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PUBLIC HEALTH DEPARTMENT.


REPORT ON THE HEALTH OF THE CITY OF LIVERPOOL DURING THE YEAR

— 1927 —

BY
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Medical Officer of Health.



LIVERPOOL.
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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 per acre of Districts and Proposed Incorporated Area.

PREFACE.

The health of the city during 1927, as shown by the statistics given in the Report, has been generally satisfactory.

The birth rate was 22·2 per thousand of the population, and shows a slight decrease as compared with 23·3 per thousand in the previous year, and 24·4 of the previous five years. The birth rate for England and Wales was 16·7, and for the 105 large towns was 17·1 per thousand of the population.

The general death rate was 13·9 per thousand of the population, which shows an increase when compared with 13·7 in the previous year, and is equal to the average death rate of 13·9 for the preceding five years. This increase was principally due to influenza, which was prevalent practically over the whole of Europe during the first quarter of the year, and raised the death rate in Liverpool and in England and Wales during that period to a figure comparable to that of 1919.

The infant mortality rate for the year was 94 per thousand births, and is the lowest yet recorded. During 1926 it was 104, and the previous lowest rate was 96, which was recorded in 1922. It is interesting to note that the prevalence of influenza, which caused such a large number of deaths among adults, did not apparently affect the infants to any serious extent.

The incidence of zymotic disease displayed about the usual prevalence during the year. There were, however, 600 fewer cases of scarlet fever during the year, but nearly 2,000 more cases of measles. Measles, influenza and whooping cough still account for the greatest number of deaths from infectious diseases, and appear to be less amenable to ordinary preventive measures.

One case of smallpox occurred during the year, the patient being a man who had not been vaccinated, and who had been travelling in the North of England. The freedom of the city from the disease is rather remarkable, having regard to the large number of cases which have

occurred in other parts of the country and in places quite adjacent to the city boundaries. The total number of cases which occurred in England and Wales during the year amounted to 14,769.

There were 350 deaths from children under 2 years of age from diarrhoea and enteritis. Special inquiry has been made into this subject, and it is referred to on pages 48 to 60.

The death rate from phthisis, which has been gradually diminishing in recent years, during last year was the lowest ever recorded in Liverpool, being 1.14 per 1,000 of the population, and the death rate from other forms of tuberculosis is also a record, namely, .24 per 1,000 of the population.

The deaths from cancer were slightly below the number for 1926, being 977, as against 993.

A striking feature is the increasing number of deaths which take place in public institutions. Out of 11,874 deaths, 6,123 occurred in public institutions in the city, 883 being of persons not belonging to Liverpool, but who resided in other parts of the country.

The number of births which take place in institutions also shows a gradual increase each year. In 1923, 2,138 births out of 20,695 took place in institutions. During 1927, the figures were 3,523 and 19,020 respectively.

These facts show to what an increasing extent the confidence of the people is placed in public institutions of the city.

The difficulties in regard to housing are still considerable, but much progress was made during the year, 7,295 houses being erected during the twelve months ended 31st December, 1927, of which 5,728 were erected by the local authority. Since the year 1919, the Corporation has built 15,748 houses and 169 flats, all completed, and at the end of the year a further 1,257 houses were in process of erection. During the same period, 5,526 houses were erected by private enterprise.

A considerable proportion of the houses recently built by the Liverpool Corporation was on land outside the city area, notably on the Norris Green Estate. The extension of the city on 1st April, 1928,

when the parishes of Croxteth and West Derby Rural were incorporated, brings the whole of this area into the City of Liverpool. These two parishes were formerly in the area of the Sefton Rural District Council.

The same Act of Parliament which authorised this extension included some useful powers of the Corporation in dealing with insanitary conditions, especially those which facilitate the substitution of sanitary bins for fixed ashpits (see page 230).

A clause which would have proved valuable in dealing with venereal disease, was approved by the Parliamentary Committee which considered the Bill. Unfortunately, however, owing to what can only have been a complete misunderstanding of the aims of the clause, it was opposed in the House of Commons, and had to be withdrawn.

Steps have been taken during the year to deal with an insanitary area in the central part of the city, known as the Queen Anne Street Area. This is a portion of the central area scheme, which has been described in previous reports. A full description of this property is given on page 236.

The number of cremations at the City Crematorium shows an increase, and the Garden of Remembrance, which was opened in July, 1927, should add much to the amenities of the grounds of the Crematorium (see page 174).

Health propaganda has been dealt with energetically by the Merseyside Boroughs Health Education Committee, a body composed of representatives of the City of Liverpool, and the Boroughs of Birkenhead, Bootle and Wallasey. A special medical organiser has been appointed and courses of lectures to public audiences, boys' and girls' clubs, societies, etc., are given, which will certainly do much to assist and supplement the work of Health Committees and public bodies.

PUBLIC HEALTH DEPARTMENT,
MUNICIPAL BUILDINGS,
LIVERPOOL,
1st September, 1928.

STATISTICS
RELATING TO
BIRTHS, DEATHS, AND CAUSES OF DEATH, &c.,
ZYMOTIC DISEASES AND THEIR INCIDENCE.

SUMMARY

OF

VITAL STATISTICS FOR 1927.

Area of City	21,219	Acres.
		(33 square miles)
Population (estimated to the middle of the year)	856,266	
Births	19,020,	Birth-rate 22·2.
Deaths	11,874,	Death-rate 13·9.
Infantile Mortality	1,781	Deaths under one year.
Infant Mortality Rate	94	per 1,000 Births.
Zymotic Death-rate (7 principal Zymotic Diseases)	·73	per 1,000.
All forms of Tuberculosis (including Phthisis)... ..	1·4	per 1,000.
Phthisis Death-rate	1·1	per 1,000.

BIRTHS.

The number of births recorded during the year 1927 within the city was 19,020, equal to a rate of 22·2 per 1,000 of the population, the average of the previous five years (1922-1926) being 24·4. Of the total births, 9,652 were males, and 9,368 were females. The number of illegitimate births was 835, or 4·4 per cent. of the total births, 427 being males and 408 females.

The Registrar General intimated that 302 births (164 males and 138 females) should be added to and 448 births (225 males and 223 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 17·1 per 1,000 of the population, as well as of England and Wales taken as a whole, where the rate is 16·7 per 1,000, for the year 1927.

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 1927 :—

Districts.	Estimated Population 1927.	BIRTHS.		DEATHS.	
		Number of Births.	Rate per 1,000.	Number of Deaths.	Rate per 1,000.
EXCHANGE	82,422	2,676	32·4	1,664	20·2
ABERCROMBY	45,482	991	21·7	796	17·4
EVERTON	126,234	3,187	25·2	1,915	15·2
KIRKDALE	67,413	1,546	22·9	969	14·4
EDGE HILL	91,506	1,938	21·2	1,223	13·4
TOXTETH	110,182	2,504	22·7	1,582	14·3
WALTON	95,482	1,566	16·4	1,043	10·9
WEST DERBY	95,081	2,071	21·7	1,084	11·4
WAVERTREE	93,247	1,646	17·6	1,024	11·0
TOXTETH (EAST)... ..	31,269	507	16·2	400	12·8
FAZAKERLEY	10,725	269	25·0	87	8·1
WOOLTON	7,223	119	16·5	87	12·0
	856,266	19,020	22·2	11,874	13·9

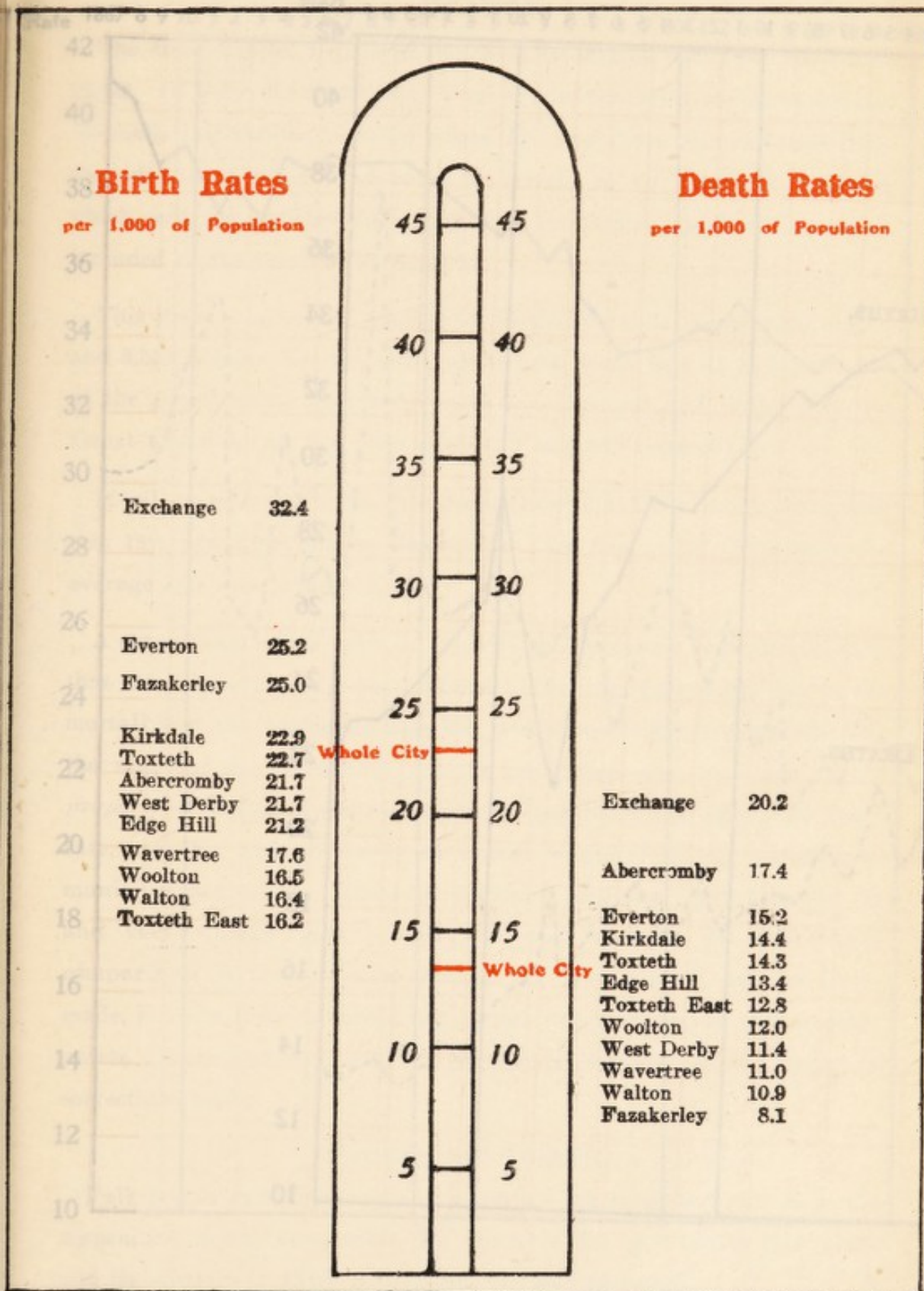
The following table shows the population, births and deaths, with birth and death rates during the last 20 years (1908 to 1927) :—

Year.	Population.	No. of Births.	Birth Rate per 1,000 of Population.	No. of Deaths.	Death Rate per 1,000 of Population.
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
1927	856,266	19,020	22·2	11,874	13·9

* City Area extended.

CITY OF LIVERPOOL.

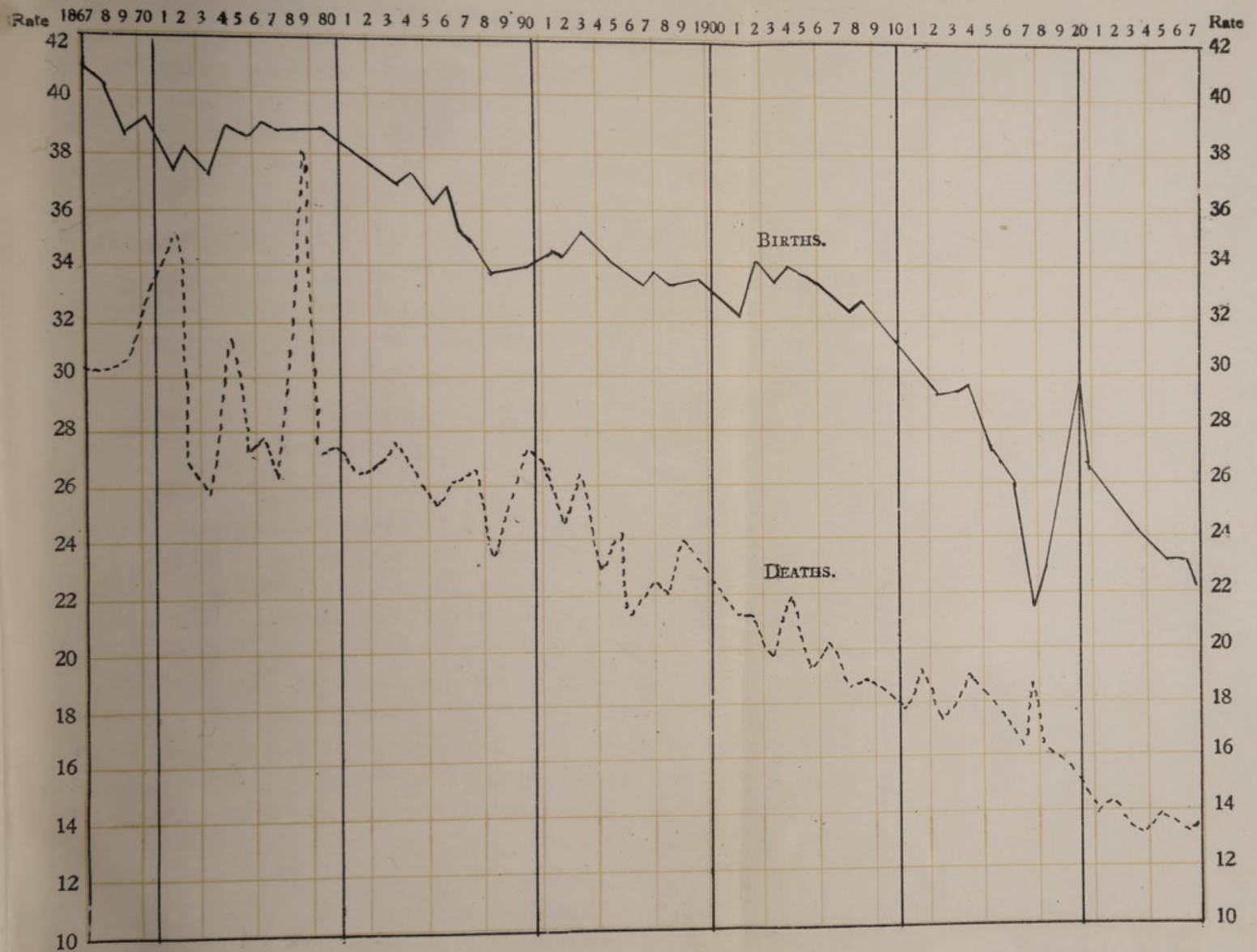
COMPARATIVE VIEW OF THE BIRTH AND DEATH RATES PER 1,000 IN THE DIFFERENT DISTRICTS OF THE CITY DURING THE YEAR 1927.



DEATHS IN PUBLIC INSTITUTIONS ARE TRANSFERRED TO THE DISTRICTS FROM WHENCE THE PATIENTS CAME.

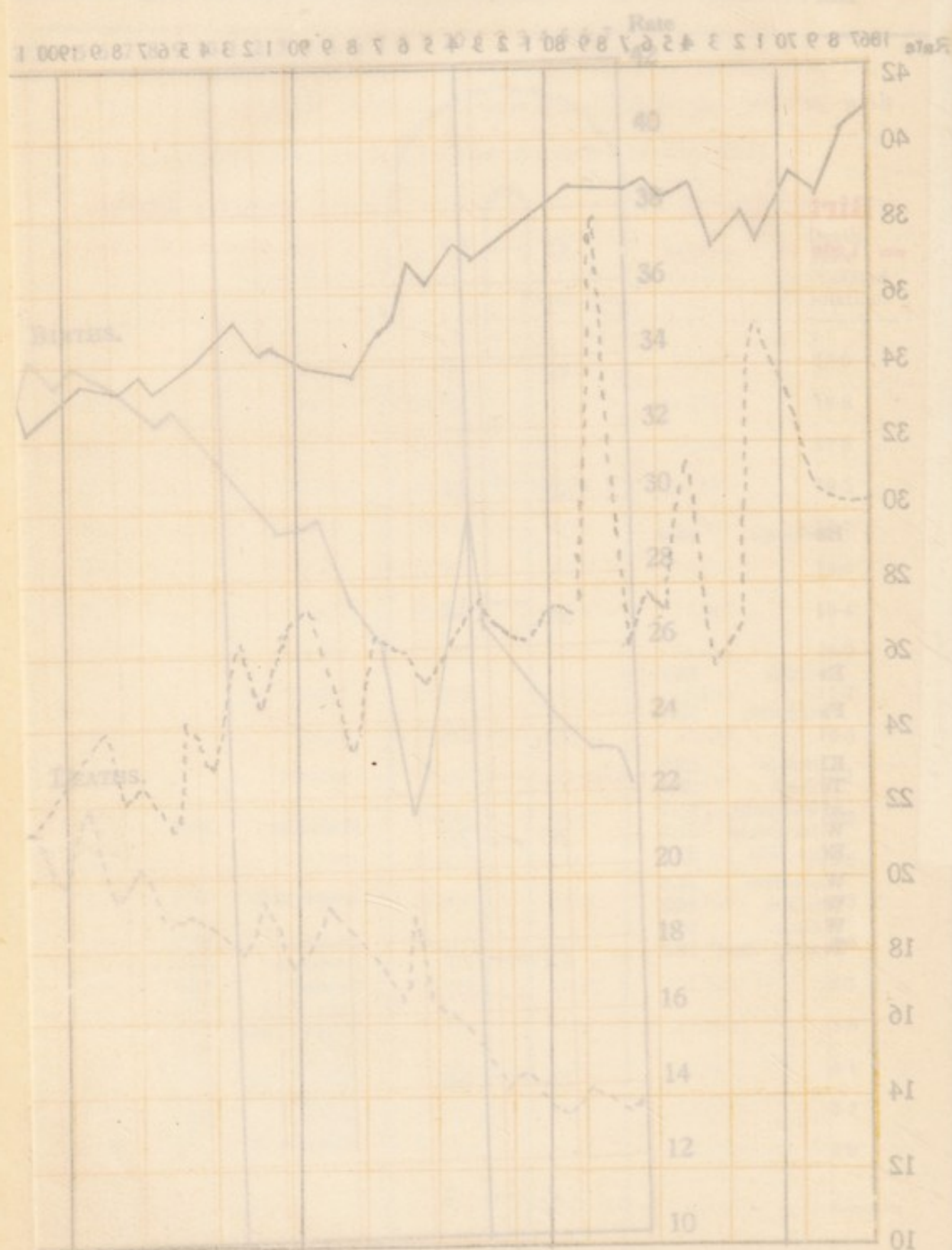
CITY OF LIVERPOOL.

BIRTH AND DEATH RATES PER 1000 OF THE POPULATION FOR THE YEARS 1867 TO 1927



CITY OF LIVERP

BIRTH AND DEATH RATES PER 1000 OF THE POPULATION



DEATHS.

The total deaths registered in the city during the year numbered 12,443. Of these deaths 975 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 406 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 11,874, being 6,336 males and 5,538 females, for the year, equal to a death rate of 13·9 per 1,000 of the population. The death rates for England and Wales and the Great towns during the year were 12·3 and 12·2 respectively.

It will be seen that in the five years (1908-1912) the average death rate was 18·5 per 1,000, whilst during the last five years (1923-1927) the average rate was 13·8 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 1927.
					March	June	Sept.	Dec.	
ALL CAUSES	...	...	...	...	4,076	2,691	2,241	2,866	11,874
I.	Infective Diseases	...	...	...	818	575	353	414	2,160
II.	General Diseases	...	...	...	336	307	337	346	1,326
III.	Dis. of Nervous System	...	...	...	267	217	156	291	931
IV.	do. Circulatory do.	...	...	...	507	377	326	465	1,675
V.	do. Respiratory do.	...	...	...	1,326	529	365	595	2,815
VI.	do. Digestive do.	...	...	...	161	176	213	246	796
VII.	do. Genito Urinary do.	...	...	...	147	101	110	135	493
VIII.	The Puerperal State	...	...	...	23	16	23	23	85
IX.	Dis. of Skin, etc.	...	...	...	20	24	11	16	71
X.	do. Bones, etc.	...	...	...	12	6	7	8	33
XI.	Malformations	...	...	...	28	14	18	26	86
XII.	Dis. of Early Infancy	...	...	...	153	115	136	139	543
XIII.	Old Age	...	...	...	160	137	74	78	449
XIV.	External Causes	...	...	...	103	97	108	82	390
XV.	Ill defined Causes	...	...	...	15	—	4	2	21
Ages at Death.	Under 1 year	...	...	...	576	371	389	445	1,781
	1 to 5 years	...	...	...	481	326	198	201	1,206
	5 to 10 years	...	...	...	57	59	50	61	227
	10 to 15	„	...	...	37	43	33	31	144
	15 to 20	„	...	...	70	64	43	60	237
	20 to 25	„	...	...	103	74	66	70	313
	25 to 45	„	...	...	448	327	265	343	1,383
	45 to 65	„	...	...	1,003	673	571	729	2,976
	65 and upwards	...	...	...	1,301	754	626	926	3,607

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 57 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 11,874 in the year 1927. The general death rate has fallen from 28.5 to 13.9 per thousand, a fall of over 50 per cent. The slight rise in the death rate from 1926 is entirely accounted for by the rise in the respiratory death rate.

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 92 per cent. during the 57 years.

A similar steady decline has been shown by the tubercular diseases, which have fallen to 38.0 per cent. of the earlier figure. These deaths now account for less than 10 per cent. of the total.

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 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 48 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 contrast, however, there has been a considerable increase in the deaths from cancer during the past 50 years (see page 8). The figures for 1927, however, show a slight decrease.

