.*

(1) Number of representations made with a view to the making of Closing Orders ... ..	Nil.
(2) Number of dwelling-houses in respect of which Closing Orders were made ... ..	Nil.
(3) Number of dwelling-houses in respect of which Closing Orders were determined, the dwelling-houses having been rendered fit... ..	Nil.
(4) Number of dwelling-houses in respect of which Demolition Orders were made ... ..	Nil.
(5) Number of dwelling-houses demolished in pursuance of Demolition Orders ... ..	Nil.

## CITY BUILDING SURVEYOR'S DEPARTMENT.

## RETURN OF HOUSES ERECTED, 1923-1926.

NUMBER OF ROOMS, (Exclusive of Bathrooms, Sculleries, &c.)	1923	1924	1925	1926
4 Rooms or less ... ..	5	14	13	3
5 or 6 Rooms ... ..	763	479	1,298	4,599
7 or 8 Rooms ... ..	937	265	333	225
9 or 10 Rooms ... ..	4	10	3	11
More than 10 Rooms ... ..	—	—	—	—
Totals ... ..	1,709	768	1,647	4,838

The numbers of houses which have been erected by or for the Housing Committee and which form parts of Government-assisted schemes during the last four years, are :—

1923 = 1,548.

1924 = 88.

1925 = 491.

1926 = 3,102.

RESIDENTIAL FLATS.—During 1926, 18 houses have been altered into 54 *self-contained* residential flats, giving a nett increase of 36 “houses” not included in the above table.



NUMBER OF HOUSES ERECTED AND TAKEN DOWN  
DURING THE YEAR ENDING DECEMBER, 1926.

DISTRICTS.						Number Erected.	Number Taken Down.
Exchange	...	...	...	...	...	—	11
Abercromby	...	...	...	...	...	—	13
Everton	...	...	...	...	...	—	42
Kirkdale...	...	...	...	...	...	1	—
Edge Hill	...	...	...	...	...	—	—
Toxteth	...	...	...	...	...	1	6
Walton	...	...	...	...	...	2,627	—
West Derby	...	...	...	...	...	874	1
Wavertree	...	...	...	...	...	1,232	4
Toxteth (East)	...	...	...	...	...	—	—
Fazakerley	...	...	...	...	...	67	4
Woolton	...	...	...	...	...	36	1
Totals ...						4,838	82

Of the 4,838 dwelling-houses erected during 1926, 3,102 were built under the direction of the Housing Department, these forming parts of Government-assisted schemes.

# 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° 24' N. Longitude 3° 4' W.

Height above the Mean Level of the Sea 202 feet.

1926.	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 .....	29.766	41.6	2.518	18	89
February .....	29.778	44.5	3.525	17	84
March .....	30.038	43.9	1.026	9	78
April .....	29.862	49.3	0.751	12	71
May .....	29.881	50.6	3.485	20	75
June .....	29.904	57.0	1.075	13	74
July .....	30.008	63.2	3.765	15	74
August .....	30.027	61.2	3.142	13	78
September .....	30.066	57.8	3.529	15	80
October .....	29.893	46.8	3.015	16	78
November .....	29.530	42.6	4.319	22	88
December .....	30.309	41.5	0.811	13	87



DIFFERENCE FROM THE AVERAGE QUANTITIES OBSERVED DURING THE  
LAST 60 YEARS.

1926.	BAROMETER.		TEMPERATURE.		RAINFALL.	
	Above Average.	Below Average.	Above Average.	Below Average.	Above Average.	Below Average.
	Inches.	Inches	Degrees.	Degrees.	Inches.	Inches.
January .....	...	0.170	2.4	...	0.376	...
February .....	...	0.134	3.3	...	1.746	...
March .....	0.149	...	1.7	...	...	0.797
April .....	...	0.039	2.0	...	...	0.903
May .....	...	0.081	...	1.2	1.451	...
June .....	...	0.093	...	0.4	...	0.892
July .....	0.059	...	2.5	...	1.057	...
August .....	0.109	...	0.7	...	0.061	...
September .....	0.100	...	1.6	...	0.744	...
October.....	0.011	...	...	2.7	...	0.314
November .....	...	0.365	...	0.6	1.817	...
December.....	0.460	...	1.7	...	...	1.925

OBSERVATIONS OF VELOCITY OF WIND.