If the general rate of mortality experienced in 1871-80 had prevailed during the year 1927, there would have been 24,404 deaths instead of 11,874, the number actually recorded, a saving of 12,530 lives being thereby effected.

CITY OF LIVERPOOL.

DEATHS FROM CERTAIN GROUPS OF DISEASES IN EACH DECADE FROM 1871 to 1920 and DURING 1921 to 1927.

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
1921-1925	4,076	6,532	15,075	4,348	29,731	4,598	58,355
1926	708	1,250	2,809	1,474	6,241	993	11,626
1927	363	1,179	3,083	1,146	5,770	977	11,874

8

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
1921-1925	7.0	11.2	25.8	7.5	50.9	7.9	100.0
1926	7.6	10.7	24.1	12.7	54.2	8.5	100.0
1927	3.0	9.9	26.0	9.6	48.6	8.2	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
1921-1925	0.98	1.57	3.64	1.05	7.18	1.10	14.1
1926	0.83	1.47	3.31	1.73	7.34	1.17	13.7
1927	0.42	1.37	3.60	1.34	6.74	1.14	13.9

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
1921-1925	18.8	43.3	63.8	37.5	41.3	275.0	49.5
1926	15.9	40.8	48.0	61.7	42.2	286.5	48.0
1927	8.1	38.0	63.1	47.9	38.8	285.0	48.8

TABLE SHOWING 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 1927 IN LIVERPOOL.

1927.	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.	* 94.0	33.5	10.5	2.5	2.2	4.2	5.3	9.8	19.9	45.2	113.6	239.1	13.9
Total Number of Deaths at each Age-Period.	1781	739	467	227	381	581	657	1069	1452	1864	1888	768	11874
Approximate Population	20934	22048	44641	89422	171810	139446	124511	109472	72904	41245	16622	3211	856266

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

DEATHS IN PUBLIC INSTITUTIONS.

In Liverpool the number of deaths which take 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 6,123, and included 883 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)	...	...	...	...	542	10
Mill Road Infirmary	...	...	...	...	896	41
Walton Institution (Rice Lane)	...	...	...	...	1,231	284
Toxteth Institution (Smithdown Road)	...	...	...	...	677	22
Alder Hey Hospital	...	...	...	...	497	66
Belmont Road Institution	...	...	...	...	250	33
Kirkdale Homes	...	...	...	...	166	18
Royal Infirmary	...	...	...	...	334	92
David Lewis Northern Hospital	...	...	...	...	271	106
Royal Southern Hospital	...	...	...	...	202	38
Stanley Hospital	...	...	...	...	100	24
Royal Liverpool Children's Hospital	...	...	...	...	156	35
Maternity Hospital	...	...	...	...	55	5
Hospital for Women	...	...	...	...	23	14
Samaritan Hospital	...	...	...	...	1	1
Consumption Hospital	...	...	...	...	22	14
Carried forward					5,423	803

					Total Deaths.	Deaths of non-residents.
				Brought forward	5,423	803
Hahnemann Hospital	...	...	...	...	24	6
Eye and Ear Infirmary	...	...	...	...	7	3
Garston Hospital	...	...	...	...	12	—
City Hospital North	...	...	...	...	5	—
Do. South	...	...	...	...	36	—
Do. East, Mill Lane	...	...	...	...	54	1
Do. Fazakerley	...	...	...	...	137	9
Do. do. Annexe	...	...	...	...	58	—
Do. Sparrow Hall	...	...	...	...	1	—
Sanatorium Fazakerley	...	...	...	...	67	2
Do. Highfield (Broad Green)	...	...	...	...	150	2
St. Joseph's Home	...	...	...	...	34	7
Home for Incurables	...	...	...	...	12	4
House of Providence	...	...	...	...	7	7
Tuebrook Villa Asylum	...	...	...	...	8	4
Turner Memorial Home	...	...	...	...	13	2
St. Augustine's Home	...	...	...	...	18	3
H.M. Prison, Walton	...	...	...	...	2	1
Other Institutions	...	...	...	...	55	29
					<hr/> 6,123 <hr/>	<hr/> 883 <hr/>

Of the above deaths 4,259 took place in poor-law institutions, 1,207 in voluntary hospitals, 508 in city hospitals, and 149 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 1927, 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.
Number of cases	1	67	1,640	10,606	1,664	51	611	25	15	69	64	1,988
Case rate per 1,000 ...	—	0·08	1·92	12·4	1·94	2·7†	0·71	0·03	0·02	0·08	0·07	2·32
Number of deaths	—	10	12	345	90	25	24	21	2	25	3	125
Death rate per 100,000	—	1·2	1·4	40·3	10·5	131*	2·8	2·5	0·2	2·9	0·35	14·6
Percentage of Deaths to cases	—	14·9	0·7	3·2	5·4	49·0	3·9	84·0	13·3	36·2	4·6	6·3

* Death rate per 100,000 Births.

† Case rate per 1,000 Births.

PLAGUE.

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

SMALLPOX.

There was one case of smallpox in the city during the year. The patient became ill on June 17th, and was unvaccinated. He had visited several parts of the country during the latter part of May or in the beginning of June. On June 3rd he was in Doncaster, where, in all probability, he was infected.

All contacts were vaccinated or re-vaccinated, and the usual disinfection carried out. The contacts were kept under observation, but no further cases occurred. The patient recovered.

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.	
1924	...	...	3,792	...	13
1925	...	...	5,365	...	9
1926	...	...	10,205	...	19
1927	...	...	14,769	...	49

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

This striking increase in the disease may be attributed to the general 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 the severe types of 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 1926 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 show the primary vaccinations during the last five years in the city of Liverpool :—

	1922.	1923.	1924.	1925.	1926.
1.—No. of Children born ...	21,467	20,695	20,559	19,592	19,749
2.—No. of primary vaccinations ...	15,396	15,537	15,246	13,976	14,091
3.—No. of Exemption Certificates granted ...	1,916	1,360	1,263	1,408	1,394
4.—No. of Certificates of insusceptibility sent ...	165	192	125	111	123

TYPHUS FEVER.

No case occurred in Liverpool during 1927, and no indigenous cases have occurred during the course of the past nine years.

ANTHRAX.

Nine cases of anthrax occurred during the year in persons residing in the city. Three of these were men who worked on the docks amongst ships' cargoes, but one of them was a doubtful case; and although the clinical picture was fairly typical, the case was not confirmed bacteriologically.

Concerning the remaining six cases, four were workers amongst or handled foreign wool or hair, either as wool brokers, samplers or employed in wool or hair factories. The remaining two cases were labourers in tanneries, where they had handled foreign dry hides. One death occurred amongst the nine cases.

One case of anthrax was admitted to a city hospital from a tannery at Runcorn.

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 1·2 per 100,000; of the ten deaths which occurred in the year, one was that of a seaman, and in another case the sufferer was infected whilst on a holiday. One of the deaths was from Paratyphoid A infection.

Eighty cases of Enteric Fever (including one case of Paratyphoid A. and 19 cases of Paratyphoid B.) were reported during 1927 in the city and port of Liverpool. Of these, 14 were imported from overseas, five being removed from one ship, leaving 66 of indigenous origin, as against 38 in the preceding year. In the case of six of the indigenous cases the development of illness followed the consumption of shellfish (cockles in five instances, and oysters in one). Two persons were infected whilst away on holidays or otherwise.

Reference was made in the report for the year 1926 to a family in which 5 cases occurred between January and March. A further 4 cases occurred in this family in August, and still another was removed as a suspected case.

The results of inquiry into the probable causation of the reported cases is shown in the following table, the figures for the years 1922 to 1927 being shown for the purpose of comparison:—

CITY AND PORT OF LIVERPOOL. ENTERIC FEVER, 1922-27.

	CASES.						PERCENTAGE.					
	1922.	1923.	1924.	1925.	1926.	1927.	1922.	1923.	1924.	1925.	1926.	1927.
Imported by sea ...	12	5	12	14	12	14	30.0	25.0	20.0	29.2	24.0	17.5
Imported by land ...	1	—	8	3	3	2	2.5	—	13.3	6.2	6.0	2.5
Bill-fish ...	3	2	3	1	1	6	7.5	10.0	5.0	2.1	2.0	7.5
Insect infection ...	10	1	7	9	7	11	25.0	5.0	11.7	18.7	14.0	13.7
Insect infection from omitted cases ...	2	2	2	1	1	4	5.0	10.0	3.3	2.1	2.0	5.0
Iconic carrier ...	—	—	—	—	—	1	—	—	—	—	—	1.2
Probably not Typhoid	3	1	1	—	—	—	7.5	5.0	1.7	—	—	—
Total in which source was ascertained ...	31	11	33	28	24	38	77.5	55.0	55.0	58.4	48.0	47.5
Central area ...	5	3	7	10	7	17	12.5	15.0	11.7	20.8	14.0	21.2
Outer area ...	4	6	20	10	19	25	10.0	30.0	33.3	20.8	38.0	31.2
Total in which sources were not ascertained	9	9	27	20	26	42	22.5	45.0	45.0	41.6	52.0	52.5
Total for City and Port	40	20	60	48	50	80						
Infection due to B. Typhosus ...	37	17	36	43	37	60	91.9	85.0	60.0	89.5	74.0	75.0
Paratyphosus B ...	3	3	24	3	12	19	8.1	15.0	40.0	6.2	24.0	23.8
Paratyphosus A ...	—	—	—	2	1	1	—	—	—	4.2	2.0	1.2

Paratyphoid B. Nineteen 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 during April and May.

Prior to 1924, Paratyphoid B. was rarely notified. From June, 1924, to October, 1927, 25 cases were reported, the disease being more often notified than previously. Four of these occurred in the earlier part of 1927.

In November and December, 1927, a fresh outbreak occurred, 15 cases being notified in those months and a sixteenth in January, 1928. In addition to these, information was received of the occurrence of 6 cases in Seaforth, 4 in Bootle, and one each in Great Crosby and Sefton Rural, all districts to the North of Liverpool. One of the Bootle cases was infected whilst residing in Walton, Liverpool.

Of the Liverpool cases, 6 occurred in Kirkdale, the district adjoining Bootle, 3 in Everton, 2 in Edge Hill and in Wavertree, and one each in Walton, Fazakerley, and West Derby, practically all in the northern half of the city. The previous outbreak affected the whole city equally. The dates of onset of the cases varied from November 1st to December 18th, 13 being in November. In the previous outbreak the cases notified showed a younger age distribution than usually holds good, but this was not apparent in the present outbreak.

Close enquiry was made into foods partaken of by the patients. In only one case had shellfish been consumed. None of the patients had eaten watercress, and very few admitted having eaten ices or cream cakes. The milk and cream supply was entirely different in each house affected. Ten of the Liverpool patients had eaten bread obtained from a large firm of bakers, and the distribution of the cases corresponded largely with the area in which their bread was sold. Investigation revealed no manner in which the bread sold over so large an area could have been infected, and a number of sufferers, both in Liverpool and outside it, had not partaken of bread from this source. The origin of the outbreak remains uncertain. It is noteworthy that in a number of outbreaks which have occurred in this country recently the source of the infection has not been traced.

Happily the cases were very mild in character, and only one death occurred in a patient who suffered from an abdominal complication.

DIPHTHERIA.

During 1927 1,664 cases of Diphtheria were reported, giving an attack rate of 1.94 per 1,000 of the population. Of these cases 90 proved fatal, making a fatality rate of 5.4 per 100 cases, and a mortality rate of 10.5 per 100,000 population. Although the case-rate shows increase above the rates of the past five years, the fatality rate and so the number of deaths remains low.

Table 1.

DIPHTHERIA IN THE CITY OF LIVERPOOL, 1918-1927

	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.
Cases	1,302	1,959	1,654	1,182	953	993	1,105	1,504	1,519	1,664
Deaths	228	212	188	97	91	87	71	106	112	90
Case rate per 1,000 population ...	1.6	2.5	2.1	1.4	1.2	1.2	1.3	1.8	1.79	1.94
Death rate per 100,000 population	28.6	26.3	23.2	12.0	11.5	10.5	8.5	12.6	13.2	10.5
Fatality rate per 100 cases	17.5	10.8	11.4	8.2	9.5	8.8	6.4	7.0	7.4	5.4

The accompanying graphs 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 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 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, being 5·4 per cent. in 1927, the lowest ever recorded in the city. The length of time elapsing between one epidemic and the next has been increased and the height of the epidemic wave also greatly diminished.

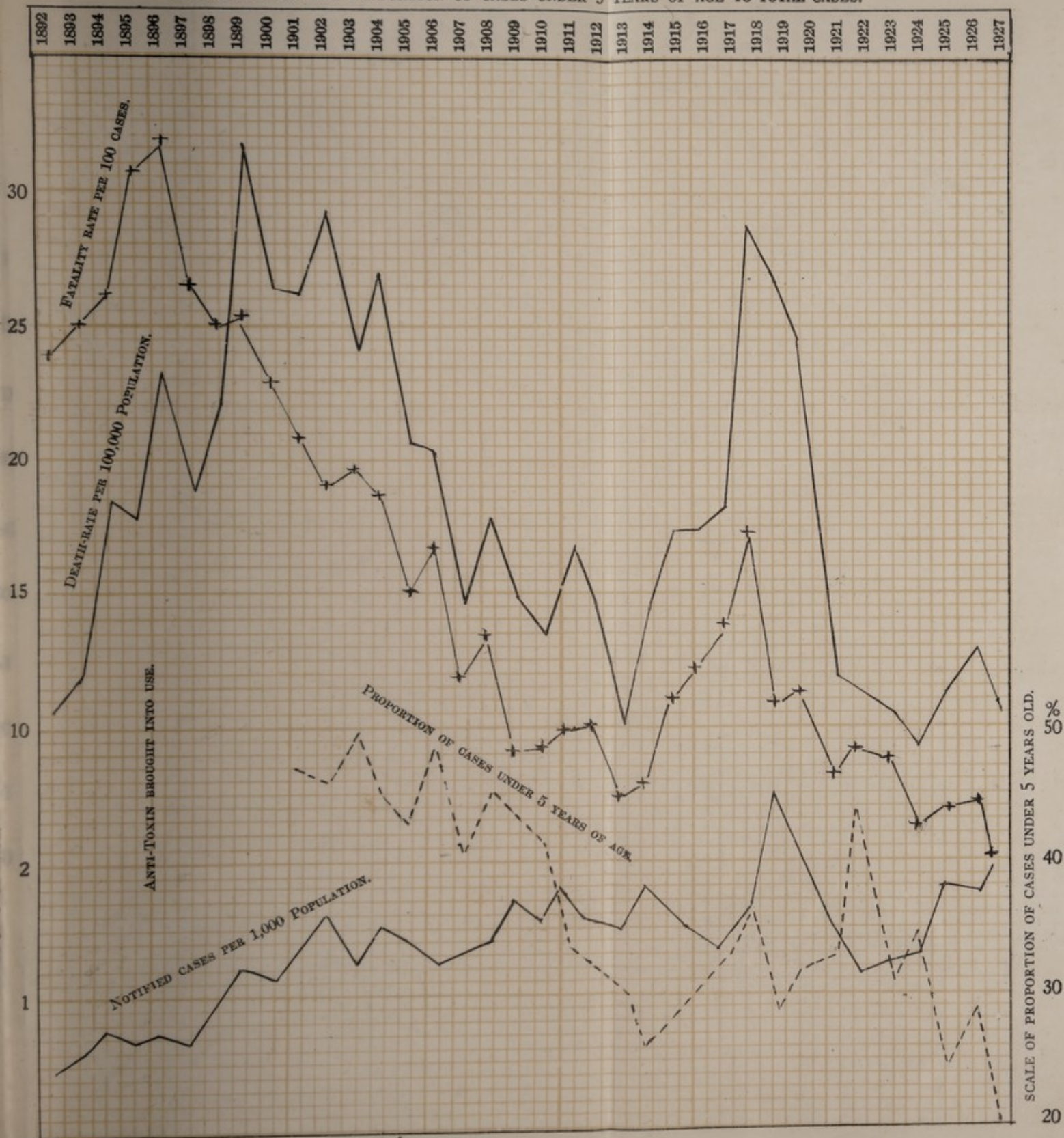
Since 1920 observations have been made to determine with greater exactitude facts of the distribution of these diseases in the different parts of the City; for this purpose the City was divided into three zones :—(I.) Central, comprising Exchange and Abercromby; (II.) middle, comprising Everton, Kirkdale, 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 2 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 35 years is due to similar causes.

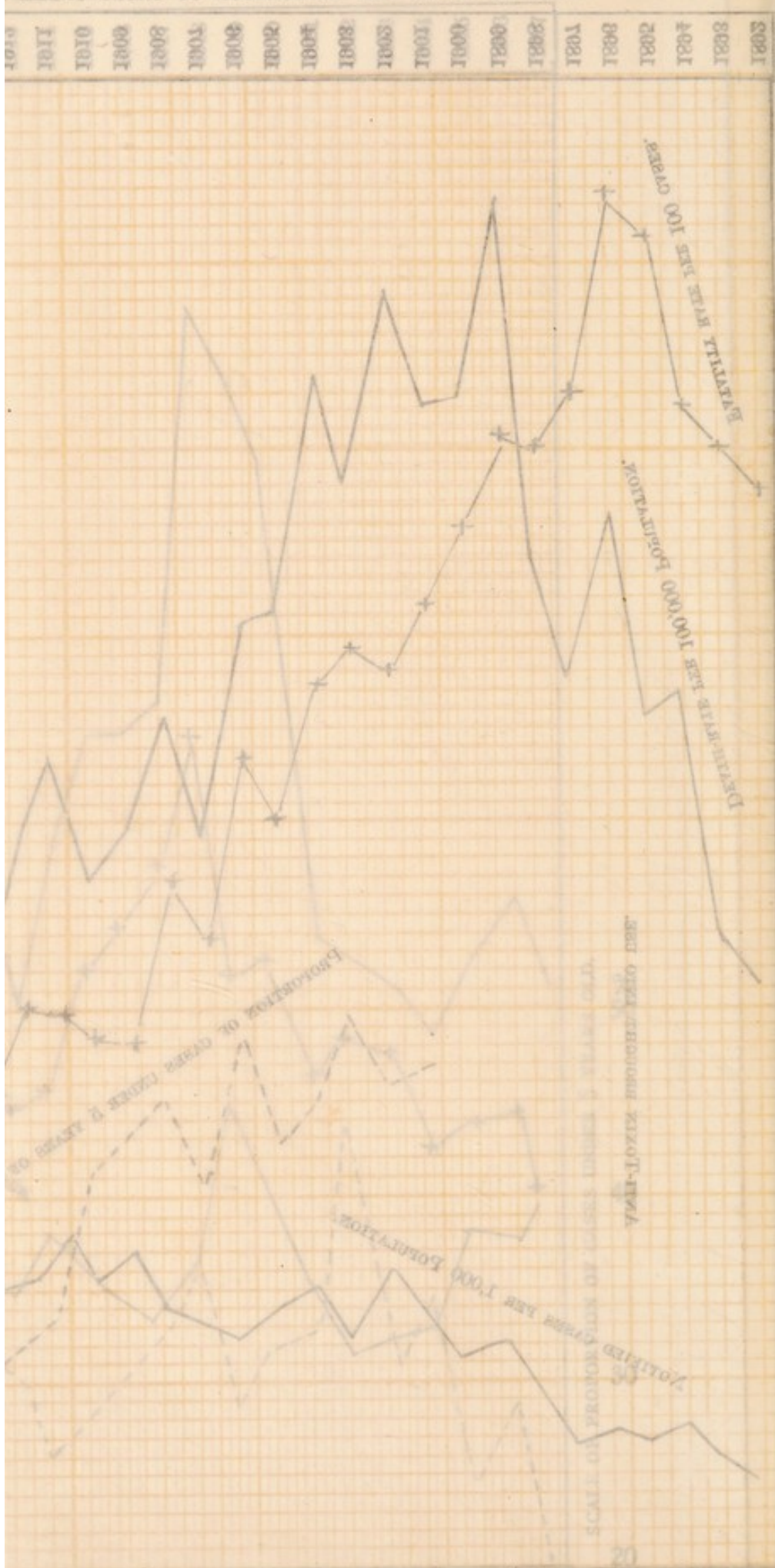
(2) The death rate has, on the whole, been highest in the central districts during the past seven years, 1921-27.

DIPHTHERIA (& MEMBRANOUS CROUP IN CITY OF LIVERPOOL DURING 1892—1927.

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.

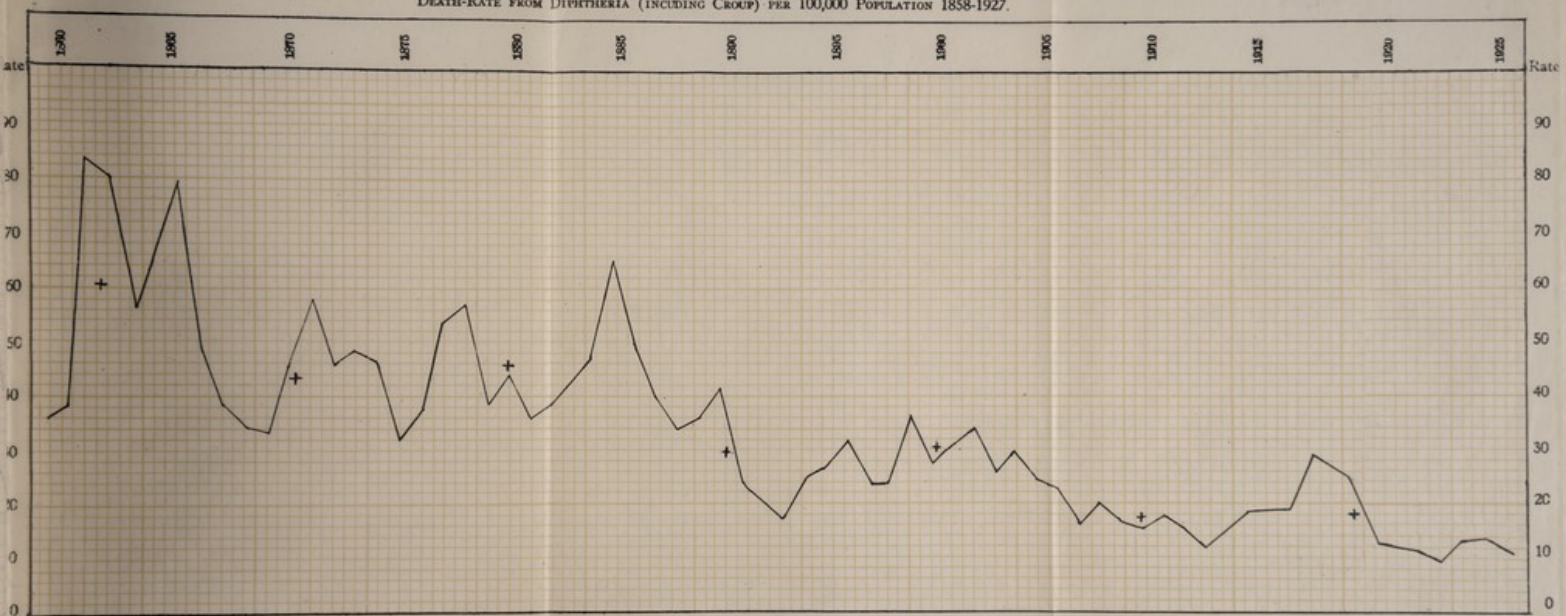


DIPHTHERIA (& MEMBRANOUS GROUP) IN CITY OF
 DEATH RATE PER 100,000 POPULATION NOTIFIED CASES PER
 CASES NOTIFIED AND PROPORTION OF CASES UNDER



CITY OF LIVERPOOL.

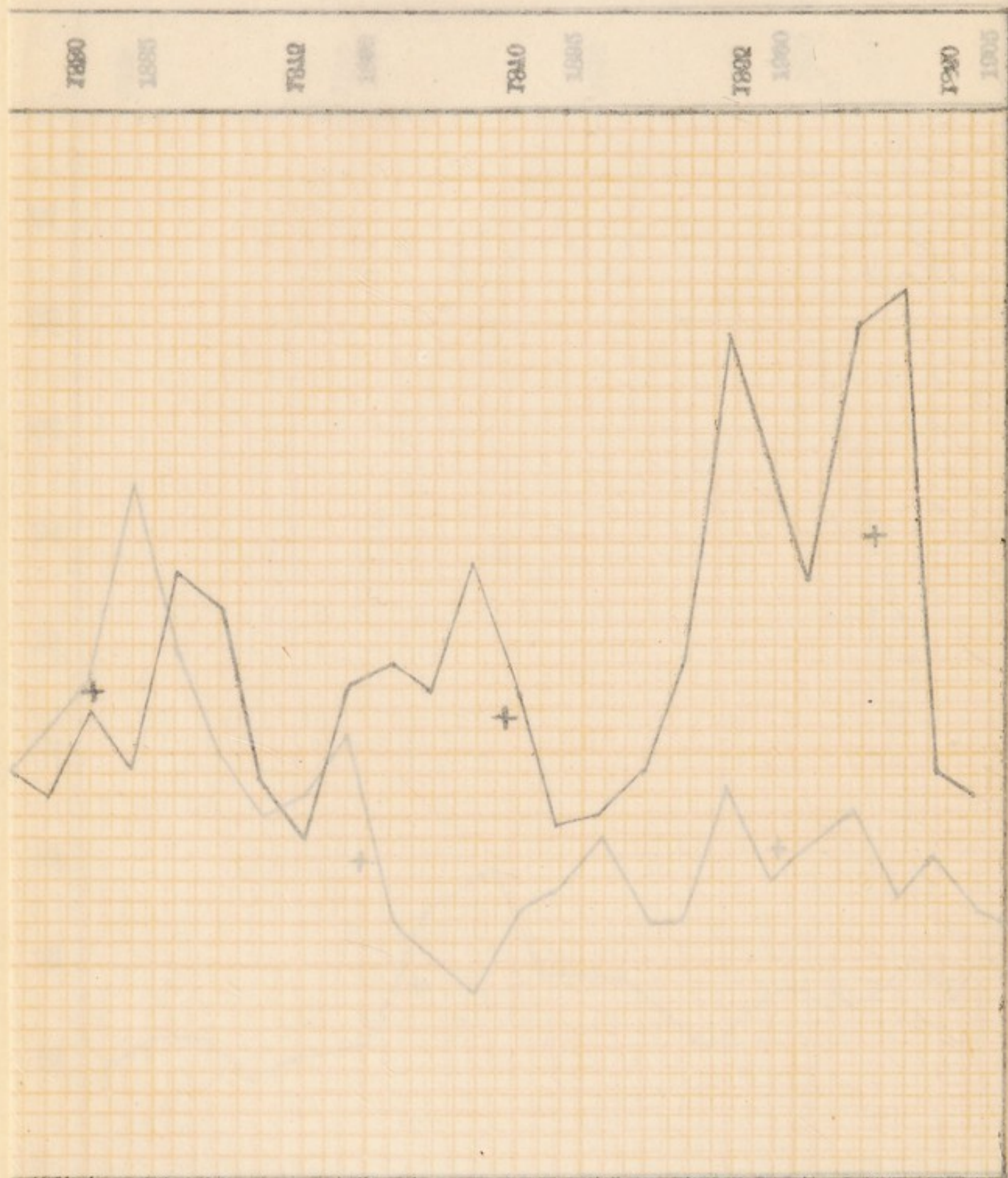
DEATH-RATE FROM DIPHTHERIA (INCLUDING CROUP) PER 100,000 POPULATION 1858-1927.



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

DEATH-RATE (FROM ALL CAUSES) PER 100,000 POPULATION 1858-1927.



The crosses indicate the average mortality rate for each season.

Table 2.

CITY OF LIVERPOOL.—DIPHTHERIA, 1923-27.

Districts	Case Rates per 1,000 population.					Death Rates per 100,000 population.					Fatality Rates.				
	1923	1924	1925	1926	1927	1923	1924	1925	1926	1927	1923	1924	1925	1926	1927
Central (1-2)	1.16	1.24	1.67	1.43	1.57	11.6	10.0	14.6	18.3	14.2	10.6	8.0	8.7	12.8	8.9
Middle (3-7)	0.99	1.21	1.68	1.05	1.90	10.7	7.2	13.0	11.5	12.0	12.9	6.0	7.7	7.0	6.3
Outer (8-12)	1.29	1.63	2.06	2.30	2.23	9.9	9.2	10.3	13.9	5.4	7.6	6.4	5.0	6.0	2.5
Whole City	1.11	1.32	1.78	1.77	1.94	10.4	10.5	12.5	13.2	10.5	9.5	6.4	7.0	7.4	5.4

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.				
	1923	1924	1925	1926	1927	1923	1924	1925	1926	1927	1923	1924	1925	1926	1927
Central (1-2)	5.3	5.8	11.5	0.6	6.3	15.1	9.2	11.5	11.2	13.4	43.0	32.7	25.4	35.8	25.4
Middle (3-7)	4.0	7.9	7.0	5.0	5.5	9.9	9.3	8.8	9.2	6.7	36.3	34.7	27.0	32.5	19.2
Outer (8-12)	10.5	4.8	11.6	20.2	9.3	4.4	5.6	5.4	4.5	5.7	23.0	33.7	18.7	22.6	14.6
Whole City	7.5	7.5	10.5	11.9	9.9	9.3	8.1	8.2	7.8	7.2	30.2	34.1	24.4	29.6	18.5

Table No. 3.
DIPHTHERIA, YEAR 1927.

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	82,422	99	13	1.2	15.7	13.1	2.0	15.1	35.3
2. Abercromby	45,482	102	5	2.2	10.9	4.9	11.8	11.8	15.6
3. Everton	126,234	234	19	1.8	15.5	8.1	2.8	9.8	22.6
4. Kirkdale	67,413	114	10	1.7	14.8	8.7	7.1	8.7	25.4
5. Edge Hill	91,506	196	8	2.1	8.7	4.1	6.2	3.1	13.7
6. Toxteth	110,182	191	10	1.7	9.1	5.2	8.3	8.4	16.7
7. Walton.....	95,482	200	12	2.1	12.6	6.0	9.7	4.0	19.5
8. West Derby East	95,081	267	8	2.8	8.4	2.9	10.8	7.1	18.3
9. Wavertree	93,247	187	3	2.0	3.2	1.6	9.7	5.7	8.6
10. Toxteth E. (Sefton P.)	31,269	18	2	0.6	6.4	1.1	3.3	5.6	5.6
11. Fazakerley	10,725	28	...	3.6	...	...	7.2	5.3	26.3
12. Woolton	7,223	18	...	2.5	...	...	9.5	5.6	5.6
Central Districts (1 to 2) ...	127,904	201	18	1.57	14.2	8.9	6.3	13.4	25.4
Middle Districts (3 to 7) ...	490,817	935	59	1.90	12.0	6.3	5.5	6.7	19.2
Outer Districts (8 to 12) ...	237,545	528	13	2.23	5.4	2.5	9.3	5.7	14.6
Whole City	856,266	1,664	90	1.94	10.5	5.4	9.9	7.2	18.5

* Cases are those with onset in 1926.

(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. The variations in case rates and in the proportion of young children are 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 1927 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.

The above observations have been confirmed by the calculation of coefficients of correlation between the fatality and certain other factors. The corresponding coefficients relating to scarlet fever are placed alongside for comparison. The coefficients relating to diphtheria indicate a significant degree of relationship in each case.

Coefficients of correlation of fatality rates and (a) case rates, (b) proportion of cases under 2 years to total cases. (c) proportion of cases under 5 years to total cases in Diphtheria, 1922-1927, and Scarlet Fever, 1920-1927. The figures correlated relate to the three zones, central, middle and outer, of the city for each year of observation. The probable errors are given.

Table No. 4.

	SCARLET FEVER	DIPHTHERIA
Fatality Rates and Case Rates	+0.0098+0.1375	-0.7571+0.0588
Fatality Rates and Cases under 2yrs...	+0.4011+0.1155	+0.4732+0.1070
Fatality Rates and Cases under 5yrs...	+0.1739+0.0960	+0.776+0.0548

Table No. 5.
DEATHS FROM DIPHTHERIA.

DISTRICTS.	QUARTERS.								YEAR 1927		
	March.		June.		Sept.		Dec.		M.	F.	Total.
	M.	F.	M.	F.	M.	F.	M.	F.			
Exchange	5	3	1	...	...	...	2	2	8	5	13
Abercromby	1	2	...	...	...	1	1	...	2	3	5
Everton	2	...	3	3	1	3	3	4	9	10	19
Kirkdale	2	2	2	1	1	1	1	...	6	4	10
Edge Hill .....	...	3	...	...	2	2	...	1	2	6	8
Toxteth	2	4	...	...	1	1	...	2	3	7	10
Walton	2	3	1	1	1	1	2	1	6	6	12
West Derby	1	1	...	1	1	1	...	3	2	6	8
Wavertree	1	1	...	...	...	...	1	...	2	1	3
Toxteth (East) .....	...	...	...	...	1	1	...	...	1	1	2
Fazakerley .....	...	...	...	...	...	...	...	...	...	...	...
Woolton.....	...	...	...	...	...	...	...	...	...	...	...
City	16	19	7	6	8	11	10	13	41	49	90

AGES AT DEATH.

Under 1 year.	1	2—	3	4—	5—	10—	15—	20	30—	40—	50	60—	All Ages.
8	24	15	9	7	18	6	2	...	...	...	1	...	90

AGES OF NOTIFIED CASES.

24	82	118	121	110	621	235	121	138	61	21	8	4	1664
64.6%						35.4%							

PERCENTAGE FATALITY AT EACH AGE.

23.5	29.2	12.7	7.5	6.4	2.9	2.5	1.7	12.5	...	5.41
------	------	------	-----	-----	-----	-----	-----	-----	-----	-----	------	-----	------

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 5·4 per cent. in 1927, is due to the administration of anti-toxin promptly and in adequate amount; 95 per cent. of the notified cases were removed to hospital for treatment during 1927.

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 three years. Up to March 31st, 1928, 76 children have been inoculated without testing, and of 869 persons tested 374 (43 per cent.) have been found susceptible and immunised. A total of 945 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, a number of nurses were tested during 1927 at the City Hospital East, and those found susceptible were immunised.

From the 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; 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 practically 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 1927 only 0·7 per cent., as against 19·2 in the year 1889. The death rate from scarlet fever was 1·4 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 1.
SCARLET FEVER IN THE CITY OF LIVERPOOL, 1917-1927.

	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.
Cases	2,277	3,020	2,735	3,230	3,062	2,419	2,307	3,790	3,561	2,244	1,640
Deaths	69	125	74	70	45	39	43	63	93	24	12
Case-rate per 1,000 inhabitants ...	2·9	3·8	3·1	4·1	3·7	2·9	2·8	4·5	4·2	2·6	1·9
Death-rate per 100,000 inhabitants ...	8·8	16·0	9·3	8·9	5·5	4·7	5·2	7·4	11·0	2·8	1·4
Fatality rate per 100 cases	3·0	4·1	2·6	2·2	1·5	1·6	1·8	1·7	2·6	1·1	0·7

During 1927, 1,640 cases and 12 deaths were recorded, giving an attack rate of 1·9 per 1,000, and a mortality rate of 1·4 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 0·7 per cent., again the lowest figure recorded. In this reduction of fatality the more extended use of scarlatinal anti-toxic serum has played a part. 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 29, 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 237,545 persons, among 583 cases of scarlet fever notified there occurred only three deaths. This gives a fatality of only 0·24 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.

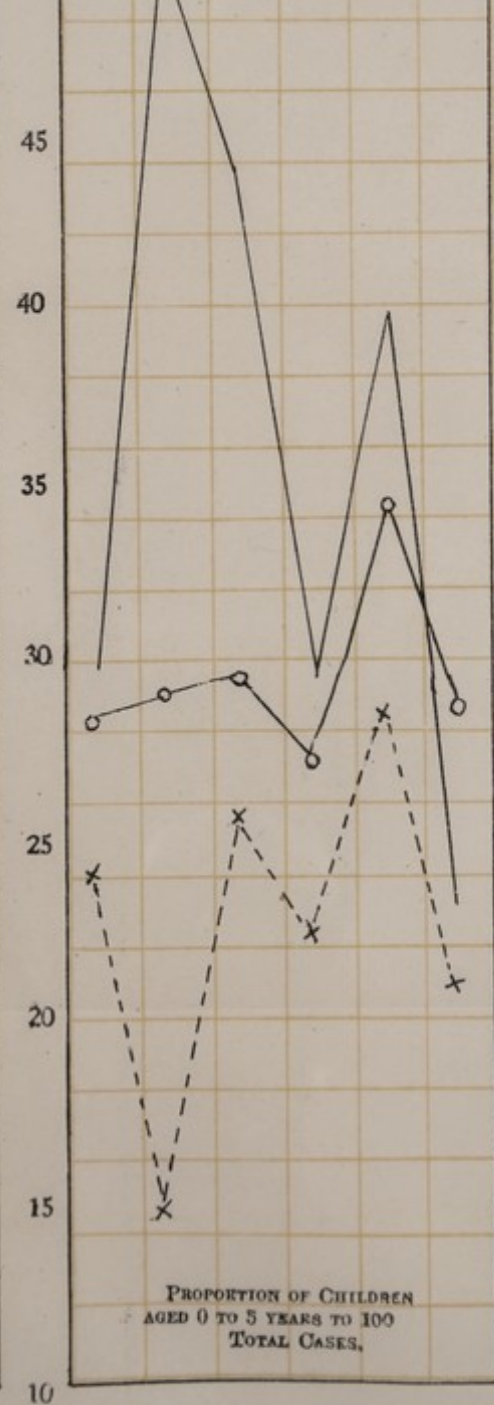
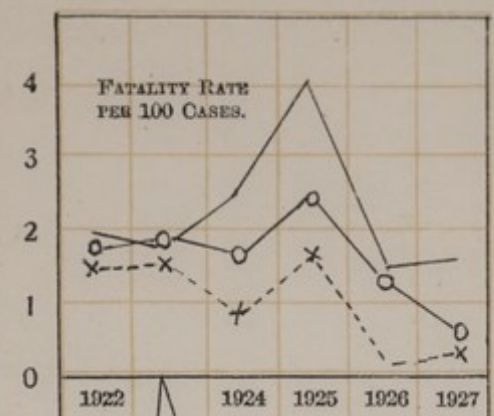
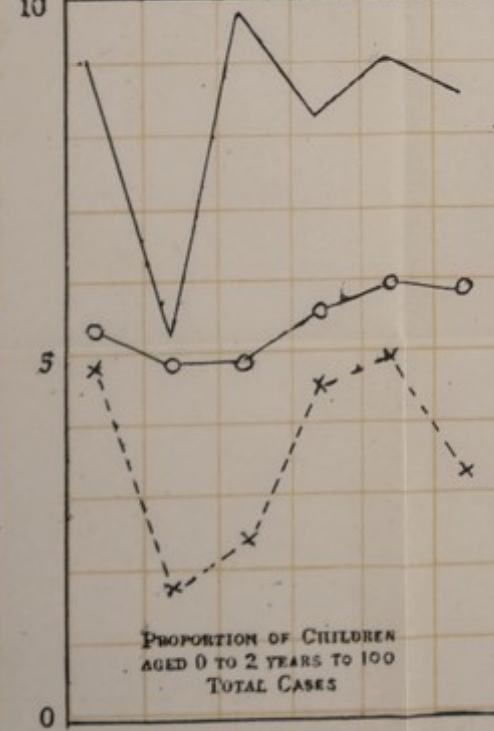
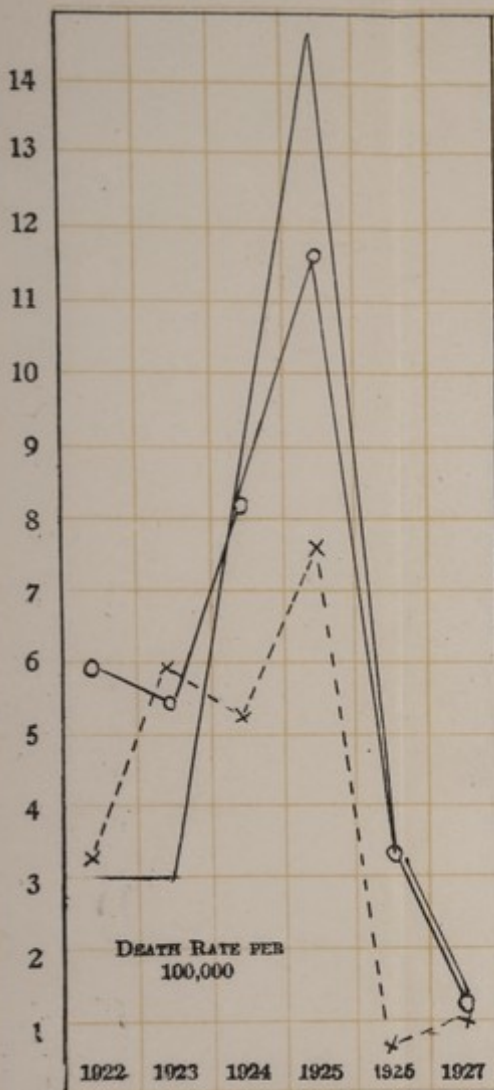
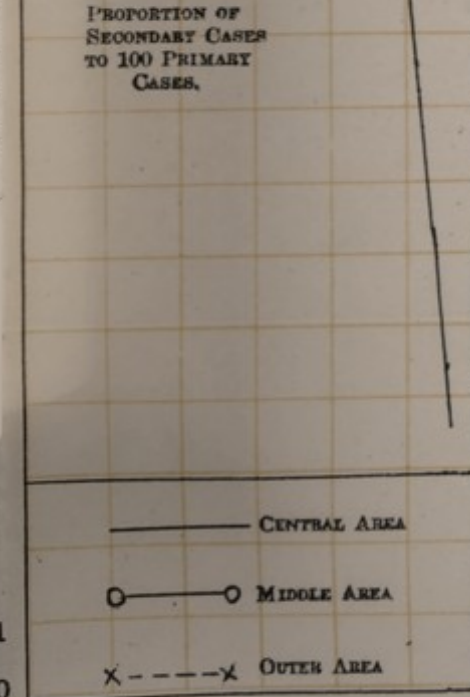
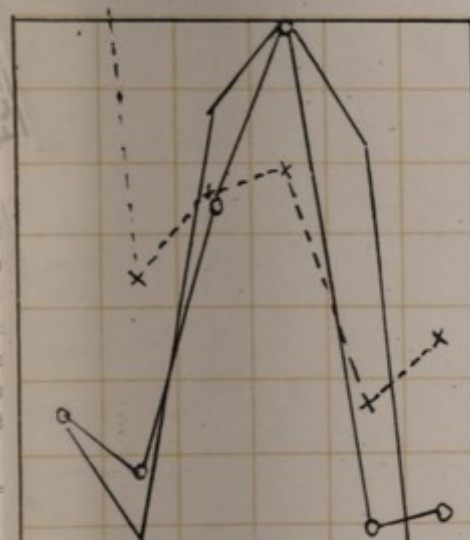
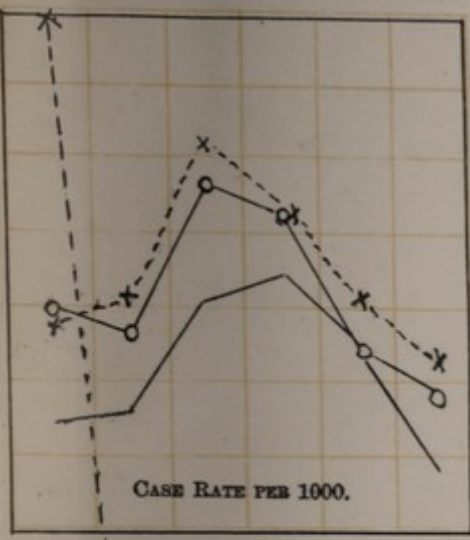
In the third table these cases and deaths are distributed into the several wards, which have also been aggregated into three zones, a central, a middle and an outer, comprising districts 1 to 2, 3 to 7, and 8 to 12, respectively.