1926.	Average Hourly Velocity for Month.	Maximum Hourly Velocity.	Date.	Minimum Hourly Velocity.	Date.
	Miles.	Miles.		Miles.	
January .....	18.2	48	Jan. 4	0	January 16, 17.
February....	15.5	43	Feb. 27	0	February 7, 8.
March.....	21.3	66	Mar. 4	0	March 19.
April .....	13.9	39	April 19	0	April 5, 6, 24, 25.
May .....	14.3	44	May 30	0	May 8, 23.
June .....	13.6	35	June 14, 20, [22]	0	June 16, 29.
July .....	14.0	39	July 23	0	July 8, 13.
August .....	15.2	45	Aug. 22	1	August 2, 4, 9, 16, 17, [27, 28.]
September..	14.6	37	Sept. 15	1	Sept. 2, 3, 22.
October.....	14.3	62	Oct. 9	0	October 4.
November...	14.0	47	Nov. 14	0	Nov. 1, 3, 20, 24, 27.
December...	17.2	50	Dec. 18	0	December 4, 12, 13, 15, [26, 27]

## PARLIAMENTARY POWERS.

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On the 21st October, 1926, the Parliamentary Committee approved of a Bill being submitted to Parliament to extend the boundaries of the City of Liverpool; to authorise the Corporation to construct new streets, additional tramways and other works; to confer further powers upon them with respect to their tramways, waterworks and electricity undertakings; to make better provision for the health, local government, and finance of the City; to provide for the deconsecration and disuse of the Chapel of the Liverpool School for the Indigent Blind; to empower the Mersey Docks and Harbour Board to contribute towards the cost of a new arterial road between Liverpool and East Lancashire; and for other purposes.

In respect to the following clauses which were included in the Bill, the Medical Officer of Health gave evidence before the House of Lords Committee, and also before the House of Commons Committee.

### CLAUSES INCLUDED IN BILL.

Infectious  
Disease.

A. Prohibiting a person carrying on a business suffering from an infectious disease, or is living in a house in which there is a case of infectious disease, from engaging in the cooking preparation or handling of food intended for consumption by persons other than himself or members of his household in such a manner as to be likely to spread infection.

B. Providing for the notification of venereal disease of

(a) any infant under two years of age suffering from any such disease;

(b) any person (not being a child) suffering from any such disease who after being informed by any medical practitioner attending on or called in to visit him or by the medical officer that further treatment is necessary in order to effect a cure of such disease refuses or neglects to undergo such further treatment.

Sanitary  
Provisions.

C. Every tap which supplies water direct from the main in any premises other than those referred to in Section 454 (taps supplying water direct from main to be specially marked) of the Act of 1921, which



is fixed or replaced after the first day of January, 1928, shall in every case where there is also on such premises a supply from a store cistern be clearly marked or labelled so as to indicate that the water is potable.

D. To secure the cleanliness and freedom from pollution of tanks, cisterns and other receptacles for storing water supplied by the Corporation and used or likely to be used by man for drinking or domestic purposes or for manufacturing drink for the use of man.

E. To require the owner or occupier of any dwelling-house, warehouse or shop to provide and maintain in proper order and condition galvanised iron dustbins in lieu of ashpits or ashtubs or other portable receptacles for refuse, and such bins shall be of such size and construction as may be approved by the Corporation. Provided that in any case where the Corporation under this section require a galvanised iron dustbin to be provided in lieu of any ashpit or ashtub or other portable receptacle for refuse in use on the 4th day of August, 1905, which at the time such requirement is made is of suitable size and construction and in good order and condition the Corporation shall pay the cost of providing such galvanised iron dustbin.

In Committee, Clauses A, B, D, E, F, G were allowed, but Clause C was deleted.

When the Bill again came before the House of Commons, in July, 1927, Clause B was opposed, and was eventually withdrawn.

F. This clause provides that the boundary of the existing city should be altered so as to include the parishes of Croxteth Park and West Derby <sup>Extension of City.</sup> Rural which are subject to the jurisdiction of the Rural District Council of Sefton, and also form part of the West Derby Poor Law Union.

#### STATISTICS RELATING TO PROPOSED ADDED AREAS.

			Croxteth.	West Derby.
Approximate area in acres	...	...	960	2,592
Approximate population	...	...	71	2,137
Total number of dwelling-houses	...	...	14	488
Number of insanitary dwelling-houses	...	...	—	5
Do. back-to-back dwelling-houses...	...	...	—	12
Do. cowsheds	...	...	2	12
Do. milkshops	...	...	—	—

					Croxteth.	West Derby
Number of piggeries	...	...	...	...	—	19
Do. offensive trades	...	...	...	...	—	—
Do. hospitals	...	...	...	...	—	1
Do. privies	...	...	...	...	7	306
Do. ashpits	...	...	...	...	7	107
Do. cesspools	...	...	...	...	14	213
Do. factories	...	...	...	...	—	1
Do. workshops	...	...	...	...	—	—
Do. elementary schools	...	...	...	...	—	2
Do. water-closets	...	...	...	...	7	182

Norris Green Estate is situated within the area to be incorporated, and on this Estate the Housing Committee have erected 1,443 houses, and all of them are occupied.

There was no opposition to the proposed extension, and in the event of the Royal Assent being given to the Bill, the added areas will be included within the city as and from the 1st day of April, 1928.

The plan (see appendix) shows the boundary of the proposed extension.

G. This clause has reference to a proposed new street which passes through the central area re-housing scheme, further details in respect of which area will be found on page 250.

There was opposition to this clause before the House of Lords Committee, and also before the Committee of the House of Commons, but after the fullest consideration the House of Commons Committee approved of the clause, but at the same time the Chairman, on behalf of the Committee, stated that they were anxious that the Owner who had done his best to make his property sanitary should be justly dealt with, and if there is any doubt about the property being marked red or blue, that the owner should have the benefit of the doubt.

Prior to the Committee giving their decision in respect of this clause, the Chairman of the House of Commons Committee personally inspected the area through which it is proposed to make the new street.

The transcript of evidence sets out in detail the evidence given by the Medical Officer in respect to the particular clauses, and to the Bill in general.



## LIVERPOOL DOGS' HOME, Etc.

The Corporation of Liverpool makes a yearly donation to the funds of the Royal Society for the Prevention of Cruelty to Animals, Liverpool Branch, and of the Liverpool Dogs' Home, on account of the work done for the Health and Watch Committee, and the following reports from their various Liverpool centres may be of interest :—

LIVERPOOL CATS' SHELTERS, 41, RUSSELL STREET; 90, SMITH STREET, KIRKDALE; 171, MILL STREET, TOXTETH.—The total number of animals humanely lethalised during 1926 was 26,021, an increase of about 600 over 1925. It should be explained that with few and rare exceptions every single animal was actually sent to the Shelter, or handed to the society's collecting van, for this express purpose. The van collects animals from all parts of the city in response to post cards, which may be addressed to the Caretaker, Liverpool Cats' Shelter, 41, Russell Street, Liverpool, or to the office of the society, 3, Crosshall Street. Boarder cats to a limited extent can be received, both at 41, Russell Street, and also at one of the branch shelters, 90, Smith Street. Of the total number received, over 10,000 are recorded as having been in a state of injury or suffering from disease, and it will be obvious that the prompt removal of so many unwanted animals, whether healthy or diseased, is very greatly to the good of the community at large.

LIVERPOOL HORSES' REST, BROAD GREEN.—72 animals were received during the year 1926, most of them being the property of people whose livelihood largely or entirely depends upon their horse. In a number of instances a loan animal was provided, while the regular horse was in convalescence. A very high degree of successful cases is recorded at the Horses' Rest.

LIVERPOOL ANIMALS' HOSPITAL, LARCH LEA.—During 1926 the total number of attendances was 2,953, such attendances being honorarily provided by a number of practising veterinary surgeons in the city. An experienced attendant lives on the premises, and is frequently called upon to deal with emergency cases.

These three institutions are all alike conducted by the R.S.P.C.A. Liverpool Branch, 3, Crosshall Street, Liverpool.

LIVERPOOL DOGS' HOME, EDGE LANE.—During 1926 the total number of animals received at the home was 11,210, against 11,250 during 1925. This shows an increase of over 100 per cent. compared with the figures for 1921, and brings the total number of animals handled since the opening of the new premises, that is in 1904, to 134,553.

During 1926 a fresh water supply was laid down, also electric lighting and power have been laid on, and a small incinerator has been erected, and the heating installation in the large "stray" kennels has been improved.

The system of collecting unwanted dogs from private houses at a uniform rate of 1s. if within the city, has been maintained, and is becoming increasingly known. A new Morris van, with specially designed body, has been purchased for bringing the dogs to the home with comfort and expedition.

Of the number of dogs mentioned above 9,399 were humanely lethalised, while on the other hand 528 were boarder animals.



# A

The following tables I, II, III, IV, and marked also A, B, C, D, are prepared pursuant to an instruction of the Ministry of Health.

## CITY OF LIVERPOOL.

### TABLE I.

VITAL STATISTICS OF WHOLE DISTRICT DURING 1926 AND PREVIOUS YEARS.