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 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 1927 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
1927	0·0	2·0	2·5	0·0	0·0	0·14	2·7	0·44	0·7

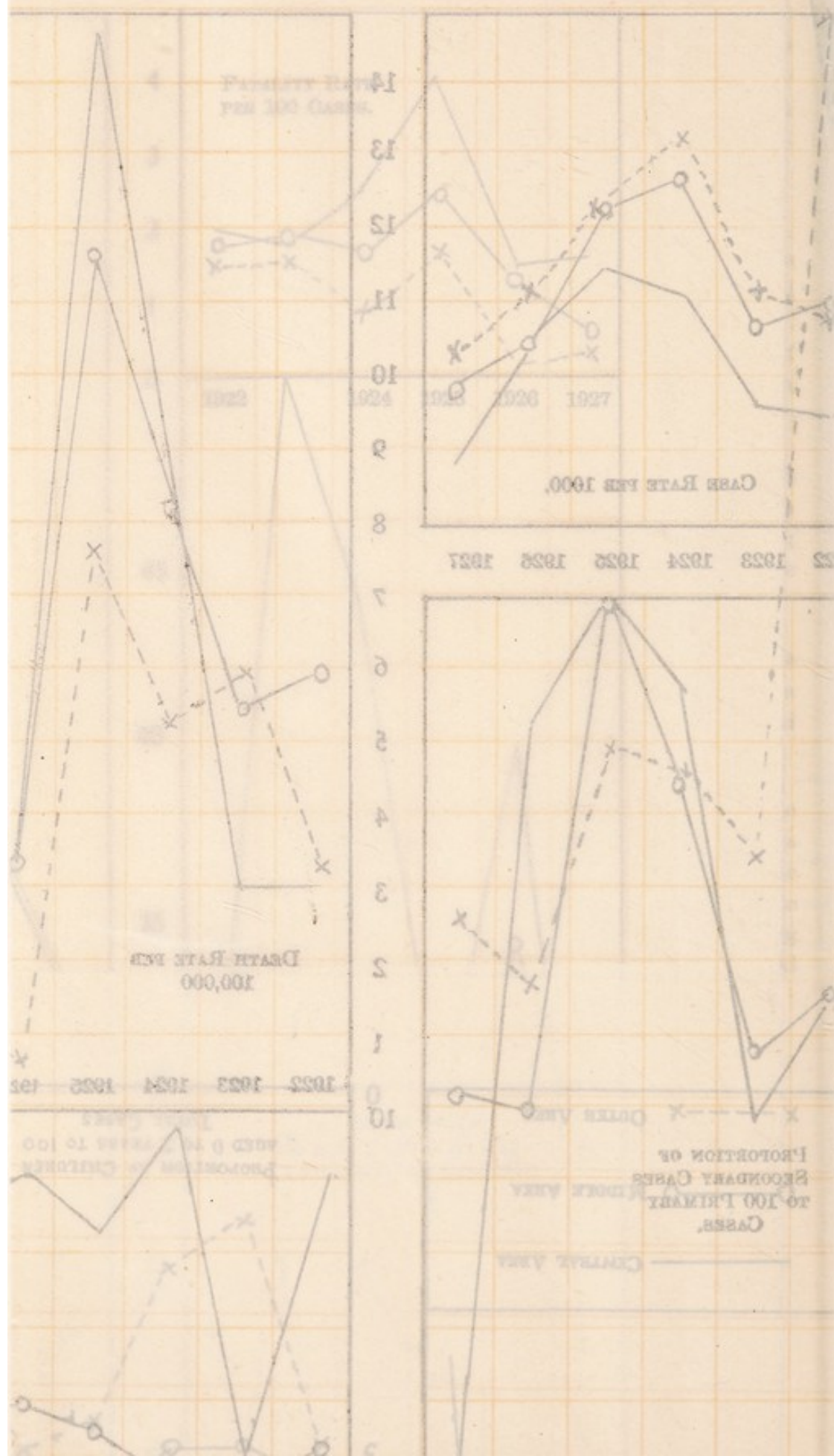
CITY OF LIVERPOOL.

Scarlet Fever 1922-1927.

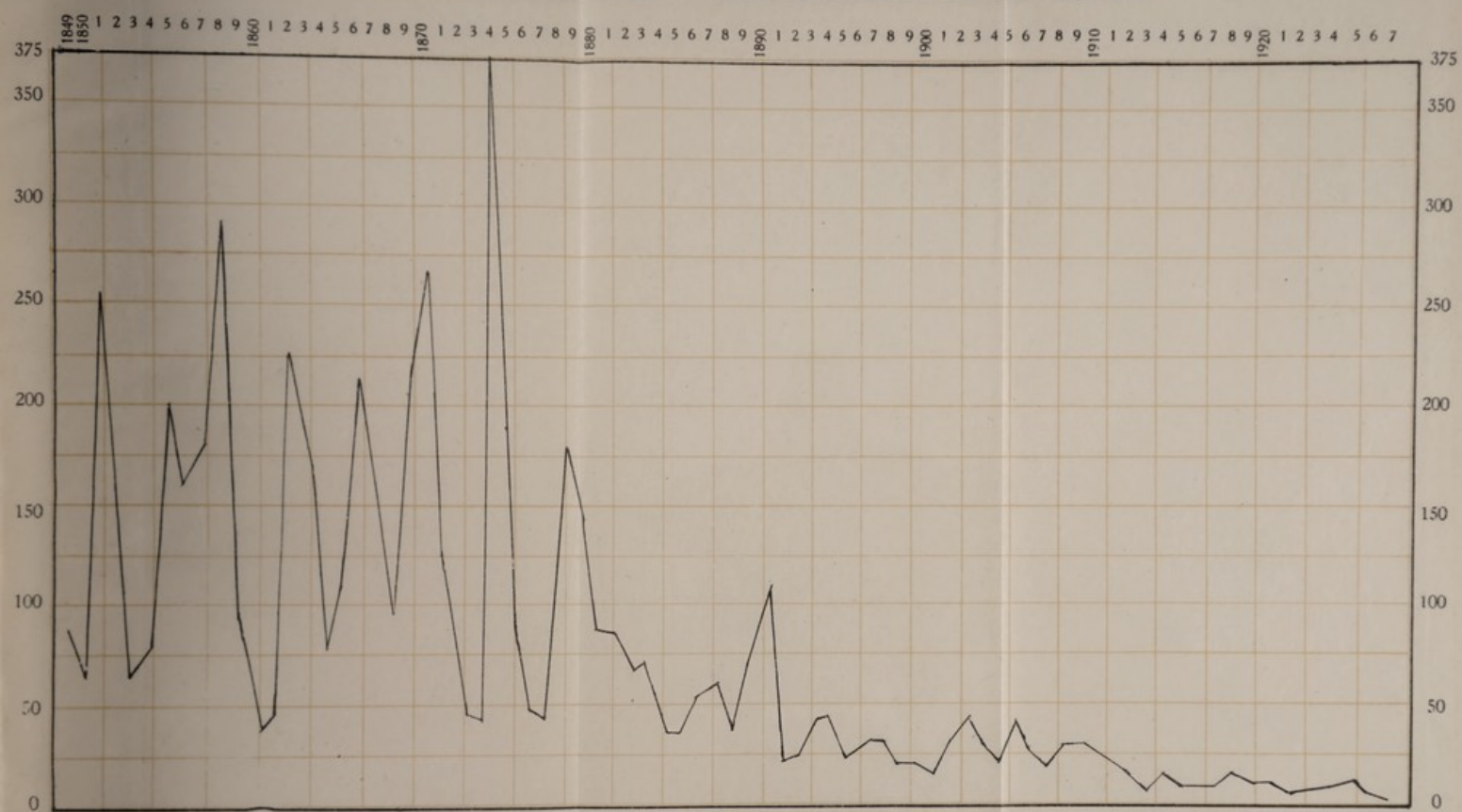


CITY OF LIVERPOOL

Scarlet Fever 1923



CITY OF LIVERPOOL. Scarlet Fever Death Rate per 100,000, 1849-1927.



CITY OF LIVERPOOL

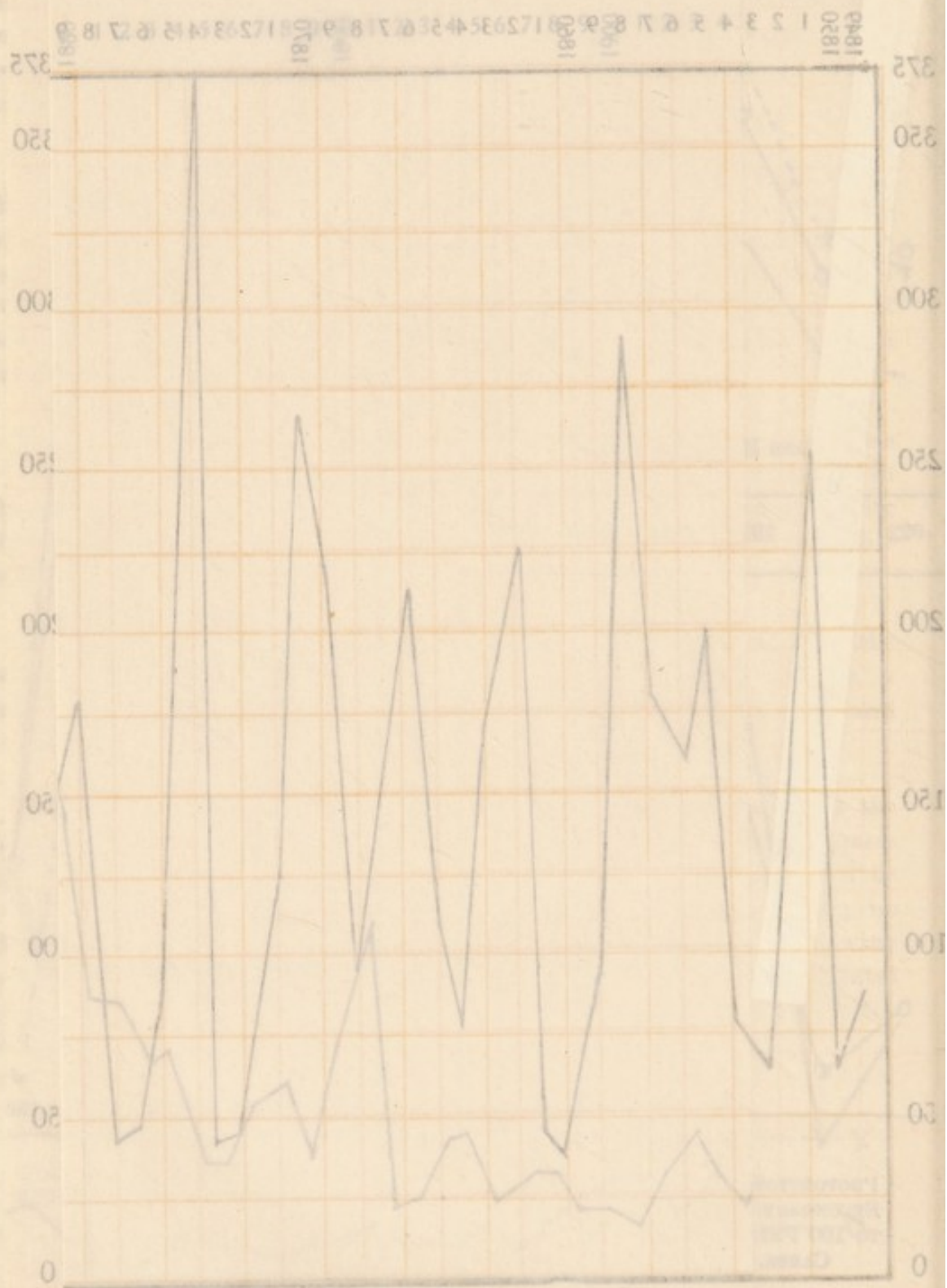


Table 2.

CITY OF LIVERPOOL.—SCARLET FEVER, 1923-1927.

Districts	Case Rates per 1,000 population.					Death Rates per 100,000 population.					Fatality Rates per 100 cases.				
	1923	1924	1925	1926	1927	1923	1924	1925	1926	1927	1923	1924	1925	1926	1927
Central (1-2)	1.65	3.2	3.53	2.3	0.95	3.1	8.4	14.6	3.8	1.56	1.9	2.6	4.1	1.6	1.7
Middle (3-7)	2.75	4.7	4.35	2.5	1.91	5.5	8.2	11.6	3.4	1.42	2.0	1.8	2.6	1.4	0.7
Outer (8-12)	3.28	5.3	4.31	3.2	2.45	6.0	5.3	7.6	0.9	1.26	1.7	1.0	1.8	0.3	0.5
Whole City	2.82	4.5	4.23	2.7	1.92	5.2	7.5	11.0	2.6	1.40	1.9	1.7	2.6	1.1	0.7

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.				
	1923	1924	1925	1926	1927	1923	1924	1925	1926	1927	1923	1924	1925	1926	1927
Central (1-2)	9.9	15.7	16.9	15.1	3.7	5.4	9.7	8.3	9.1	8.6	49.5	43.9	29.4	39.8	23.1
Middle (3-7)	10.8	14.4	16.9	10.0	10.2	5.0	5.0	5.7	6.0	5.9	28.9	29.4	27.0	34.5	28.5
Outer (8-12)	13.5	14.5	14.9	11.7	12.6	2.0	2.6	4.7	5.0	3.4	14.7	25.5	22.2	28.3	20.9
Whole City	13.3	16.4	18.0	13.7	12.3	4.1	4.9	5.8	6.2	5.2	26.2	29.8	26.1	32.1	25.4

Table No. 3.
SCARLET FEVER, 1927.

District.	Estimated Population, 1927.	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	82,422	63	2	0.76	2.4	3.2	3.3	9.3	23.8
2. Abercromby	45,482	54	...	1.18	...	0.0	4.3	7.4	22.2
3. Everton	126,234	212	...	1.68	...	0.0	8.6	11.8	30.2
4. Kirkdale	67,413	139	...	2.06	...	0.0	21.0	9.3	23.2
5. Edge Hill	91,506	138	2	1.51	2.18	1.5	7.0	4.3	23.9
6. Toxteth	110,182	176	3	1.60	2.72	1.7	4.6	5.1	21.0
7. Walton.....	95,482	275	2	2.89	2.10	0.7	10.6	3.6	21.4
8. West Derby East	95,081	242	3	2.55	3.16	1.2	12.2	2.5	21.4
9. Wavertree	93,247	268	...	2.87	...	0.0	17.1	4.5	18.6
10. Toxteth E. (Sefton Park)	31,269	30	...	0.96	...	0.0	16.3	...	16.6
11. Fazakerley	10,725	33	...	3.07	...	0.0	14.3	6.0	36.4
12. Woolton	7,223	10	...	1.38	...	0.0	8.7	...	30.0
Central Districts (1 to 2) ...	127,904	117	2	0.95	1.56	1.7	3.7	8.6	23.1
Middle Districts (3 to 7).....	490,817	940	7	1.91	1.42	0.7	10.2	5.9	28.5
Outer Districts (8 to 12) ...	237,545	583	3	2.45	1.26	0.5	12.6	3.4	20.9
Whole City	856,266	1,640	12	1.92	1.40	0.7	12.3	5.2	25.4

* Cases are those with onsets in 1927.

Table No. 4.
DEATHS FROM SCARLET FEVER.

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.		1927.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Exchange	1	...	...	...	1	...	...	...	2	2
Abercromby
Everton
Kirkdale
Edge Hill
Toxteth	1	...	...	...	...	...	1	...	2	2
Walton	1	1	...	...	1	...	2	1	3
West Derby	1	...	1	...	...	...	...	...	2	...	2
Wavertree	1	...	...	1	1	2	1	3
Toxteth East
Fazakerley
Woolton
City	1	2	2	2	...	1	2	2	6	6	12

AGES AT DEATH.

Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	60 and up- wards.	All Ages.
...	1	3	...	...	1	6	...	...	...	...	...	1	12

AGES OF NOTIFIED CASES.

20	49	119	146	177	687	218	124	70	17	10	2	1	1640
31.1%				41.9%			13.3%	13.7%					

PERCENTAGE FATALITY AT EACH AGE.

...	2.0	2.5	0.14	2.7	100	0.7
-----	-----	-----	-----	-----	------	-----	-----	-----	-----	-----	-----	-----	-----

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 1,398 cases discharged from hospital after suffering from scarlet fever, 25, or 1·8 per cent., were associated with recurrent infection in this way. In only three houses did more than one “return case” arise, namely, 2 cases in 2 instances, and 5 in 1 instance. 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, 3·3 in 1925, and 2·9 in 1926.

Table 5.

SCARLET FEVER, RETURN CASES.

	1927.		Average of past 8 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	1	0·6	7·2	2·7
February	3	2·4	6·6	2·8
March	3	2·7	5·7	2·8
April	1	1·1	5·2	2·7
May	6	7·0	7·1	3·6
June	1	0·9	4·1	2·3
July	5	4·3	5·9	2·9
August	1	1·2	3·5	2·0
September	1	0·8	2·7	1·3
October	1	1·2	3·7	2·2
November	1	0·7	5·1	1·9
December	3	1·8	8·2	2·6
WHOLE YEAR ...	25	1·8	6·5	2·5

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. 26), 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, 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. Of 48 children admitted in October, 19, or 39 per cent., were positive and were inoculated. In most cases three, but in some cases four, doses were given, the total amount of toxin received being about 6,500 skin-test doses. At an Industrial School, of 105 boys tested 16 (or 15 per cent.) were found to be susceptible and 4 were doubtful, whilst at a Preparatory School, of 47 boys of similar ages all but 4, i.e., 92 per cent., were susceptible.

MEASLES.

The number of deaths from measles has shown a tendency to decline of recent years. During 1927 there were 345 deaths, as against 296·3 the average of the past ten years. The mortality rate was 40·3 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, 10,606 cases came under the notice of the Medical Officer of Health, the sources of information being as follows:—

Notified by medical practitioners, 8,265.

Information from schools, etc., 2,341.

The proportion of deaths to cases, or fatality rate, was 3·2 per cent., a figure almost the same as the average of the past ten years, namely, 3·3 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.

	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.
Cases	9,230	9,268	3,983	11,448	9,143	3,570	11,089	5,709	11,202	8,694	10,668
Deaths	436	407	103	387	328	171	356	148	406	221	344
Case rate per 1,000 inhabitants	11.8	11.8	5.1	14.6	11.2	4.3	13.4	6.9	13.3	10.3	12.2
Death rate per 100,000 inhabitants	56	52	13	49	40	21	43	17.7	48.3	26.0	400
Fatality rate (percentage of deaths per 100 cases) ...	4.7	4.3	2.6	3.4	3.6	4.8	3.2	2.6	3.6	2.5	3.2

The experience of many years has shown that measles tends to recur in waves which follow each other at intervals of about 92 weeks, as is shown on the accompanying diagram. 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.

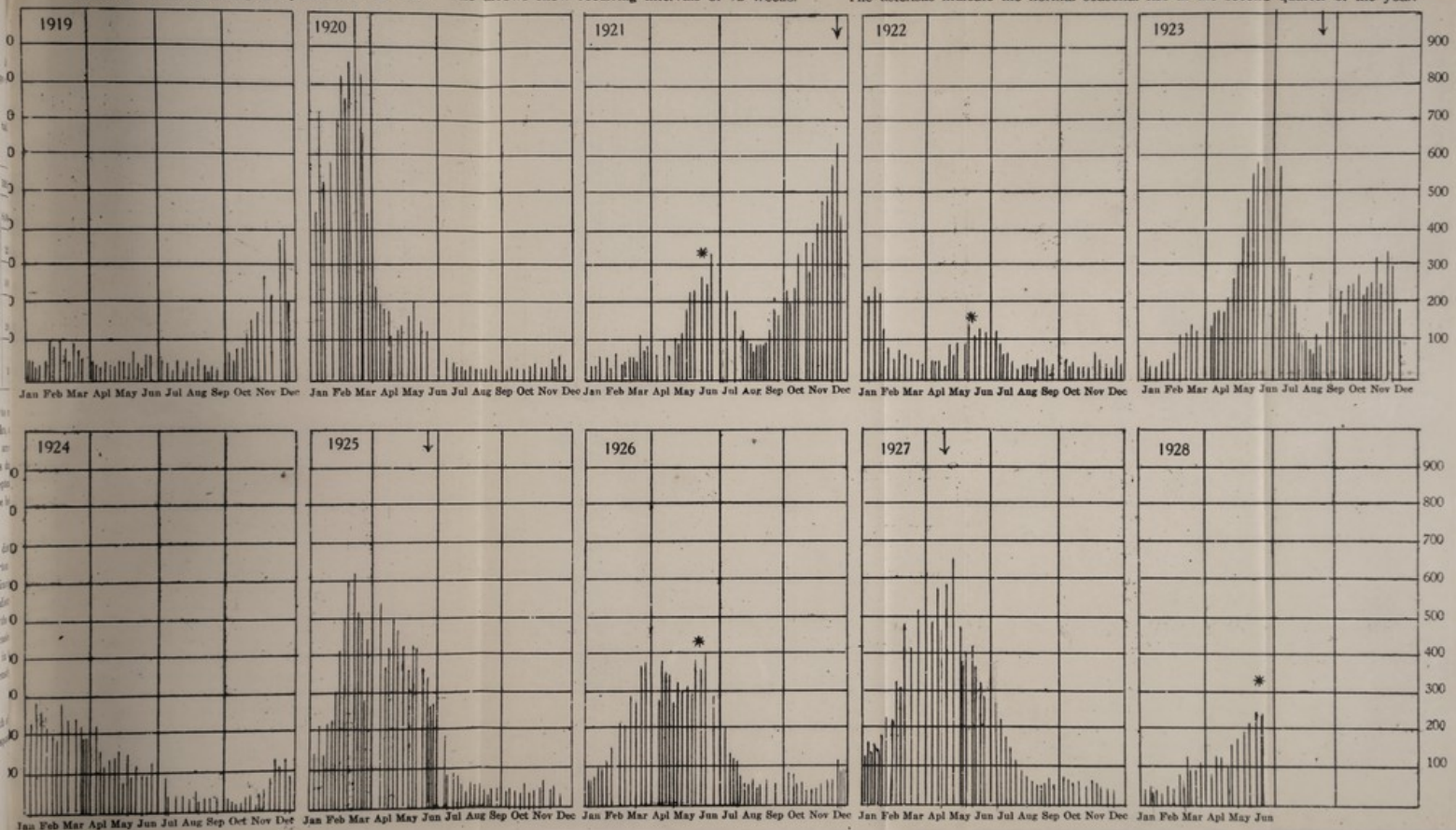
The second table shows the deaths from measles in the several districts of the city during the past six years. Exchange and Everton and Toxteth—the more central districts of the city—were principally affected, 215 out of the total of 345 deaths occurring in those districts. These districts also have a higher birth rate than the rest of the city, 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, as well as their greater density of population.

The third table gives the ages of attack and the ages at death of the 8,265 cases notified by doctors, and from these figures the corresponding

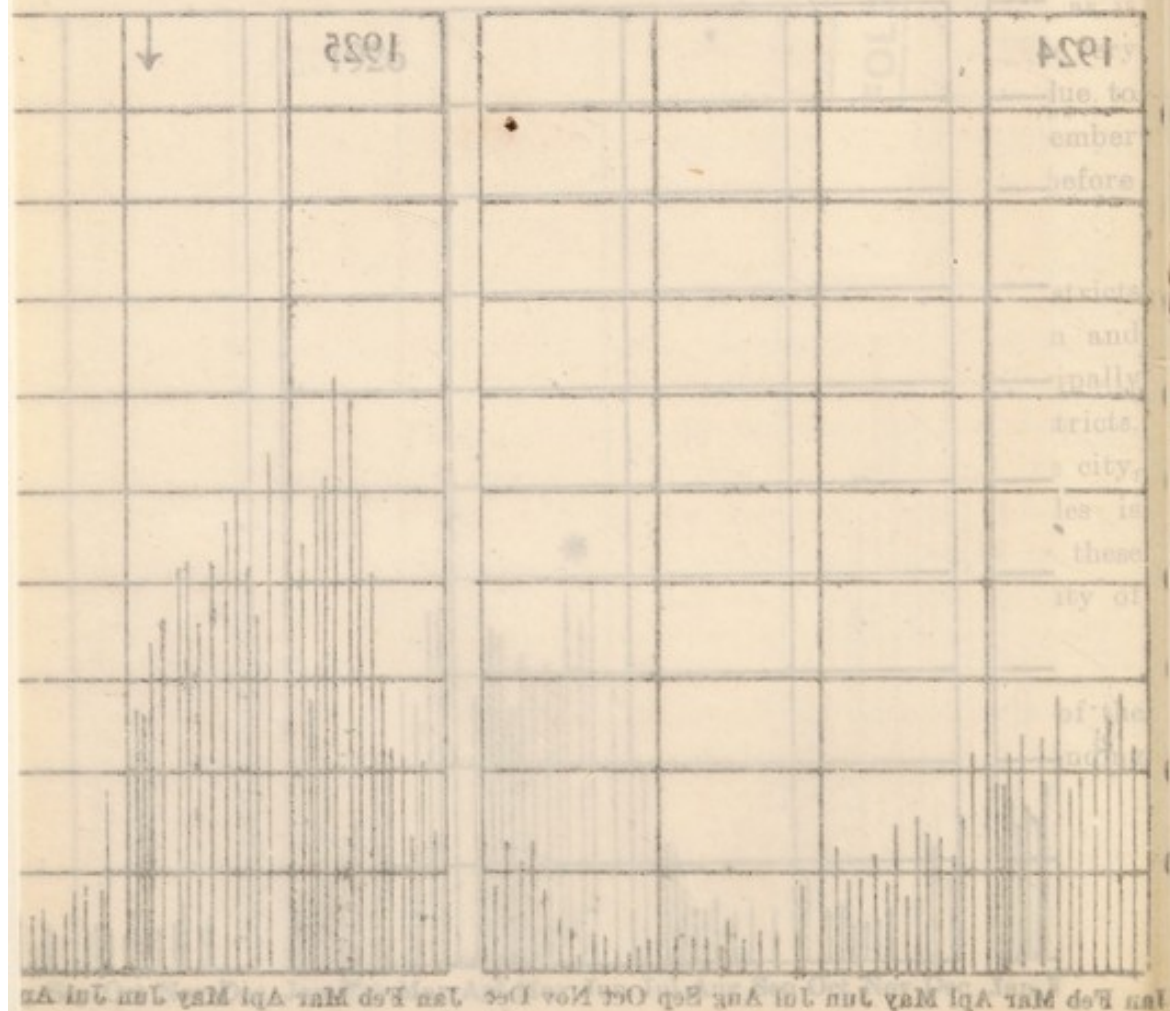
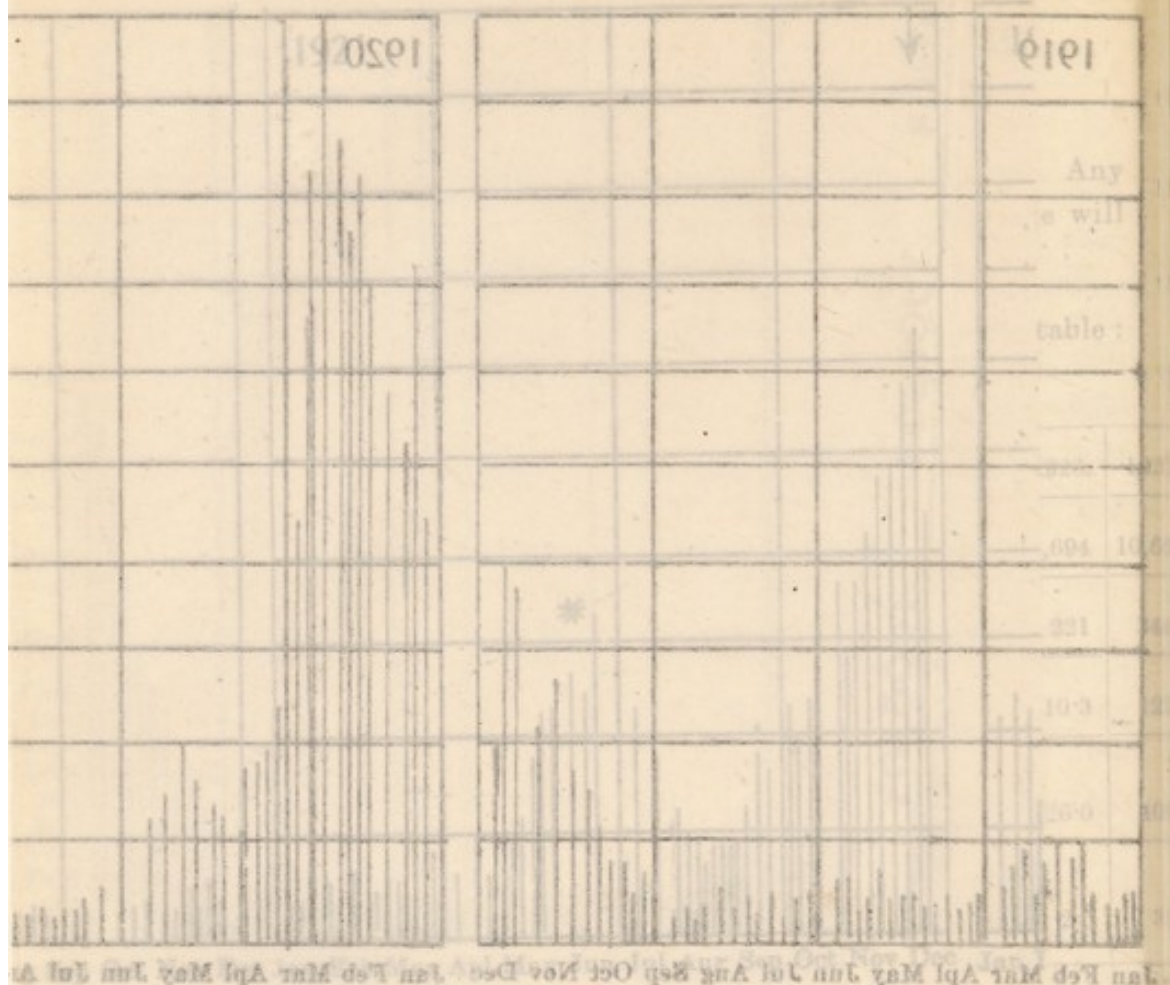
CITY OF LIVERPOOL.

Cases of Measles during the years 1919 to 1928. The arrows show recurring intervals of 92 weeks.

The asterisks indicate the normal seasonal rise in the second quarter of the year.



Cases of Measles during the years 1919 to 1928. The



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 1921-27 :—

Ages.	0	1	2	3	4	5	6	7	8	9	10-15
Cases ...	3268	6144	5480	5445	5079	7984	5120	1991	890	508	1094
								15,993			
Deaths ...	509	942	302	119	40			64			5
Fatality Rate (percentage of deaths to cases).	15.5	15.4	5.5	2.2	0.8			0.4			0.4

Thus in a total of 47,573 notified cases there occurred 1,981 deaths, or 4.16 per cent., a rate identical with that experienced in 1927.

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 1927 were as follows :—

New cases visited during year 1927...	...	8,227
Cases nursed	„ „ ...	1,012
Re-visits to cases	„ „ ...	8,917

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 1927, after distribution of the institutional deaths according to the place of residence:—

District.	1922.	1923.	1924.	1925.	1926.	1927.
Exchange ...	23	76	20	112	51	83
Abercromby ...	12	35	8	33	15	31
Everton ...	38	68	30	81	44	88
Kirkdale...	14	26	13	36	16	13
Edge Hill ...	22	29	12	28	29	30
Toxteth ...	40	60	32	54	29	44
Walton ...	6	19	10	17	13	14
West Derby ...	9	13	10	14	8	11
Wavertree ...	4	30	7	29	9	27
Sefton Park ...	2	...	3	1	6	4
Fazakerley ...	1	...	3	...	...	...
Woolton...	...	...	...	1	1	...
Total ...	171	356	148	406	221	345

Table 3.
DEATHS FROM MEASLES.

DISTRICTS	QUARTERS.								YEAR 1927.		
	March		June.		Sept.		Dec.		M.	F.	Total.
	M.	F.	M.	F.	M.	F.	M.	F.			
Exchange	27	13	23	13	5	2	...	...	55	28	83
Abercromby	10	8	4	6	...	1	2	...	16	15	31
Everton	28	14	23	15	6	1	1	...	58	30	88
Kirkdale	1	3	3	2	1	2	1	...	6	7	13
Edge Hill	3	5	10	7	2	1	1	1	16	14	30
Toxteth	3	7	13	17	1	...	1	2	18	26	44
Walton .....	...	2	5	4	1	2	...	...	6	8	14
West Derby	2	2	4	2	1	...	...	...	7	4	11
Wavertree	4	2	6	5	6	5	...	1	14	13	27
Toxteth East .....	...	...	2	2	...	...	...	...	2	2	4
Fazakerley .....	...	...	...	...	...	...	...	...	...	...	...
Woolton .....	...	...	...	...	...	...	...	...	...	...	...
City	76	56	93	73	23	14	6	4	198	147	345

AGES AT DEATH.													
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	60—	All Ages.
86	177	49	17	5	10	1	...	...	...	...	...	...	345

AGES OF NOTIFIED CASES.										
636	1190	1065	1017	895	3111	202	149			8265

PERCENTAGE FATALITY AT EACH AGE.										
13·5	14·9	4·6	1·6	0·5	0·3	0·5	...			4·17

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

Table 4.

MEASLES DURING THE YEAR 1927

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	...	636	86	135·2
1—2	...	1190	177	148·7
2—3	...	1065	49	46·0
3—4	...	1017	17	16·7
4—5	...	895	5	5·6
5—6	1222	1412	} 10	3·2
6—7	1190	1039		
7—8	1420	460		
8—9	597	121		
9—10	202	79	} 1	4·9
10—11	112	65		
11—12	78	47		
12—13	64	43		
13—14	53	27	} ...	...
14—15	51	20		
15 upwards	167	149	...	...
	5,156	8,265	345	41·7

WHOOPIING COUGH.

The number of cases coming to the notice of the medical officer during 1927 was 1,988, and the number of deaths 125, corresponding to a death-rate of 14·6 per 100,000 inhabitants, which is the lowest recorded except that of 1919. The average death rates from whooping cough during the past 78 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
1920-24	...	...	...	...	...	...	23·0
1925	...	...	...	...	...	...	27·0
1926	...	...	...	...	...	...	22·1
1927	...	...	...	...	...	...	14·6

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.	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Cases ...	4244	788	2804	3019	2025	2261	2321	2274	1971	1988
Deaths ...	364	53	228	210	182	156	169	227	188	125
Death rate per 100,000 of the population ...	46	7	29	26	22	19	20	27	22	15
Fatality rate (Percentage of deathstocases)	8·6	6·7	8·1	8·1	9·0	7·9	7·3	9·9	9·5	6·3

Unfortunately the figures for 1928 are not so satisfactory, the number of deaths recorded in the first six months having been 212.

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.

Twenty-five cases of cerebro-spinal fever occurred during 1927, of which 21 (or 84 per cent.) proved fatal, making a death rate of 2·4 per 100,000 of the population. The cases during the years 1916 to 1927 were 37, 34, 17, 26, 27, 26, 18, 8, 13, 15 and 16, respectively.

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

In two cases admitted as cerebro-spinal meningitis the organisms found were not those of cerebro-spinal fever, but of tuberculous meningitis, and in one pneumococcal; in four other cases the disease was found to be encephalitis lethargica; in a further two cases rickets and dementia præcox, 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 1927 encephalitis lethargica was still prevalent in Liverpool. After excluding 14 duplicate notifications, 102 notifications of cases of encephalitis lethargica were received; 33 of these were found, mostly after admission to hospital, to be suffering from other diseases namely:—

Tuberculous meningitis	5 cases.
Other diseases, namely, influenza 2, cerebro-spinal fever 1, pulmonary tuberculosis 1, measles 1, otitis media 1, senile paralysis 1, others 21 ...	28 ..

There are left, therefore, 69 cases which remained in the records as cases of encephalitis lethargica. There were 25 deaths certified as from encephalitis lethargica; of these 9 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 1927 was therefore 16. The fatality rate per 100 cases is 36·2 for 1927. During the period

1918-1927 there have been notified 572 cases, of which 168, or 29·4 per cent., have sooner or later proved fatal. The incidence and mortality during this period are shown in the following table:—

Table 1.
CITY OF LIVERPOOL.
ENCEPHALITIS LETHARGICA, 1927.

	1918-19	1920	1921	1922	1923	1924	1925	1926	1927
Cases	3	17	27	5	111	189	108	114	69
Rate per 1,000 population ...	...	0·02	0·03	0·01	0·13	0·22	0·13	0·13	0·08
Deaths... ..	1	2	6	3	36	22	44	29*	25†
Rate per 100,000 population	...	0·20	0·73	0·36	4·30	2·40	5·22	3·4	2·92
Fatality per 100 cases ...	...	12	22·2	40	32·4	10·6	40·5	25·5*	36·2†

* 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.

† This number and rate includes the deaths of 9 persons who were either notified in earlier years or were transferred from outside districts. If these deaths are excluded the fatality rate becomes 23 per cent.

In the following table the incidence upon the several districts of the city and the rate per 1,000 inhabitants for the years 1924 to 1927 is given; for the year 1927 the 28 chronic cases reported have been excluded, as was done in 1926:—

Table 2.

District	1924		1925		1926		1927	
	Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Acute rate per 100,000	Cases	Acute rate per 100,000
Sefton Park ...	15	42·2	...	6	17·8	...	2	5·9
Everton ...	47	36·2	...	15	11·6	...	10	7·6
Wavertree ...	15	32·5	...	7	14·9	...	7	14·9
Fazakerley ...	2	31·7	...	1	15·1	...	1	14·8
Toxteth ...	25	23·3	...	14	12·6	...	14	12·6
Edge Hill ...	21	22·0	...	15	16·5	...	8	8·7
Woolton ...	2	33·4	...	—	—	...	1	16·2
Garston ...	6	20·0	...	5	16·1	...	3	8·8
Scotland ...	9	19·1	...	6	13·3	...	5	10·9
Kirkdale ...	10	15·2	...	8	10·9	...	6	8·1
Exchange ...	5	13·8	...	3	8·3	...	4	11·1
Abercromby ...	5	10·6	...	7	14·9	...	8	16·6
Walton ...	9	10·4	...	13	14·9	...	5	5·7
West Derby East	8	9·9	...	6	6·9	...	3	3·4
Other diseases ...	5	—	...	—	—	...	—	—
Imported cases, etc.	5	—	...	2	—	...	—	—
Whole City ...	189	22·1	...	108	12·8	...	77	9·0
	...	...	...	...	...	...	41	4·8

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

	Total 1922	Total 1923	1924 Reported in				Total	1925 Reported in			Total	1926 Reported in		Total	1927	Grand Total
			1924	1925	1926	1927		1925	1926	1927		1926	1927			
January ...	—	48	4	1	—	—	5	12	2	—	14	8	—	8	4	
February ...	1	25	6	—	1	—	7	8	—	—	8	5	1	6	4	
March ...	1	8	28	1	—	—	29	10	3	—	13	8	2	10	2	
April ...	—	5	34	3	2	—	39	7	—	—	7	8	—	8	2	
May ...	—	5	23	1	2	—	31	8	—	—	8	4	—	4	5	
June ...	—	5	18	1	—	—	19	4	—	1	5	5	1	6	4	
July ...	2	—	9	—	—	—	9	4	2	—	6	3	—	3	—	
August ...	1	1	11	—	—	—	11	4	—	—	4	1	—	1	1	
September ...	—	—	8	2	1	—	11	—	1	—	1	5	—	5	1	
October ...	1	4	9	2	—	1	12	4	2	—	6	4	—	4	5	
November ...	1	7	8	1	—	—	9	—	3	—	3	2	1	3	3	
December ...	7	9	7	8	—	—	15	1	3	1	5	4	3	7	4	
TOTAL ...	14	117	170	20	6	1	197	62	16	2	80	57	8	65	35	
Indef. reported in 1925	2	3					3				1			—	—	
Ditto 1926	1	3					7				2			4	—	
Ditto 1927	4	1					3				1			2	3	
TOTAL ...	21	124					210				84			71	38	

The greatest number of acute cases occurred between 50 and 60 years of age and under 10 years. The greatest number of chronic cases were between 20 and 30 years of age.

Table 4.
AGES OF CASES AND DEATHS, 1927.

Age.	0-4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	Total
Acute Cases ...	3	7	2	4	5	4	3	11	2	—	—	
Chronic Cases...	1	1	3	3	10	3	2	3	2	—	—	
TOTAL ...	4	8	5	7	15	7	5	14	4	—	—	
Deaths*	1	1	1	2	0	1	0	9	1	—	—	
Fatality per cent. }	25	12	20	28	—	14	—	64	25	—	—	

* Five deaths occurring in 1927 among persons notified in 1923 to 1926 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 30 years of age.

Forty of the cases were males and twenty-nine 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 69 cases reported in 1927, 28 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. 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.

L.H., 17 years, a nursemaid, living at 21, S— Road, was taken ill on May 2nd with a slight attack. She returned to work on about May 20th. On May 25th, F.M., 4 years, living at 6, U— Road, in the near vicinity, was taken ill. Later E.D., of 6, S— Road, was taken ill and died on September 9th.

II.—ASSOCIATION WITH CHRONIC CASES.

Group 1.—T.C., 41 years, living at 29, P— H—, was taken ill in 1923, and became a chronic case. The son, J.F.C., 13 years, was taken ill in March, 1926, and after an apparent recovery from a slight attack, subsequently became a chronic case.

Group 2.—W. A. W., of 23, N— Street, when 8 years of age had an attack, which subsequently developed into a chronic course. He became much worse during 1927, and was notified in June. Early in June M.C., 5 years, was taken ill with encephalitis; she lived at 43, N— Street.

Thus in four instances, or about six per cent. of the total, it was possible to trace association with a preceding case. From enquiries made in the past five years such an association was found in 68 out of 527 cases, or 13 per cent. of the whole. There can be no doubt of the infectivity of the disease.

ACUTE ANTERIOR POLIOMYELITIS (INFANTILE PARALYSIS).

During 1927 15 cases of poliomyelitis were notified, two of which, or 13 per cent., proved fatal. In 1926 19 cases were reported, whilst 37, 5, 9, 4, 6, 2, 6, 6, 11, 39, 14 and 4 cases were reported in the years 1914 to 1925. The cases during 1927 were reported as follows:—January, 2 cases; September, 1 case; October, 3 cases; November, 4 cases; December, 5 cases. In September a case was reported in the person of a child who had been at Withernsea, near Hull, and who was affected with paralysis whilst staying there. Prior to the occurrence of this case there had been no cases reported for a period of seven months. Poliomyelitis was prevalent in Hull, where over 100 cases occurred between July and December, the infection having been probably derived from the Continent, where considerable outbreaks occurred.

INFLUENZA AND OTHER RESPIRATORY DISEASES.