YEAR.	Population estimated to Middle of each year.	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS. ‡		NETT DEATHS BELONGING TO THE DISTRICT.			
		Uncor- rected Number.	Nett.						Under 1 year of age.		At all ages.	
			Number.	Rate.	Number.	Rate.	of Non- residents registered in the District.	of Resi- dents not registered in the District.	Number.	Rate per 1000 Nett Births.	Number.	Rate.
1	2	3	4	5	*	7	8	9	*	11	*	13
1921.....	817000	21988	21904	26·8	12075	14·8	781	372	2339	107	11666	14·3
1922.....	823416	21478	21467	26·1	12367	15·0	808	433	2052	96	11992	14·6
1923.....	829881	20630	20695	24·9	11715	14·1	724	414	2058	99	11405	13·7
1924.....	836396	20560	20559	24·6	11813	14·1	792	369	2113	103	11390	13·6
1925.....	842968	19587	19592	23·3	12391	14·7	898	409	1935	99	11902	14·1
1926.....	849593	19869	19792	23·3	12191	14·3	937	372	2066	104	11626	13·7

NOTES.—This Table is arranged to show the gross births and deaths registered in the district during the calendar year, and the births and deaths properly belonging to it with the corresponding rates. The rates should be calculated per 1,000 of the estimated gross population as stated in Column 2, without the use of the standardising factor for the district given in the Annual Report of the Registrar-General. In a district in which large Public Institutions for the sick or infirm seriously affect the Statistics, the rates in Columns 5 and 13 may be calculated on a nett population, obtained by deducting from the estimated gross population the average number of inmates not belonging to the district in such institutions.

\* In Column 6 are included the whole of the deaths registered during the calendar year as having actually occurred within the district.

In Column 12 is entered the number in Column 6, corrected by subtraction of the number in Column 8 and by addition of the number in Column 9. Deaths in Column 10 are similarly corrected by subtraction of the deaths under 1, included in the number given in Column 8, and by addition of the deaths under 1 included in the number given in Column 9.

‡ "Transferable Deaths" are deaths of persons who, having a fixed or usual residence in England or Wales, die in a district other than that in which they resided. The deaths of persons without fixed or usual residence, e.g., casuals, are not included in Columns 8 or 9, except in certain instances under 3 (b) below. In Column 8 the number of transferable deaths of "non-residents" are deducted, and in Column 9 the number of deaths of "residents" registered outside the district are added in calculating the net death-rate of the district.

The following special cases arise as to Transferable Deaths:—

(1) Persons dying in Institutions for the sick or infirm, such as hospitals, lunatic asylums, workhouses, and nursing homes (but not almshouses) must be regarded as residents of the district in which they had a fixed or usual residence at the time of admission. If the person dying in an Institution had no fixed residence at the time of admission, the death is not transferable. If the patient has been directly transferred from one such institution to another, the death is transferable to the district of residence at the time of admission to the first Institution.

(2) The deaths of infants born and dying within a year of birth in an Institution to which the mother was admitted for her confinement should be referred to the district of fixed or usual residence of the parent.

(3) Deaths from violence are to be referred (a) to the district of residence, under the general rule; (b) if this district is unknown, or the deceased had no fixed abode, to the district where the accident occurred, if known; (c) failing this, to the district where death occurred, if known; and (d) failing this, to the district where the body was found.

Area of District in acres  
(land and inland  
water) 21,219.

Total population at all ages.....802,940 } At Census  
Total families or separate occupiers ...173,823 } of  
1921





TABLE II.  
CITY OF LIVERPOOL.

Cases of Infectious Disease notified during the Year 1926.

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 ... ..	...	...	...	...	...	...	...	...
Plague ... ..	2	...	...	1	...	...	1	...
Diphtheria (and Croup)...	1519	35	415	768	170	118	11	2
Erysipelas ... ..	567	16	21	47	72	158	193	60
Scarlet fever ... ..	2244	34	712	1268	160	65	5	...
Typhus fever ... ..	...	...	...	...	...	...	...	...
Enteric fever ... ..	42	...	4	7	8	20	2	1
Puerperal fever ... ..	64	...	...	...	19	45	...	...
Do. Pyrexia... ..	40	...	...	...	18	22	...	...
Cerebro-Spinal Fever ... ..	16	7	2	7	...	...	...	...
Poliomyelitis and Polioencephalitis ...	19	1	9	6	2	1	...	...
Ophthalmia Neonatorum ... ..	649	649	...	...	...	...	...	...
Pulmonary Tuberculosis ... ..	2467	10	95	474	543	838	454	53
Tuberculosis other than Pulmonary ...	602	13	129	235	122	70	28	5
Anthrax ... ..	4	...	...	...	3	1	...	...
Measles and German Measles ... ..	8694	529	3813	4250	102	...	...	...
Pneumonia and Influenzal Pneu- monia ... ..	2200	253	727	301	234	378	225	82
Malaria ... ..	56	...	...	...	14	32	8	2
Trench Fever ... ..	...	...	...	...	...	...	...	...
Dysentery .. ..	8	...	1	...	2	4	1	...
Encephalitis Lethargica... ..	114	3	4	12	32	38	22	3
Totals ... ..	19307	1550	5932	7376	1501	1790	950	208

City Hospital North, Netherfield Road.  
 " " South, Grafton Street.  
 " " East, Mill Lane, Old Swan.  
 " " Fazakerley Isolation.  
 " " do. Annexe.  
 " " Sparrow Hall, Fazakerley.  
 Sanatorium, Fazakerley.  
 " Highfield.