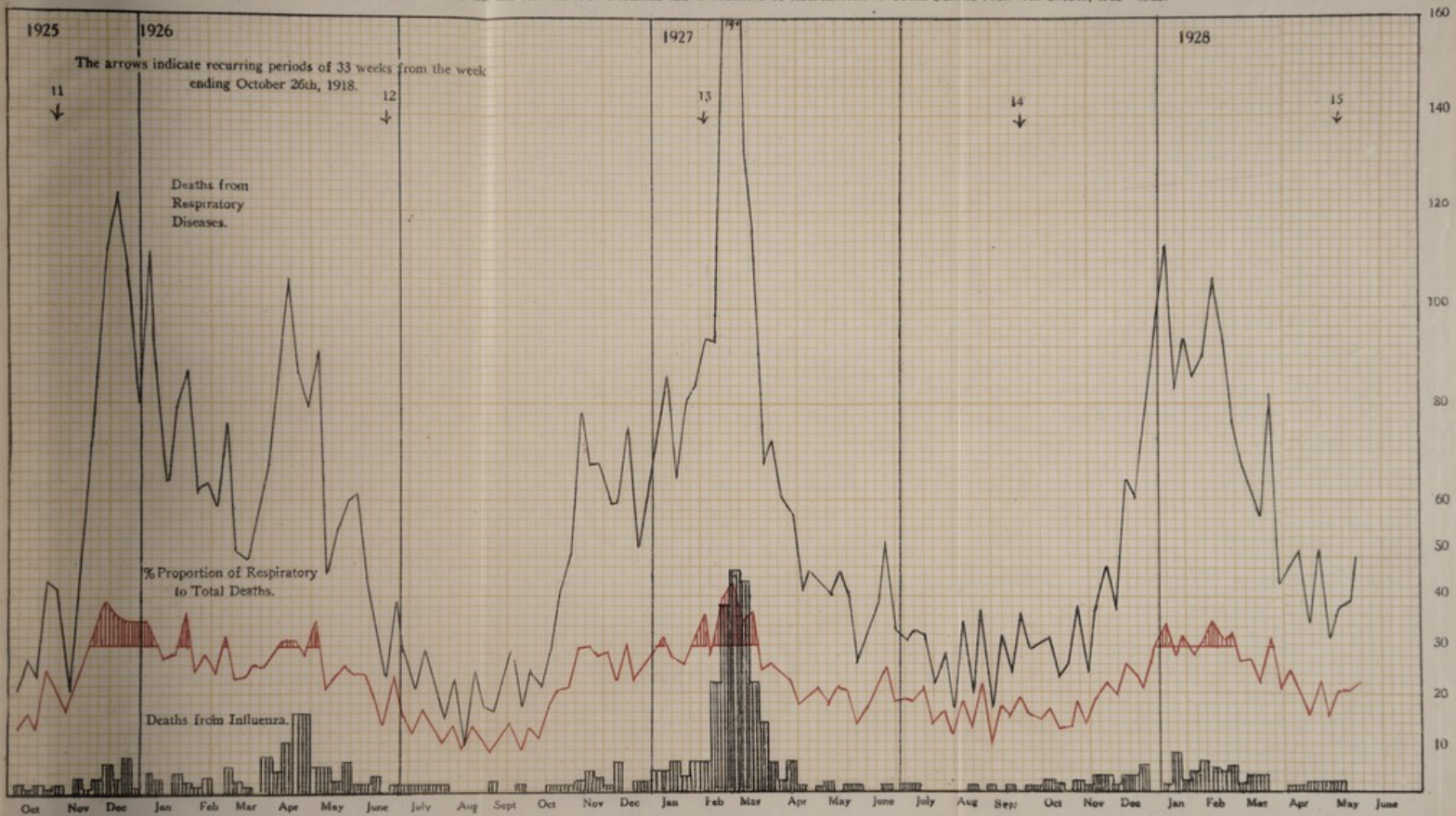
Respiratory diseases cause an increasing proportion of the total deaths from all causes. In the decennial period 1871-80 the proportion of deaths certified as due to respiratory diseases was 20·2 per cent. of all deaths; in 1927, 26 per cent. of all deaths were respiratory; the variations correspond 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
1921-25 ...	15,075	25·8	3·64	63·8
1926 ...	2,809	24·1	3·30	57·7
1927 ...	3,083	26·0	3·60	63·1

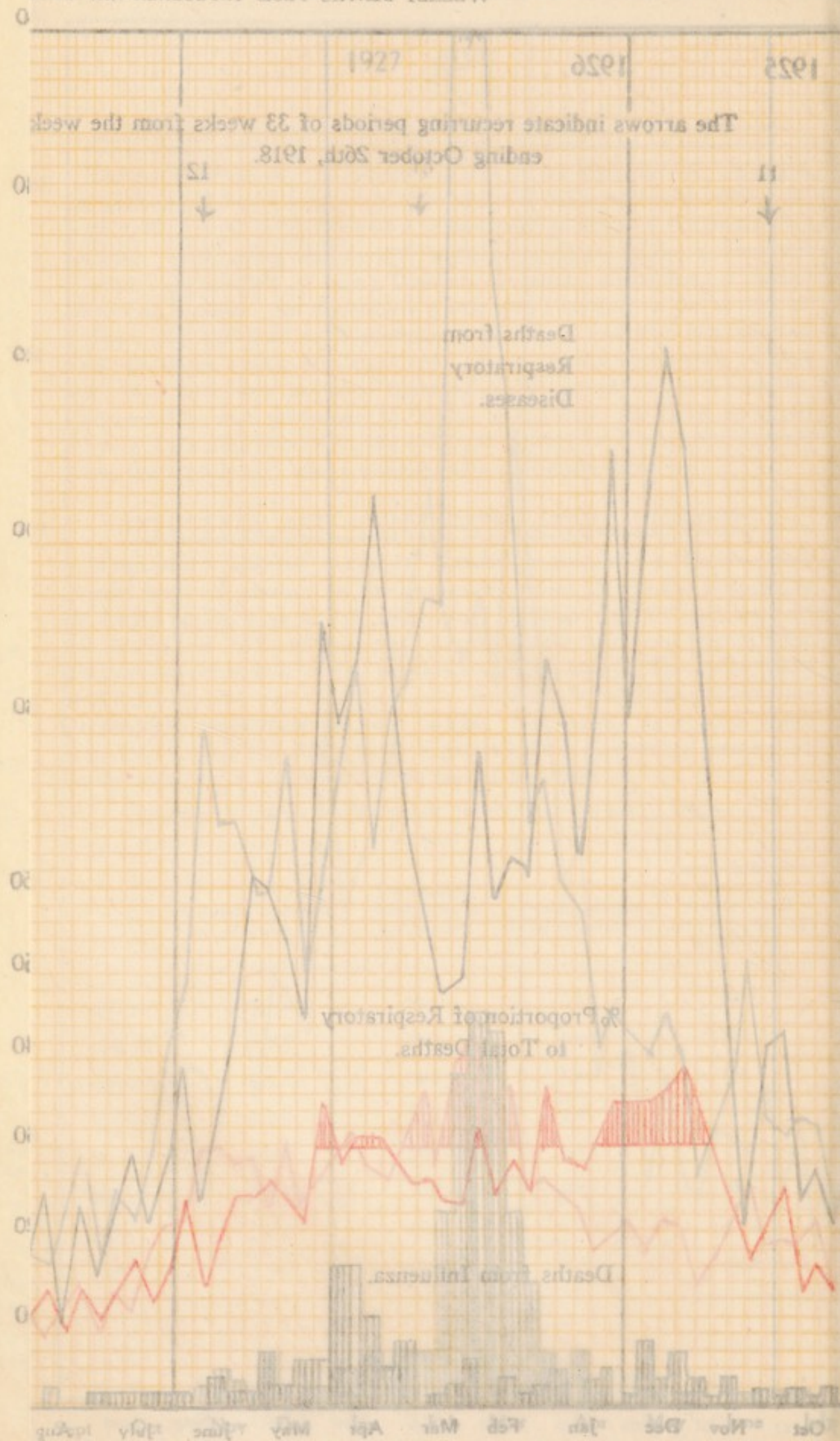
CITY OF LIVERPOOL

WEEKLY DEATHS FROM INFLUENZA AND FROM ALL RESPIRATORY DISEASES AND PROPORTION OF RESPIRATORY TO TOTAL DEATHS FROM ALL CAUSES, 1925-1928.



CITY OF LIVERPOOL

WEEKLY DEATHS FROM INFLUENZA AND OTHER RESPIRATORY DISEASES TO TOTAL DEATHS



The rate per 1,000 population had therefore declined in 1927 to 63·1 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.

The experience of earlier years has shown that epidemics of influenza recur at intervals of 33 weeks, or multiples of this period; the most severe outbreaks are those which occur in the winter months, namely, from January to March. Reference to the attached graph will show that one was anticipated about the first week in February.

Toward the end of 1926 evidence of the approach of a further periodic wave began to appear. Cases of pneumonia, with onset by 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 total number of deaths ascribed to influenza was 263, of which 218 occurred in the first quarter of the year.

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.

1927. 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.		
JANUARY 1	15	—	—	—	3	3	—
8	268	16.3	4	45	33	85	31.77
15	233	14.2	6	38	23	64	27.44
22	262	15.9	3	42	31	79	26.44
29	271	16.5	6	44	36	83	30.63
FEBRUARY 5	252	15.3	6	45	42	93	36.77
12	317	19.3	23	51	36	91	28.00
19	439	26.7	38	106	64	175	40.00
26	443	27.0	45	108	80	193	43.68
MARCH 5	378	23.0	43	87	42	131	34.63
12	306	18.6	22	65	47	115	37.63
19	273	16.6	14	32	33	67	24.55
26	271	16.5	6	39	33	72	26.68
APRIL 2	247	15.0	2	38	22	61	24.77
	3,975	18.7	218	740	525	1312	37.68
APRIL 9	241	14.7	6	35	20	57	23.60
16	222	13.5	1	24	15	41	18.00
23	224	13.6	—	31	10	45	20.11
30	198	12.1	1	25	15	43	21.77
MAY 7	216	13.2	2	25	12	40	18.55
14	206	12.5	—	30	14	45	21.88
21	188	11.4	1	22	16	40	21.33
28	181	11.0	1	12	12	26	14.33
JUNE 4	185	11.3	—	23	8	32	17.22
11	178	10.8	—	19	15	36	20.80
18	197	12.0	1	31	18	51	25.90
25	179	10.9	—	21	10	33	18.48
JULY 2	162	9.9	1	11	13	31	19.10
	2,577	12.4	14	309	178	520	20.20
JULY 9	177	10.8	1	13	17	33	18.60
16	153	9.3	—	22	7	32	20.90
23	145	8.8	—	10	9	22	14.53
30	165	10.0	—	15	11	28	16.90
AUGUST 6	143	8.7	—	14	4	18	11.88
13	188	11.4	—	21	8	35	18.18
20	153	9.3	1	13	7	20	13.12
27	167	10.2	—	14	18	37	22.22
SEPTEMBER 3	172	10.5	1	8	6	17	9.90
10	171	10.4	—	14	16	32	18.18
17	152	9.3	1	12	10	24	15.77
24	181	11.0	—	24	8	35	19.90
OCTOBER 1	177	10.8	1	9	18	29	16.40
	2,144	10.0	5	189	139	362	16.90

1927. 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.		
OCTOBER 8	194	11.8	1	18	11	30	15.5
15	175	10.7	2	19	9	31	17.7
22	170	10.3	1	13	9	23	13.5
29	190	11.6	—	20	4	26	13.7
NOVEMBER 5	200	12.2	2	22	13	38	19.0
12	171	10.4	1	14	7	24	14.9
19	187	11.4	3	16	19	37	19.8
26	202	12.3	3	21	19	46	22.7
DECEMBER 3	185	11.3	1	17	17	37	20.0
10	235	14.3	3	34	26	64	27.2
17	236	14.4	3	29	26	60	25.4
24	308	18.8	5	35	37	78	22.1
31	319	19.4	1	42	43	94	29.5
	2,772	13.0	26	300	240	588	21.2
For the whole year	11,468	13.4	263	1,538	1,082	2,782	24.3

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 1926 and 1927 :—

	1926.		1927.	
	Cases.	Deaths.	Cases.	Deaths.
Acute Pneumonia	2,200	1,476	2,394	1,560
Malaria	56	4	64	3
Trench Fever	—	—	—	—
Dysentery	8	5	8	6
	2,264	1,485	2,466	1,569

Enquiry was made into all these cases; 2,016 cases of influenzal pneumonia were visited and 28 received assistance from nurses appointed for the purposes, 117 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 1927 eight cases of dysentery were reported in the city in addition to 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. Six 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 57 years :—

TABLE I.

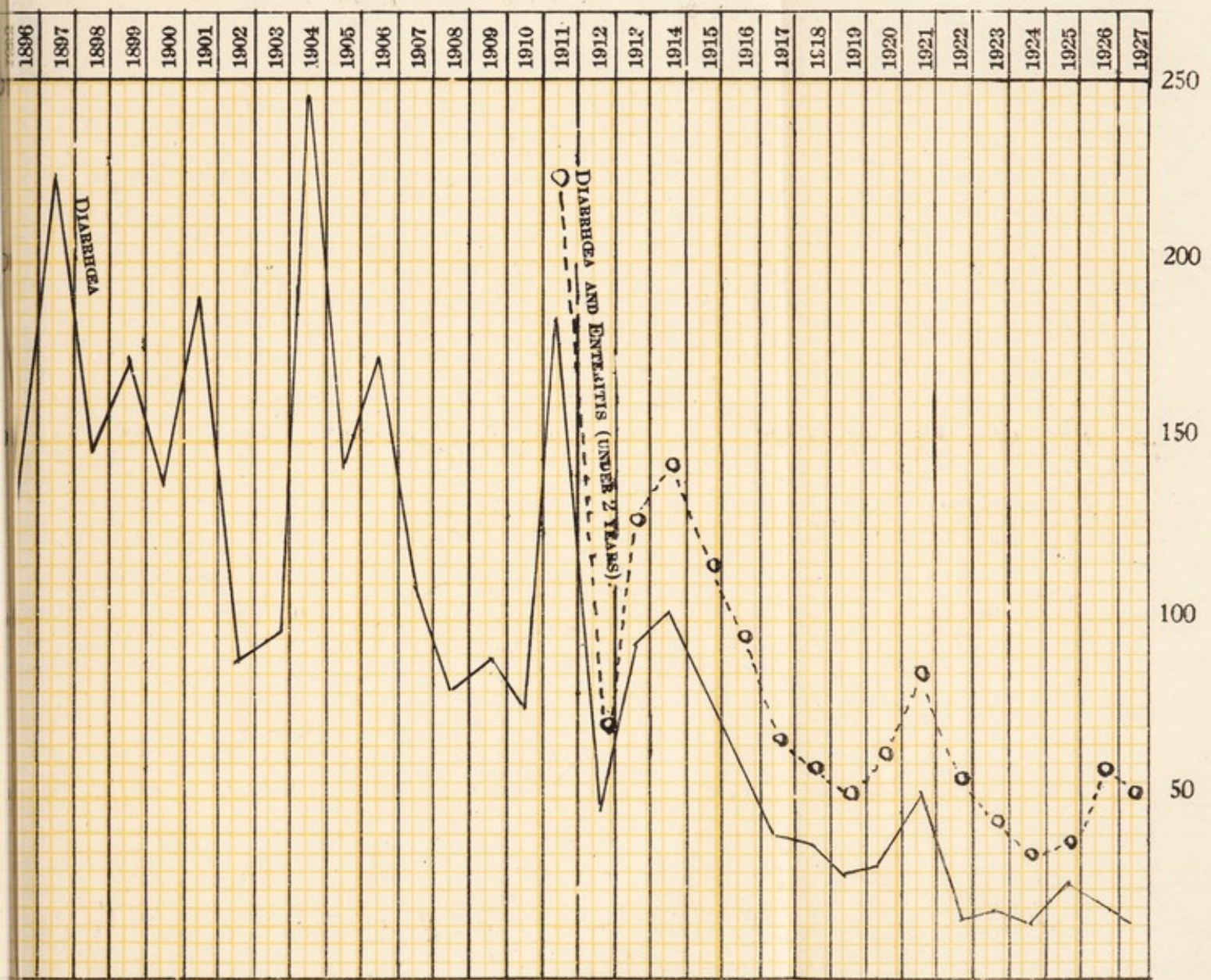
	Actual Deaths.	Deaths expressed as a percentage of deaths from all causes.	Death-rate per 1,000 population.	Death-rates as a percentage of the 1871-1880 rate.
1871-1880	14,747	10·0	2·8	100·0
1881-1890	13,186	9·4	2·4	85·7
1891-1900	18,491	12·7	3·0	107·2
1900-1910	18,163	12·0	2·5	89·3
1911-1920	12,282	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
1927	1,146	9·6	1·34	47·9

CITY OF LIVERPOOL.

DIARRHŒA DEATH RATES (ALL AGES), PER 100,000 POPULATION, 1896-1927

TOGETHER WITH THE COMBINED RATE FROM DIARRHŒA

AND ENTERITIS (UNDER 2 YEARS), FOR 1911-1927.

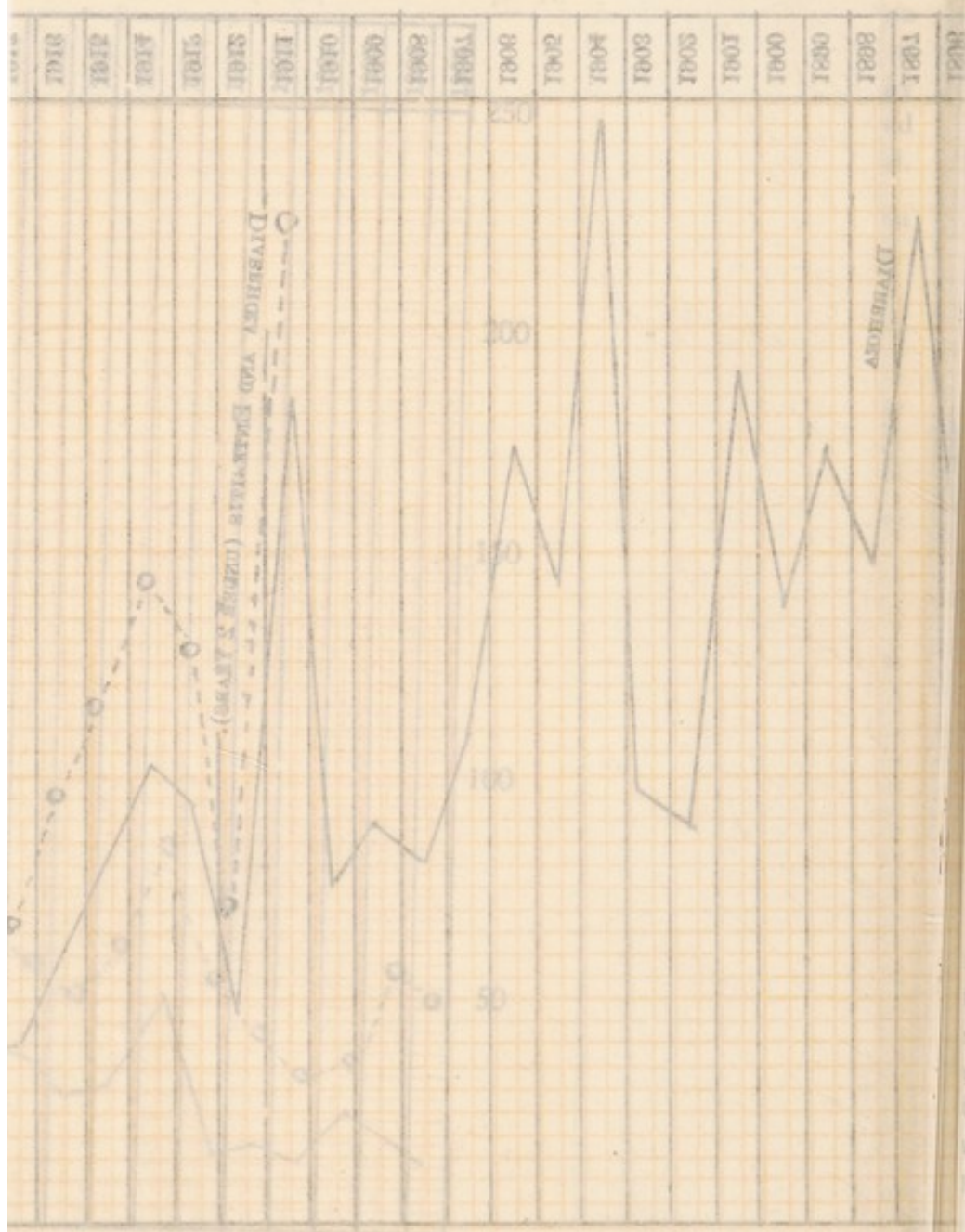


CITY OF LIVERPOOL

DIARRHOEA DEATH RATES (ALL AGES) PER 100,000

TOGETHER WITH THE COMBINED RATE FROM

AND ENTERITIS (UNDER 5 YEARS) FOR 1901



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 a large 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 57 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	18.8	3.6	6.5
1927 ...	283	67	14	33	397	71.3	16.9	3.5	8.3

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. 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 deaths at different ages returned to the normal pre-war distribution. In 1927 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 similarly favourable to the development of the disease it will be seen that the mortality has been very much reduced. In 1927, the climatic conditions were less favourable to the spread of diarrhoea, and the mortality from diarrhoea and enteritis at all ages amounted to 397, of which number 350 were under two years of age, equal to a rate of 53 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 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; in 1927 the maximum number of deaths was reported on the 38th and 42nd weeks. 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 17, the greatest number in any week during 1927, i.e., almost exactly one-fifteenth of the number recorded 25 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 9·9. The mortality in the several districts of the city is shown in the subjoined table:—

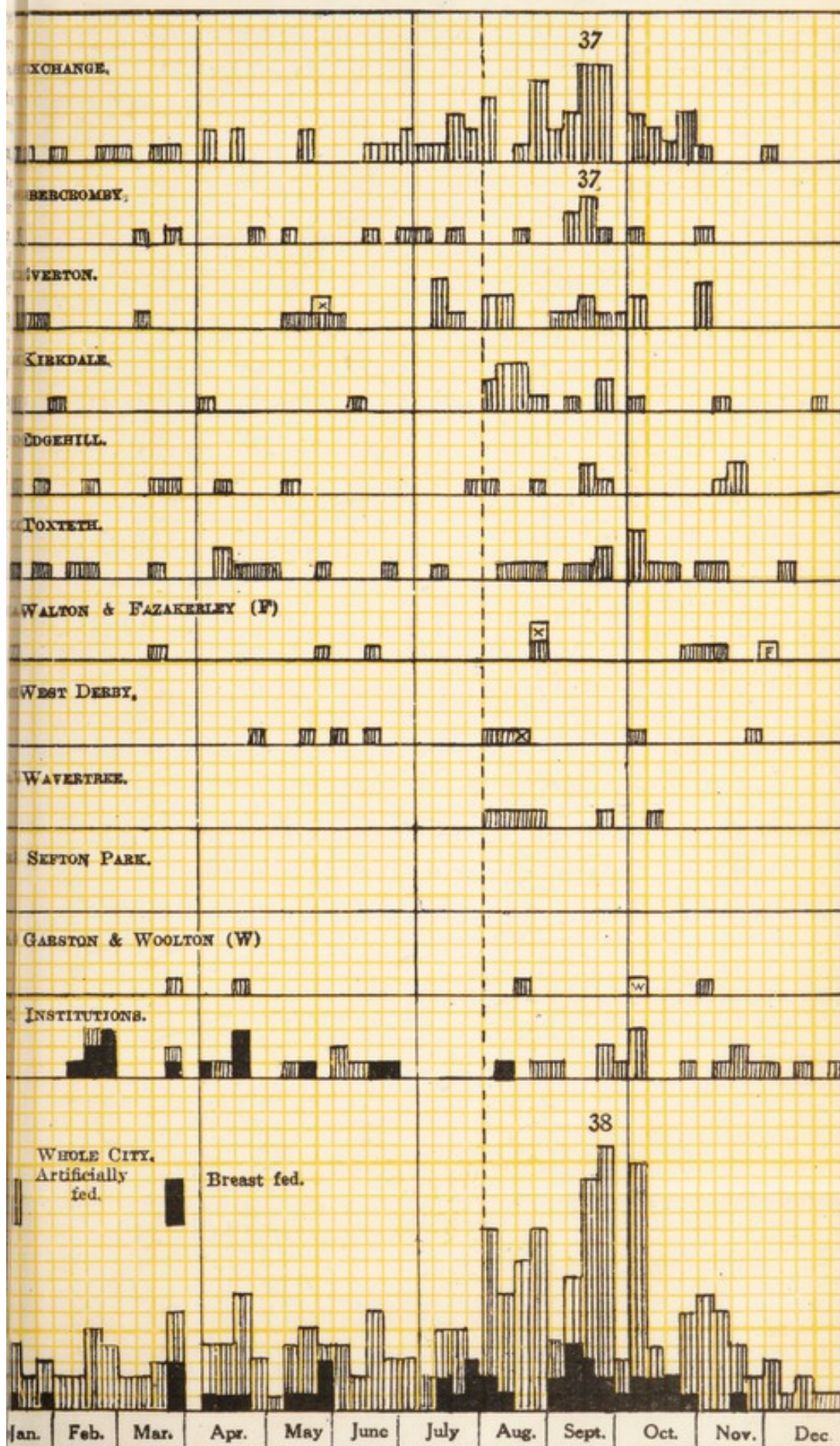
TABLE III.

	Registered Births 1926-27.	Deaths. 1927.	Death Rate per 1000 births registered during the current and preceding years.	
			1927.	1926.
Exchange ...	5,483	98	17·7	29·4
Abercromby ...	2,122	25	4·8	12·7
Everton ...	6,621	72	10·9	13·4
Kirkdale ...	3,254	36	11·1	13·4
Edge Hill ...	4,024	22	5·5	9·9
Toxteth ...	5,441	41	7·4	9·9
Walton ...	2,987	19	6·4	14·0
West Derby ...	3,919	17	4·3	6·0
Wavertree ...	3,352	14	4·1	6·4
Sefton Park ...	989	2	2·0	2·1
Fazakerley ...	386	2	5·0	9·1
Woolton ...	234	2	6·3	30·9
	38,812	350	9·9	13·3

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

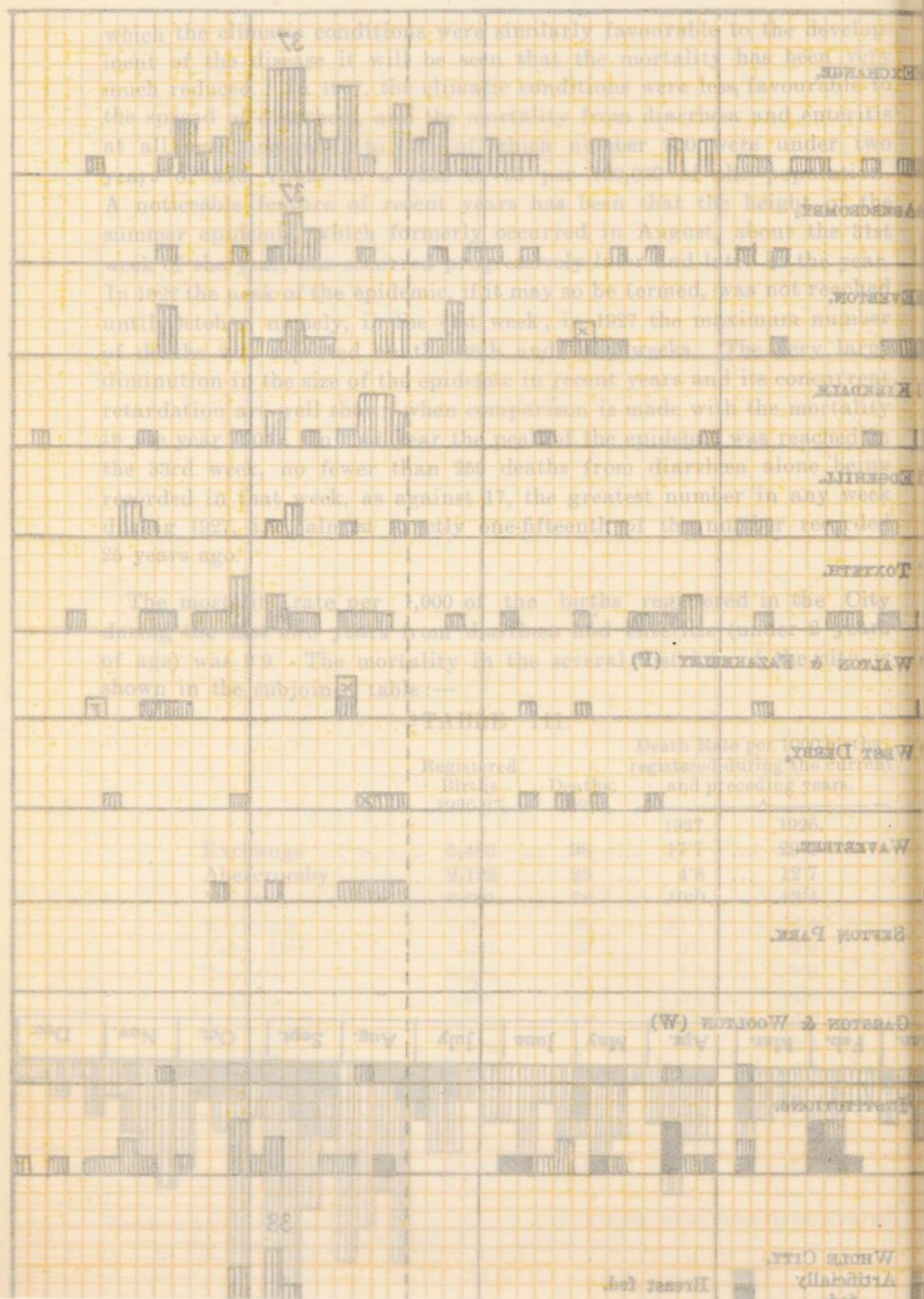
CITY OF LIVERPOOL.

FATAL CASES OF DIARRHŒA AND ENTERITIS (UNDER 2 YEARS OF AGE) ARRANGED BY DISTRICTS AND INSTITUTIONS AND BY WEEK OF ONSET DURING 1927.



CITY OF LIVERPOOL.

FATAL CASES OF DIARRHOEA AND ENTERITIS (UNDER 5 YEARS OF AGE) ARRANGED BY DISTRICTS AND INSTITUTIONS AND BY WEEK OF ONSET DURING 1927.



The corresponding rates for the whole city during the last five years were 6·2, 8·6, 7·7, 10·3 and 13·3 per 1,000 births registered in the preceding two years.

Of the 350 deaths under 2 years of age, the majority, namely, 190, took place in public institutions, as shown in the following table:—

TABLE IV.

DEATHS FROM DIARRHOEA AND ENTERITIS IN INSTITUTIONS DURING 1927.

Alder Hey Hospital	...	...	...	107
Brownlow Hill Institution	...	...	...	16
Royal Liverpool Children's Hospital	...	...	...	21
Walton Institution	...	...	...	18
Mill Road Institution	...	...	...	4
Toxteth Institution	...	...	...	9
David Lewis Northern Hospital	...	...	...	6
Fazakerley Hospital	...	...	...	2
Grafton Street Hospital	...	...	...	1
Royal Southern Hospital	...	...	...	4
Belmont Road Institution	...	...	...	2
				<hr/> 190 <hr/>

SPECIAL INVESTIGATION DURING 1926-1927.

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 from diarrhoea 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 the investigation has been repeated in 1927; these reports, 348 in number, have again 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 21 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 348 deaths.

In Table V 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 44 deaths (12·6 per cent.) occurred in the first quarter, 74 deaths (21·3 per cent.) in the second, 112 deaths (32·2 per cent.) in the third, and 118 deaths (33·9 per cent.) in the fourth quarter. When comparison is made with 1926 the saving of life effected is entirely in the third and fourth quarters.

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 45 cases (44 in 1926) 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, again 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.

(A) 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.	Total.
January	3	3	4	...	...	2	2	2	...	...	1	...	...	17
February	3	...	3	2	1	3	...	...	...	...	...	...	6	18
March	2	1	1	...	2	1	...	...	...	...	...	...	2	9
1st Quarter...	8	4	8	2	3	6	2	2	...	...	1	...	8	44
April	8	2	...	1	2	6	1	2	...	...	2	...	5	29
May	6	2	4	1	1	2	...	1	...	...	1	...	1	19
June	3	1	3	2	2	3	2	1	...	...	...	...	9	26
2nd Quarter...	17	5	7	4	5	11	3	4	...	...	3	0	15	74
July	6	2	4	1	1	2	1	1	...	...	...	...	1	19
August	10	1	10	8	3	2	2	5	...	...	1	...	4	46
September ...	18	7	4	6	1	3	2	2	...	...	...	...	4	47
3rd Quarter...	34	10	18	15	5	7	5	8	...	...	1	...	9	112
October	22	1	9	4	2	10	2	2	2	...	2	...	6	62
November ...	8	2	8	...	3	3	2	...	1	...	...	...	3	30
December ...	7	2	2	2	...	3	2	1	1	...	1	1	4	26
4th Quarter...	37	5	19	6	5	16	6	3	4	...	3	1	13	118
YEAR	96	24	52	27	18	40	15	17	4	...	8	1	45	348
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	...	13.3

(B) EXPRESSED AS A PERCENTAGE OF THE TOTAL OCCURRING IN THE QUARTER.

1st Quarter ...	18.2	9.1	18.2	4.5	6.8	13.0	4.5	4.5	...	...	2.3	...	18.2	99.9
2nd " ...	23.6	6.7	9.5	5.4	5.7	14.9	4.0	5.4	...	...	4.0	...	20.3	99.9
3rd " ...	30.4	8.9	16.6	13.4	4.5	6.2	4.5	7.1	...	...	0.9	...	8.0	100.0
4th " ...	31.3	4.2	16.1	5.1	4.2	13.6	5.1	2.5	3.4	...	2.5	...	11.0	100.0
YEAR	27.6	6.9	14.9	7.8	5.2	11.5	4.3	4.9	1.2	...	2.3	0.3	12.9	99.9

(C) EXPRESSED AS A PERCENTAGE OF THE TOTAL OCCURRING IN THE DISTRICT.

1st Quarter ...	8.3	16.7	15.4	7.4	16.6	15.0	12.5	11.8	...	...	12.5	...	17.7	12.6
2nd " ...	17.7	20.8	13.5	14.8	27.8	27.5	18.7	23.5	...	...	37.5	...	33.3	21.3
3rd " ...	35.4	41.7	34.6	55.6	27.8	17.5	31.2	47.1	...	...	12.5	...	20.1	32.2
4th " ...	38.6	20.8	36.5	22.2	27.8	40.0	37.5	17.6	100.0	...	37.5	100.0	28.9	33.9
YEAR	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	...	100.0	...	100.0	100.0

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	1927
Scotland ...	20.0	8.8	13.6	14.9	31.1	29.4	17.7
Exchange ...	37.1	12.4	17.1				
Abercromby ...	16.5	8.1	13.8	7.7	14.5	12.7	11.8
Everton ...	15.8	6.3	8.4	8.6	8.8	13.4	10.9
Kirkdale ...	9.8	4.5	8.0	5.1	11.3	13.4	11.1
Wavertree Hill ...	12.8	7.3	7.9	6.9	6.8	9.9	5.5
Wavertree ...	15.2	6.5	8.7	7.1	9.5	9.9	7.4
Walton ...	7.8	3.5	9.4	5.0	3.8	14.0	6.4
West Derby ...	7.5	4.2	3.5	6.4	3.5	6.0	4.3
Wavertree ...	3.3	2.5	7.6	4.7	5.0	6.4	4.1
Walton Park ...	4.8	2.6	0.9	1.8	3.9	2.1	2.0
Everton ...	7.6	7.9	1.5	Included in Wavertree.			
Wavertree ...	4.8	...	4.2	4.0	4.3	9.1	5.0
Walton ...	6.2	3.3	2.6	...	15.2	30.9	6.3
WHOLE CITY ...	14.6	6.2	8.6	7.7	10.3	13.3	9.9
BIRTH RATE ...	26.8	26.1	24.9	24.6	23.3	23.3	22.2

This seasonal variation—as shown in the second and third portions of Table V—was greatest in Exchange (including Scotland), Abercromby, Everton, Kirkdale, and Walton, in which districts 215 (or 61 per cent.) of the deaths occurred. It was especially in Exchange that the marked seasonal variation occurred. A well-marked increase occurred here in August, and during the third and fourth quarters of the year one-third of the deaths occurring in the city appertained to this district alone. The diarrhoeal death rate has been consistently higher in Exchange than in any other part of the city; this is shown in Table VII. The consistent efforts to reduce the mortality have not been without effect, and the death rate recorded from diarrhoea and enteritis (17.7) in Exchange district was in 1927 little higher than the rate (14.6) recorded for the whole city in 1921.

AGE OF CASES; PREDISPOSING CONDITIONS.

(See Table VI.)

Twenty-three 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., 60 per cent.) were at ages 3-11 months. The proportion at these ages increased most during the third and fourth quarters of the year, and of all deaths during the third quarter of the year, 67·9 per cent. were at ages 3 to 11 months. Twenty-one children presented no history of diarrhœa. Three of these were under 1 month old. For example, two of these children, who died shortly after birth, were apparently suffering from jaundice of the new-born; another, 14 days old, was suffering from hydrocephalus; two others were premature twins dying 20 and 22 days after birth. There is no seasonal increase during the third and fourth quarters of the year in this group of deaths, but rather the reverse, the greater number occurring in the winter months.

In fifty-five cases diarrhœa or enteritis was certified as being secondary to some other disease. The primary cause of death given on the certificates was:—Marasmus, 26; broncho-pneumonia, 13; bronchitis, 2; prematurity, 3; rickets, 3; and hydrocephalus, pyelitis, pemphigus, congenital pyloric stenosis, catarrhal jaundice, icterus gravis, pustular eczema and tonsillitis, each once.

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*, 38; *twins*, 12; *premature*, 8; *illegitimate*, 9; *mother at work all day and infant*

improperly fed, 4; mother ill, 5; dead, 3; insane, 2; mentally defective, 2; with tuberculosis, 1; with puerperal sepsis, 1; with breast abscess, 2; also the following diseases: *bronchitis and broncho-pneumonia*, 11; measles, 5; whooping cough, 7; influenza, 1; tuberculosis, 1; sepsis, 2; pemphigus, 1; ulceration of mouth, 1; marasmus and hernia, 5; circumcision, 2; birth injuries; rickets, 2; strangulated hernia, 1; congenital heart disease, 1; in a number of cases two or more of these conditions were simultaneously present. These conditions, though not mentioned on the death certificate, must have had considerable influence upon the fatal illness.

There was, then, evidence of preceding disease, constitutional weakness or parental neglect or ill-health in a further considerable group of infants; there was, however, a well-marked seasonal influence in this group. It must be assumed, then, that the immediate cause of the death of most of these infants was an acute infective diarrhœa supervening upon a preceding state of ill-health or neglect. But in others, e.g., the child with strangulated hernia, the diarrhœa can have had little effect in the production of death.

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.

Male deaths exceeded those of females in the proportion of 4 to 3.

METHOD OF FEEDING.

It was stated that the child was entirely breast-fed in 67 instances, and was partially or entirely artificially fed in 263 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; 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 fourth quarter of the year 78·8 per cent. of the deaths were among artificially-fed infants, and in a further 4·2 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.

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 167). 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." This proportion of acute infective cases is steadily falling, leaving a residuum of deaths in which the fatal result is the effect of quite other causes.

(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 40 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 whooping cough, measles, 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., 81 per cent. of the whole) occurred 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 1927.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total
Exchange	7	5	5	10	20	20	15	14	47	49	98
Abercromby .....	...	1	2	4	7	5	2	4	11	14	25
Everton	5	6	5	7	20	5	18	6	48	24	72
Kirkdale	3	1	5	2	10	8	4	3	22	14	36
Edge Hill	4	2	4	2	2	2	2	4	12	10	22
Toxteth	5	2	6	4	6	3	7	8	24	17	41
Walton	4	2	4	1	4	1	1	2	13	6	19
West Derby	2	1	4	...	4	3	2	1	12	5	17
Wavertree .....	...	1	2	2	2	1	3	5	7	9	14
Toxteth East .....	...	...	2	...	...	...	...	...	2	...	2
Fazakerley .....	...	...	...	...	...	...	1	1	1	1	2
Woolton .....	...	1	...	...	...	...	1	...	1	1	2
City	30	22	39	32	75	48	56	48	200	150	350

AGES AT DEATH.							
Under 1 year	...	...	...	...	...	...	283
Under 2 years	...	...	...	...	...	...	67
TOTAL	...	...	...	...	...	...	350

DEATHS FROM DIARRHŒA AND ENTERITIS SEPARATELY.

	QUARTERS.				YEAR.
	1ST.	2ND.	3RD.	4TH.	
Diarrhœa	12	33	51	23	119
Enteritis	40	38	72	81	231

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 1927 :—

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

The numbers and monthly distribution of notifications received by the Medical Officer of Health during the past year were as follows :—

	1927.
January	1,410
February	1,792
March	2,600
April	2,531
May	1,859
June	1,663
July	1,192
August	692
September	807
October	957
November	861
December	906
	<u>17,270</u>

(¹) 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.

The diseases were notified as follows :—

	1927.
Smallpox	1
Scarlet Fever	1,623
Enteric Fever	71
Paratyphoid Fever	14
Puerperal Fever	46
Puerperal Pyrexia	144
Continued Fever	3
Diphtheria and Croup	1,637
Erysipelas... ..	647
Anthrax	16
Cerebro-spinal Fever	22
Acute Poliomyelitis	17
Measles and German Measles	8,265
Ophthalmia Neonatorum	636
Pneumonia and Influenzal Pneumonia	2,482
Malaria	99
Trench Fever	1
Dysentery	13
Encephalitis Lethargica... ..	87
Chickenpox	1,446
	<hr/>
	17,270
	<hr/>

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 1927:—

	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Removed to hospital
Smallpox.	...	...	...	...	...	1	...	...	...	...	...	...	1	1
Typhoid.	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever.	1	2	1	5	2	4	3	8	9	9	10	13	67	59
Scarlet Fever.	131	104	101	114	123	102	166	101	142	227	167	163	1640	1272
Measles and German Measles.	569	916	1702	2756	1621	1351	773	191	197	246	142	142	10606	1141
Diphtheria and Croup.	155	123	129	135	102	82	126	98	144	192	164	214	1664	1590
Erysipelas.	5	7	3	6	4	2	4	2	3	6	5	4	51	42
Erysipelas.	8	10	3	10	8	8	14	12	8	14	11	10	116	78
Cerebro-spinal Fever.	45	45	36	41	27	55	58	35	52	79	68	70	611	253
Polioencephalitis and Polioencephalitis.	1	2	2	5	...	1	2	2	2	2	3	3	25	21
Polioencephalitis and Polioencephalitis.	2	...	...	...	...	...	...	...	1	3	4	5	15	9
Polioencephalitis and Polioencephalitis.	53	51	81	61	39	57	54	52	41	65	39	43	636	36
Pneumonia & Influenza.	248	574	318	148	105	144	132	72	81	154	135	283	2394	839
Malaria.	2	3	1	6	5	9	6	10	13	4	2	3	64	36
Dysentery.	1	1	...	...	1	...	...	2	1	1	1	...	8	7
Encephalitis Lethargica.	3	8	5	5	4	15	4	4	2	—	8	11	69	45
Whooping Cough.	126	115	123	150	249	198	88	185	120	139	229	266	1988	282
Erysipelas.	2	1	...	3	...	1	...	...	...	...	2	...	9	9
Chickenpox.	485	335	338	259	266	384	265	126	159	231	214	207	3269	273
Monthly Totals	1837	2296	2843	3704	2556	2414	1695	900	975	1372	1204	1437	23233	5993

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.	1922	1923	1924	1925	1926	1927
Smallpox	2	1	1	—	—	1
Plague	—	—	—	—	2	—
Typhus Fever	—	—	—	—	—	—
Enteric Fever	31	16	49	35	42	67
Scarlet Fever	2,419	2,307	3,790	3,561	2,244	1,640
Measles and German Measles	3,570	11,089	5,709	11,202	8,694	10,606
Diphtheria	953	993	1,105	1,504	1,519	1,664
Puerperal Fever.....	60	43	65	56	64	51
Erysipelas	522	395	384	525	567	611
Cerebro-spinal Fever	18	8	13	24	16	25
Poliomyelitis and Polioen- cephalitis	11	39	14	4	19	15
Ophthalmia Neonatorum ...	669	707	690	703	649	636
Anthrax	4	4	6	5	4	9
Encephalitis Lethargica	5	111	189	108	114	69
Whooping Cough	2,025	2,261	2,321	2,274	1,971	1,988
Malaria	43	36	48	52	56	64
Dysentery	2	8	7	8	8	8

Table shewing the deaths from infectious disease occurring during the last six years :—

DISEASE.	1922	1923	1924	1925	1926	1927
Smallpox	—	—	—	—	—	—
Plague	—	—	—	—	1	—
Typhus Fever.....	—	—	—	—	—	—
Enteric Fever	6	6	7	5	6	10
Scarlet Fever	39	43	63	93	24	12
Measles and German Measles	171	356	148	406	221	345
Diphtheria	91	87	71	106	112	90
Influenza.....	333	114	191	178	141	268
Puerperal Fever.....	33	16	22	21	28	25
Erysipelas	26	27	18	24	30	24
Cerebro-spinal Fever	14	6	8	15	12	21
Poliomyelitis and Polioen- cephalitis	4	6	4	1	5	2
Anthrax	—	2	—	2	2	1
Encephalitis Lethargica	3	36	22	44	29	25
Whooping Cough	182	156	169	227	188	125
Malaria... ..	6	—	5	3	4	3
Dysentery	7	5	—	4	5	6
Chickenpox.....	1	3	6	4	5	3

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.