} All within the City.

All the above Institutions are provided by the Corporation of Liverpool.





TABLE III.  
CITY OF LIVERPOOL.  
Causes of, and ages at, Death during the Year 1926.  
(See notes at back.)

C

Causes of Death.	NETT DEATHS AT THE SURJOINED AGES OF "RESIDENTS" WHETHER OCCURRING WITHIN OR WITHOUT THE DISTRICT (a).									Total Deaths whether of "Residents" or "non-Residents" in Institutions in the District (b).
	All ages.	Under 1 year.	1 and under 2 years.	2 and under 5 years.	5 and under 15 years.	15 and under 25 years.	25 and under 45 years.	45 and under 65 years.	65 and upwards.	
1	2	3	4	5	6	7	8	9	10	11
All causes { Certified (c) .....	11558	2058	710	443	394	507	1410	2848	3188	6079
{ Uncertified .....	68	8	—	2	—	1	8	21	28	4
1. Enteric Fever .....	6	—	—	—	1	1	4	—	—	8
2. Small-pox .....	—	—	—	—	—	—	—	—	—	—
3. Measles .....	221	58	96	53	11	1	1	1	—	150
4. Scarlet Fever .....	24	5	3	9	7	—	—	—	—	24
5. Whooping Cough .....	188	77	68	39	4	—	—	—	—	125
6. Diphtheria and Croup .....	112	15	19	32	42	2	1	1	—	109
7. Influenza .....	141	5	4	3	4	14	24	51	36	18
8. Erysipelas .....	30	8	1	—	1	1	3	7	9	32
9. Phthisis (Pulmonary Tuberculosis) ..	1033	5	8	17	36	201	434	291	41	612
10. Tuberculous Meningitis .....	88	15	10	27	23	8	4	1	—	86
11. Other Tuberculous Diseases .....	129	6	9	18	28	17	27	14	10	86
12. Cancer, malignant disease. ....	993	—	1	1	1	4	98	529	359	506
13. Rheumatic Fever .....	38	—	—	—	14	7	5	7	5	10
14. Meningitis (See note (d)) .....	69	28	11	10	10	3	5	2	—	30
15. Organic Heart Disease .....	906	—	—	—	13	30	124	342	397	334
16. Bronchitis .....	1049	122	25	9	10	5	43	250	585	310
17. Pneumonia (all forms) .....	1476	421	275	133	61	35	136	238	177	658
18. Other diseases of Respiratory organs	143	12	9	5	4	5	27	37	44	54
19. Diarrhoea and Enteritis. (See note (e))	522	413	109	—	—	—	—	—	—	354
20. Appendicitis and Typhlitis .....	46	—	—	2	6	16	12	6	4	50
21. Cirrhosis of Liver .....	30	—	—	—	—	—	2	22	6	7
21a. Alcoholism .....	2	—	—	—	—	—	—	2	—	—
22. Nephritis and Bright's Disease .....	289	1	1	1	4	14	38	140	90	147
23. Puerperal Fever .....	28	—	—	—	—	5	23	—	—	27
24. Other accidents and diseases of Pregnancy and Parturition .....	43	—	—	—	—	3	40	—	—	34
25. Congenital Debility and Malformation, including Premature Birth .....	624	600	14	1	4	4	1	—	—	248
26. Violent Deaths, excluding Suicide ...	287	15	13	27	37	25	52	71	47	214
27. Suicide .....	75	—	—	—	—	1	25	43	7	18
28. Other Defined Diseases .....	3005	255	34	57	72	106	287	798	1396	1837
29. Diseases, ill-defined or unknown .....	28	5	—	1	1	—	2	16	3	1
Totals .....	11626	2066	710	445	394	508	1418	2869	3216	6083
Sub-Entries included in above figures—										
Cerebro-Spinal Meningitis .....	12	6	2	1	3	—	—	—	—	12
Poliomyelitis & Polioencephalitis .....	5	1	1	2	1	—	—	—	—	4
*Encephalitis Lethargica .....	29	2	—	—	1	4	13	8	1	19
*Pneumonia .....	589	64	38	32	35	27	114	169	110	220

\* Sub-Entries should here be made for other deaths which it is desirable to distinguish, on account of their administrative importance or special interest (e.g. any deaths from Anthrax, Typhus or Glanders, which have been included under 28, Other Defined Diseases; or deaths from pneumonia other than broncho pneumonia which have been included under 17, Pneumonia all forms).

## NOTES TO TABLE III.

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The classification and numbering of Causes of Death are those of the "Short List" on page XXV. of the Manual of the International List of Causes of Death, which has been consulted and followed in all cases of doubt.

- (a) All "Transferable Deaths" of residents, *i.e.*, of persons resident in the District who have died outside it, are *included* with the other deaths in Columns 2-10. Transferable deaths of non-residents, *i.e.*, of persons resident elsewhere in England and Wales who have died in the District, are in like manner *excluded* from these columns. For the precise meaning of the term "transferable deaths" *see* footnote to Table I.

The total deaths in Column 2 of Table III. equal the figures for the year in Column 12 of Table I.

- (b) All deaths occurring in institutions for the sick and infirm situated within the district, whether of residents or of non-residents, are entered in the last column of Table III.
- (c) All deaths certified by registered Medical Practitioners and all Inquest cases are classed as "Certified"; all other deaths are regarded as "Uncertified."
- (d) Exclusive of "Tuberculous Meningitis" (10), but inclusive of Cerebro-Spinal Meningitis.
- (e) Title 19 has been used for deaths from Diarrhoea and Enteritis of children under 2 years of age. (In the "Short List" deaths from Diarrhoea, and Enteritis under 2 years are included under Title 19; those at 2 years and over being placed under Title 28.)



TABLE IV.  
CITY OF LIVERPOOL.  
INFANT MORTALITY DURING THE YEAR 1926.

Nett Deaths from stated Causes at various Ages under One Year of Age.

(See Note (a) at back).

CAUSE OF DEATH.								Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 4 Weeks.	4 Weeks and under 3 Months.	3 Months and under 6 Months.	6 Months and under 9 Months.	9 Months and under 12 Months.	Total Deaths under One Year.
All Causes.	Certified	...	...	...	...	...	...	415	105	85	60	665	335	394	350	314	2058
	Uncertified	...	...	...	...	...	...	4	—	—	—	4	1	2	—	1	8
Small-pox	...	...	...	...	...	...	...	—	—	—	—	—	—	—	—	—	—
Chicken-pox	...	...	...	...	...	...	...	—	—	1	—	1	—	—	—	1	2
Measles	...	...	...	...	...	...	...	—	—	—	—	—	1	3	15	39	58
Scarlet Fever	...	...	...	...	...	...	...	—	—	—	—	—	—	—	3	2	5
Whooping Cough	...	...	...	...	...	...	...	—	—	—	—	—	10	7	23	37	77
Diphtheria and Croup	...	...	...	...	...	...	...	—	—	—	—	—	3	1	2	9	15
Influenza	...	...	...	...	...	...	...	—	—	—	—	—	—	1	2	2	5
Erysipelas	...	...	...	...	...	...	...	—	—	—	—	—	5	1	2	—	8
Tuberculous Meningitis	...	...	...	...	...	...	...	—	—	—	—	—	2	4	6	3	15
Abdominal Tuberculosis (b)	...	...	...	...	...	...	...	—	—	—	—	—	—	1	2	2	5
Other Tuberculous Diseases	...	...	...	...	...	...	...	—	—	1	—	1	—	1	3	1	6
Meningitis (not Tuberculous)	...	...	...	...	...	...	...	—	—	—	1	1	3	2	10	6	22
Convulsions	...	...	...	...	...	...	...	19	10	3	3	35	10	7	4	4	60
Laryngitis	...	...	...	...	...	...	...	—	—	—	—	—	1	—	—	1	2
Bronchitis	...	...	...	...	...	...	...	1	2	3	7	13	36	32	24	17	122
Pneumonia (all forms)	...	...	...	...	...	...	...	6	10	10	11	37	68	98	117	101	421
Diarrhoea	...	...	...	...	...	...	...	—	2	1	1	4	22	64	35	24	149
Enteritis	...	...	...	...	...	...	...	2	3	4	7	16	56	92	60	40	264
Gastritis	...	...	...	...	...	...	...	—	—	1	—	1	2	—	2	1	6
Syphilis	...	...	...	...	...	...	...	1	3	4	3	11	8	6	—	—	25
Rickets	...	...	...	...	...	...	...	—	—	—	—	—	3	3	1	3	10
Suffocation, overlying	...	...	...	...	...	...	...	4	1	—	2	7	3	—	—	—	10
Injury at Birth	...	...	...	...	...	...	...	6	—	—	—	6	1	—	—	—	7
Atelectasis	...	...	...	...	...	...	...	41	2	1	—	44	—	—	—	—	44
Congenital Malformations (c)	...	...	...	...	...	...	...	33	15	10	3	61	18	12	9	2	102
Premature Birth	...	...	...	...	...	...	...	245	36	24	8	313	16	4	1	1	335
Atrophy, Debility and Marasmus...	...	...	...	...	...	...	...	35	8	11	6	60	45	40	12	6	163
Other Causes	...	...	...	...	...	...	...	26	13	11	8	58	23	17	17	13	128
								419	105	85	60	669	336	396	350	315	2066

Nett Births in the year { Legitimate ... 18,982  
Illegitimate ... 810

Nett Deaths in the year of { Legitimate Infants 1,885  
Illegitimate Infants 181

#### NOTES TO TABLE IV.

- (a) The total in the last column of Table IV. should equal the total in column 10 of Table I., and in column 3 of Table III.
- (b) Under Abdominal Tuberculosis are to be included deaths from Tuberculous Peritonitis and Enteritis and from *Tabes Mesenterica*.
- (c) The total deaths from Congenital Malformations, Premature Birth, Atrophy, Debility and Marasmus, should equal the total in Table III. under the heading Congenital Debility and Malformation, including Premature Birth.

Want of Breast Milk is included under Atrophy and Debility.

- (d) For references to the meaning of any other headings, *see* notes attached to Table III.

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fw

In recording the facts under the various headings of Tables I., II., III. and IV., attention has been drawn to the notes on the Tables.



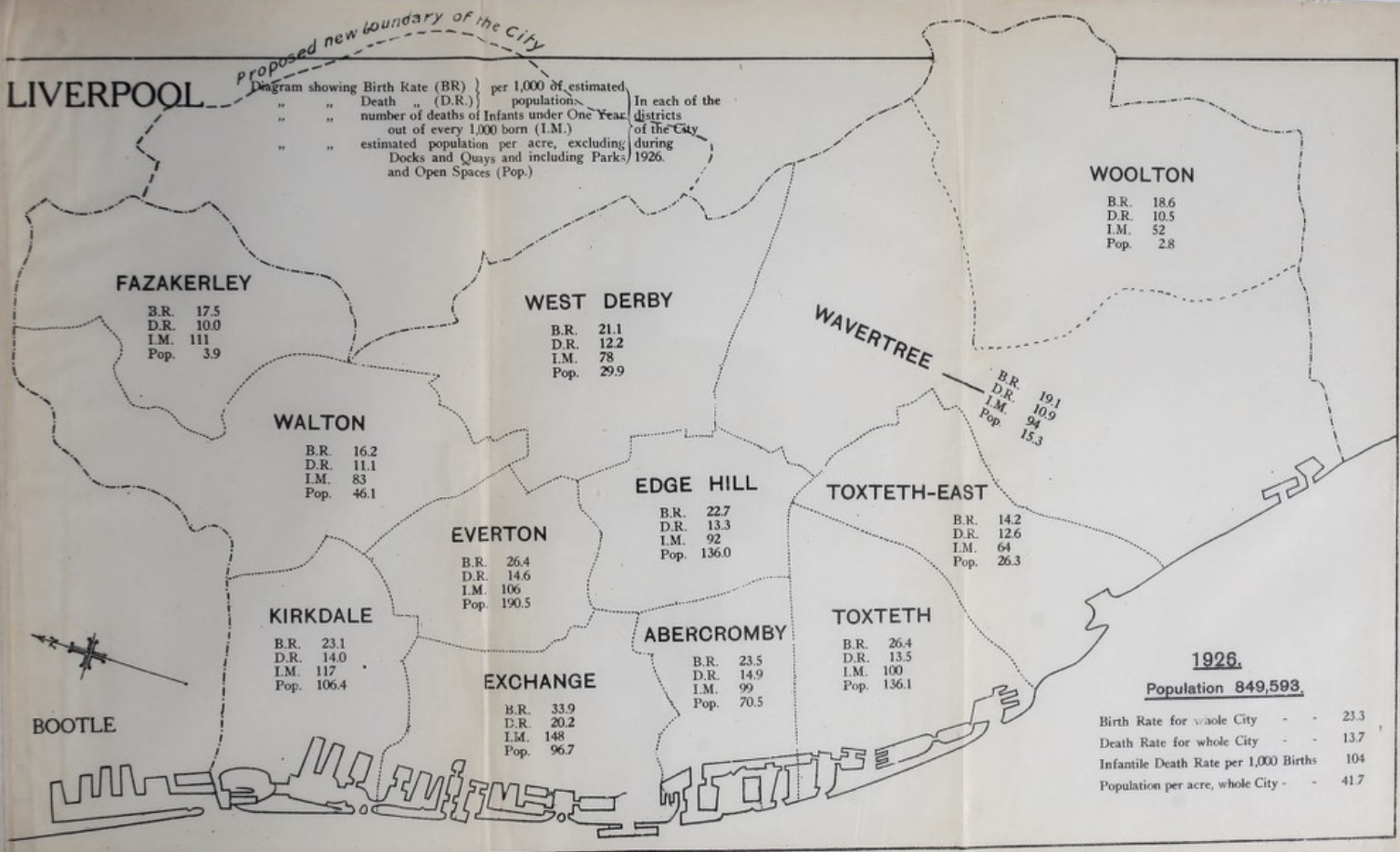


Diagram showing Birth Rate (B.R.)  
 and to show in "Deaths" (D.R.)  
 "number of deaths of  
 out of every 1,000  
 estimated population  
 Docks and Quay  
 and Open Space

VERPOOL

FAZAKERLEY

B.R. 17.5  
 D.R. 10.0  
 I.M. 111  
 Pop. 3.9

WEST DERBY

B.R. 21.2  
 D.R. 12.2  
 I.M. 87  
 Pop. 6.2

WALTON

B.R. 16.2  
 D.R. 11.1  
 I.M. 83  
 Pop. 46.1

EDGE HILL

B.R. 22.7  
 D.R. 13.3  
 I.M. 92  
 Pop. 136.0

NEVE

B.R. 4  
 D.R. 6  
 I.M. 1  
 Pop. 5

KIRKDALE

B.R. 23.1  
 D.R. 14.0  
 I.M. 117  
 Pop. 106.4

ABERCROMBY

B.R. 23.5  
 D.R. 14.9  
 I.M. 96  
 Pop. 76.5

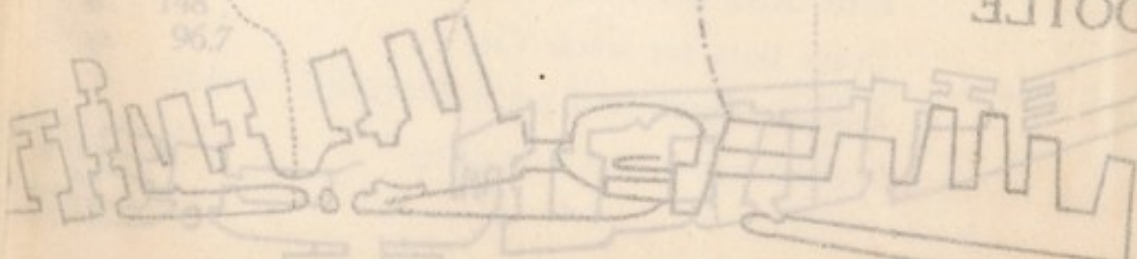
CHANGE

333  
 202  
 148  
 96.7

TOXTETH

B.R. 23.5  
 D.R. 14.9  
 I.M. 96  
 Pop. 136.1

BOOTLE





# DEATHS REGISTERED IN THE CITY OF LIVERPOOL.

## DURING THE YEAR 1926.

CAUSE OF DEATH		SEX	AGE-BELOW																			DISTRICTS										TUBERCULOSIS										City of Liverpool																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
			Male	Female	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37		38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
ALL CAUSES			6152	5474	3666	735	307	124	44	104	41	206	132	136	237	141	186	207	89	44	479	344	435	59	160	278	606	379	303	368	609	206	41	69	164	776	222	212	21	34	14	779	12	6	40	249	79	149	71	147	441	131	32	106	100	2090																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
I.—Infectious Diseases			1191	707	236	214	99	51	44	104	41	206	132	136	237	141	186	207	89	44	479	344	435	59	160	278	606	379	303	368	609	206	41	69	164	776	222	212	21	34	14	779	12	6	40	249	79	149	71	147	441	131	32	106	100	2090																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
II.—Diseases of the Nervous System			629	665	15	18	1	1	2	4	19	12	15	41	70	304	311	206	125	224	35	181	42	151	96	45	184	86	38	49	49	36	6	9	17	966	10	35	4	—	—	14	130	8	4	16	19	149	6	71	147	441	131	32	106	100	2090																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
III.—Diseases of the Circulatory System			452	477	70	15	9	5	1	1	4	29	54	25	79	140	133	109	116	—	—	47	10	10	47	49	109	72	80	104	47	4	12	20	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10