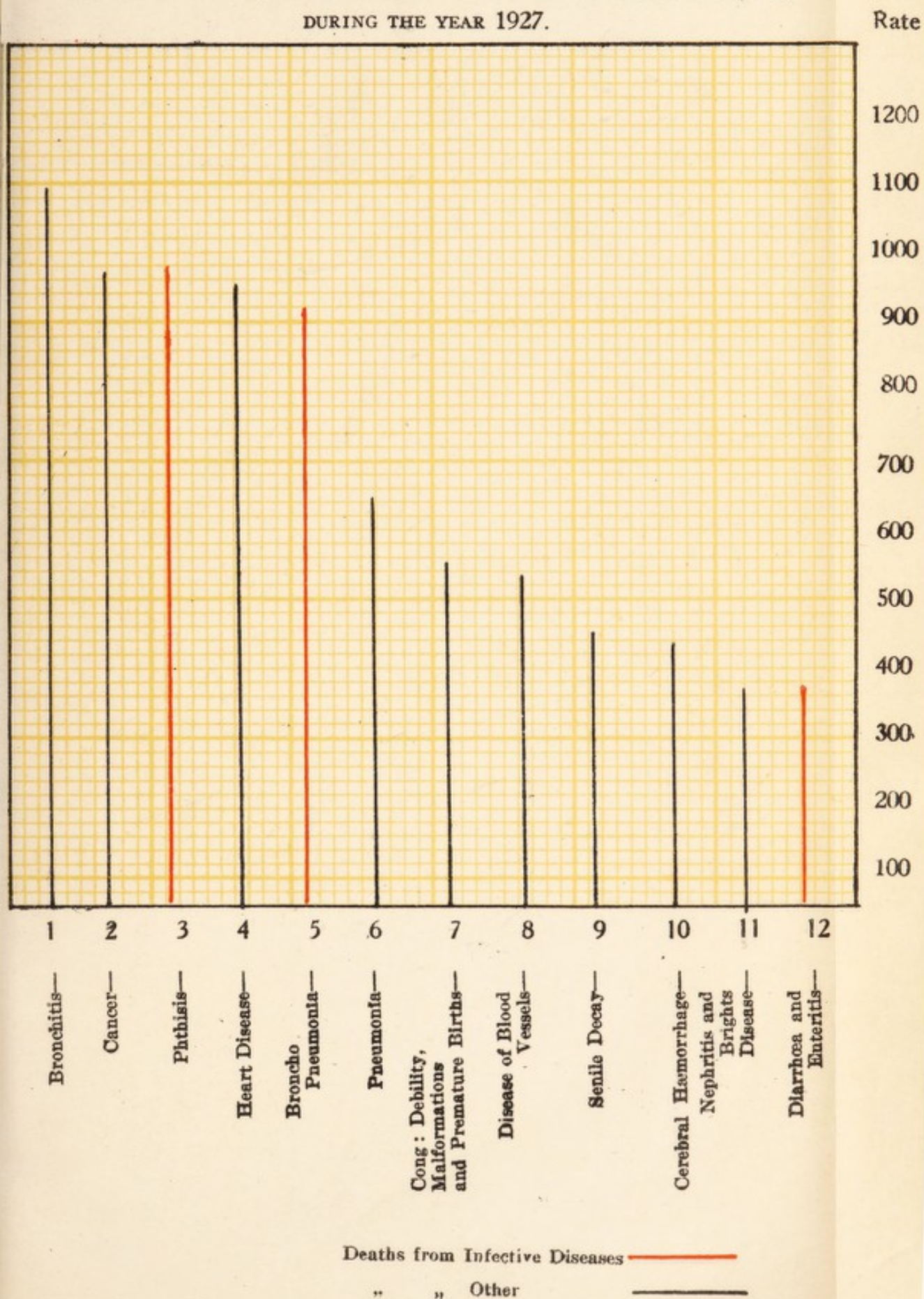
Years.	Smallpox.	Typhus.	Enteric.	Scarlet Fever.	Measles.	Whooping Cough.	Diarrhoea.
1866 to 1875	237.4	652.8	† —	789.4	425.7	496.8	995.3
1876 to 1885	90.8	238.0	126.4	421.2	517.8	472.3	658.4
1886 to 1895	8.8	37.1	153.0	257.5	399.5	322.4	600.6
*1896 to 1905	19.5	25.1	134.4	201.3	329.0	330.4	1,061.9
1906 to 1915	0.3	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
1927	—	—	10	12	345	125	127

* Including extended City area.

† Records not available.

CITY OF LIVERPOOL.

COMPARATIVE VIEW OF TWELVE OF THE PRINCIPAL CAUSES OF DEATH
DURING THE YEAR 1927.



CITY OF LIVERPOOL

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
1927	—	—	—	—	10	—	8	4	11	334	3	122	3	124

* 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 1927.

DISEASE.		1866 to 1875.	1876 to 1885.	1886 to 1895.	1896† to 1905.	1906‡ to 1915	1916 to 1925	8
	Average Population	493,405.	538,651.	536,974.	691,351.	749,267.	814,014.	
Scarlet Fever	Total Deaths ...	7,894	4,312	2,575	2,013	1,416	694	
	Rate per 100,000 per annum.	159.9	78.1	47.9	29.1	19.0	8.5	
Typhus Fever	Total Deaths ...	6,528	2,380	371	251	57	2	
	Rate per 100,000 per annum.	132.2	44.1	6.9	3.6	0.8	0.2	
Enteric Fever	Total Deaths ...	*	1,264	1,530	1,344	503	86	
	Rate per 100,000 per annum.	—	21.5	28.4	19.3	6.7	1.5	
Measles	Total Deaths ...	4,257	5,178	3,995	3,290	4,380	3,006	
	Rate per 100,000 per annum.	86.2	96.1	74.3	47.5	58.6	36.9	
Whooping Cough	Total Deaths ...	4,968	4,723	3,224	3,304	2,967	1956	
	Rate per 100,000 per annum.	100.6	87.6	60.0	47.7	39.7	24.0	
Smallpox	Total Deaths ...	2,374	908	88	195	3	4	
	Rate per 100,000 per annum.	48.1	16.8	1.6	2.8	0.4	0.5	
Diphtheria	Total Deaths ...	2,129	2,434	1,655	1,955	1,239	1,366	
	Rate per 100,000 per annum.	42.4	45.7	30.8	28.2	16.5	16.9	
Phthisis	Total Deaths ...	16,476	13,754	11,436	12,632	12,010	11,489	
	Rate per 100,000 per annum.	333.9	255.3	212.9	182.7	160.7	141.1	

† City Boundaries extended in 1895, 1902, 1905.

* Records not available.

‡ " " " 1913.

DEATHS DUE TO RHEUMATIC FEVER, PERICARDITIS AND ACUTE ENDOCARDITIS.

	1918.		1919.		1920.		1921.		1922.		1923.		1924.		1925.		1926.		1927.		TOTAL.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Rheumatic Fever	10	14	28	31	22	26	22	17	19	29	20	21	22	27	22	28	19	19	28	45	212	257
Pericarditis.....	9	4	8	8	4	4	4	4	8	2	7	2	10	5	5	4	4	5	7	3	66	41
Acute Endocarditis.....	32	20	39	25	28	33	50	36	55	74	49	49	39	55	38	44	23	42	29	43	382	421
TOTALS	51	38	75	64	54	63	76	57	82	105	76	72	71	87	65	76	46	66	64	91	660	719
	89		139		117		133		187		148		158		141		112		155		1,379	

	1927.	
	M.	F.
January ...	...	3
February ...	4	—
March ...	1	—
April ...	1	—
May ...	3	4
June ...	—	1
July ...	2	2
August ...	6	7
September ...	2	2
October ...	2	3
November ...	2	7
December ...	2	4
Liverpool residents who died outside the City	1	10
	28	45

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
1927	34	53	87	34.0	53.0	87.0	10.2	0.64

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 change. In 1890-1894, 55 per cent. of the deaths were of males; but since 1920-25 the position has been reversed, and only 40.8 per cent. were of males, the proportion of males in 1927 was again lower, being 39 per cent. 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 1927 there were 977 deaths attributed to cancer, equivalent to a rate of 1.14 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 1922 and 1927 it will be observed that there is a tendency for deaths from cancer of the breast and also cancer of the 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 190 to 226.

Since 1895 the increase in the number of deaths of males is 125 per cent. and of females 72 per cent., or an actual increase of 268 male and 207 female deaths per annum, the increase of population during this period was 217,975, or 34 per cent.

The accompanying graph is very instructive; it shows for the past 50 years the incidence of cancer at each of six age periods. Whilst there has been an increase in recorded cancer mortality at each age period except the earliest, it will be noted that the increase is most marked at the three later age periods, that is at ages over 60 years. The increase in recorded cancer mortality is mainly at old age.

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 1922 TO 1927.

Part of the Body affected.	1922.			1923.			1924.			1925.			1926.			1927.		
	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total
Buccal Cavity	87	8	95	89	7	96	81	8	89	73	14	87	80	9	89	76	7	83
Stomach, Liver, etc	132	113	245	114	137	251	127	95	222	118	130	248	140	125	265	137	113	250
Intestines, etc.	68	70	138	94	66	160	75	84	159	108	87	195	97	101	198	107	106	213
Breast	—	69	69	—	70	70	—	83	83	1	91	92	1	86	87	3	81	84
Female Genital Organs ...	—	102	102	—	116	116	—	120	120	—	91	91	—	100	100	—	110	110
Skin.....	4	5	9	11	5	16	11	8	19	7	3	10	10	6	16	4	7	11
Other or Unspecified Organs	115	75	190	123	89	212	165	84	249	190	85	275	166	72	238	156	70	226
Totals.....	406	442	848	431	490	921	459	482	941	497	501	998	494	499	993	483	494	977

DEATHS FROM EXCESSIVE DRINKING IN THE CITY OF LIVERPOOL, &c.

MORTALITY PER 1000 LIVING AT EACH AGE IN FIVE SUCCESSIVE DECENNIA,
1877-1926, FROM CANCER.

The number of deaths of infants under one year of age from suffocation was 14, which is one of the lowest figures recorded in the City.

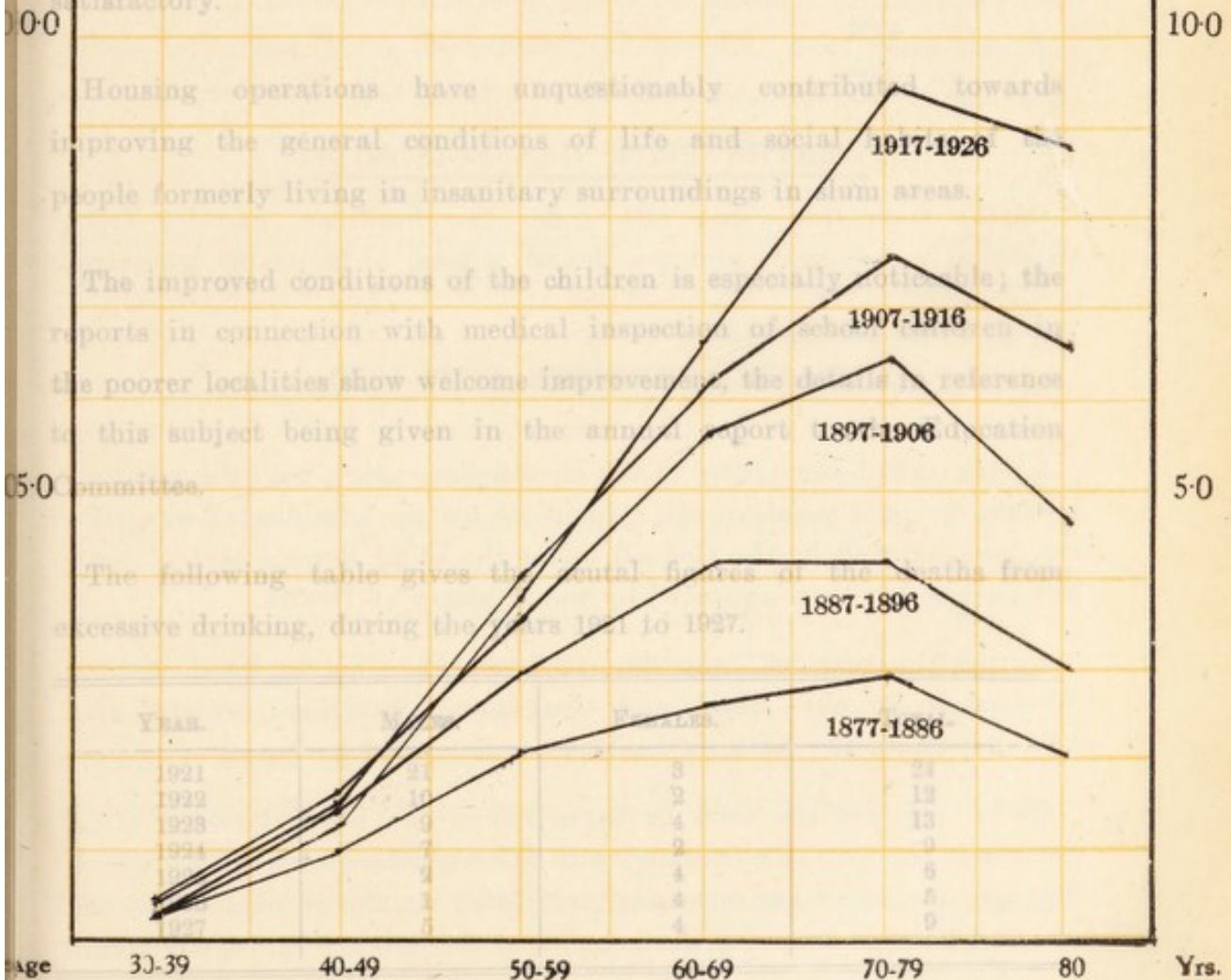
Improved habits and conditions, wider educational influences and other agencies including those associated with the welfare of motherhood and infancy have all played their part in promoting a more temperate use of alcoholic drinks with results which are eminently satisfactory.

Housing operations have unquestionably contributed towards improving the general conditions of life and social hygiene of the people formerly living in insanitary surroundings in slum areas.

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

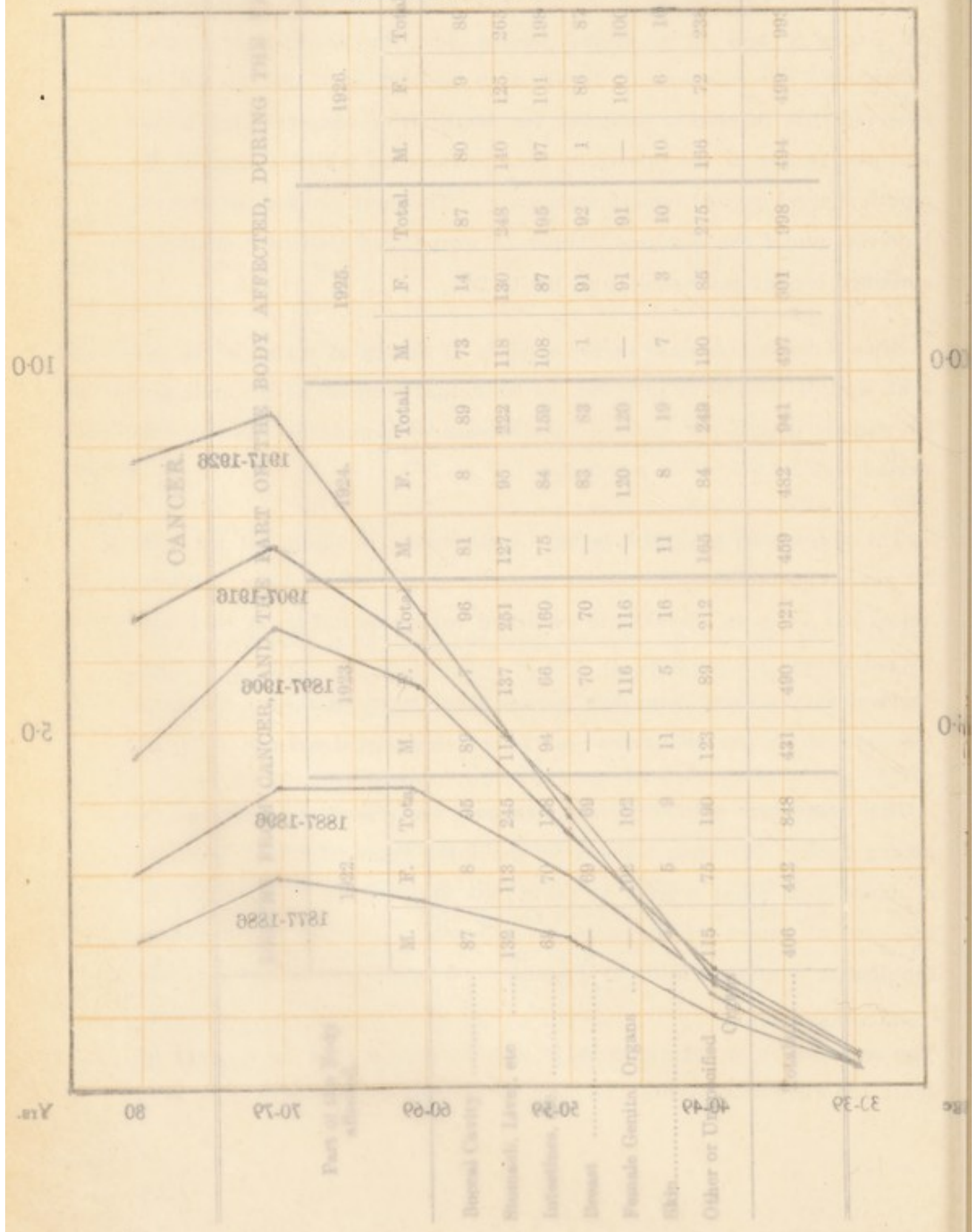
The following table gives the actual figures of the deaths from excessive drinking, during the years 1921 to 1927.

YEAR.	MALES.	FEMALES.
1921	21	8
1922	10	2
1923	9	4
1924	7	2
1925	9	4
1926	1	4
1927	5	4



MORTALITY PER 1000 LIVING AT EACH AGE IN FIVE SUCCESSIVE DECADES
1877-1926, FROM CANCER.

CITY OF LIVERPOOL



DEATHS FROM EXCESSIVE DRINKING, &c.

It is still gratifying to note that the deaths due to or accelerated by drink continue to remain low as shown in the table below.

The number of deaths of infants under one year of age from suffocation was 14, which is one of the lowest figures recorded in the City.

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 have unquestionably contributed towards improving the general conditions of life and social habits of the people formerly living 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 table gives the actual figures of the deaths from excessive drinking, during the years 1921 to 1927.

YEAR.	MALES.	FEMALES.	TOTAL.
1921	21	3	24
1922	10	2	12
1923	9	4	13
1924	7	2	9
1925	2	4	6
1926	1	4	5
1927	5	4	9

The following table shows the number of deaths of infants under one year of age from suffocation during the past eight years. The figures show a remarkable decline as compared with previous years, the average number of deaths during 1914-1918 being 42 per year.

The deaths of infants under one year of age from suffocation have also shown a fall during recent years, the deaths during the year numbering 14, against an average for the five years 1914 to 1918 of 42.

YEAR.							DEATHS.
1920	...	...	...	...	...	...	23
1921	...	...	...	...	...	...	12
1922	...	...	...	...	...	...	18
1923	...	...	...	...	...	...	7
1924	...	...	...	...	...	...	17
1925	...	...	...	...	...	...	16
1926	...	...	...	...	...	...	10
1927	...	...	...	...	...	...	14

DEATHS FROM GAS POISONING.

Deaths from this cause fall under two headings, namely, from accidental poisoning 6, and suicides 20, a total of 26 deaths occurring in the year.

BLIND PERSONS ACT, 1920.

A Special Sub-Committee of the Health Committee, with the addition of eight co-opted members, are responsible for the administration of the Scheme approved by the Council under the Blind Persons Act of 1920. The Scheme has been approved by the Ministry of Health.

During the year 1927, the sum of £9,000 was paid to the Liverpool Workshops for the Blind and the Home Teaching Society, and £301 15s. 3d. to the National Library for the Blind.

These amounts are used by these bodies for the welfare of blind persons in the City in accordance with the requirements of the approved Scheme, the latter amount being calculated on the estimated number of blind persons receiving the benefits of the Library during the year.

MATERNITY and CHILD WELFARE.

The infant mortality rate for 1927 is 94 per 1,000 births, being the lowest on record. A glance at the chart facing page 76 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.

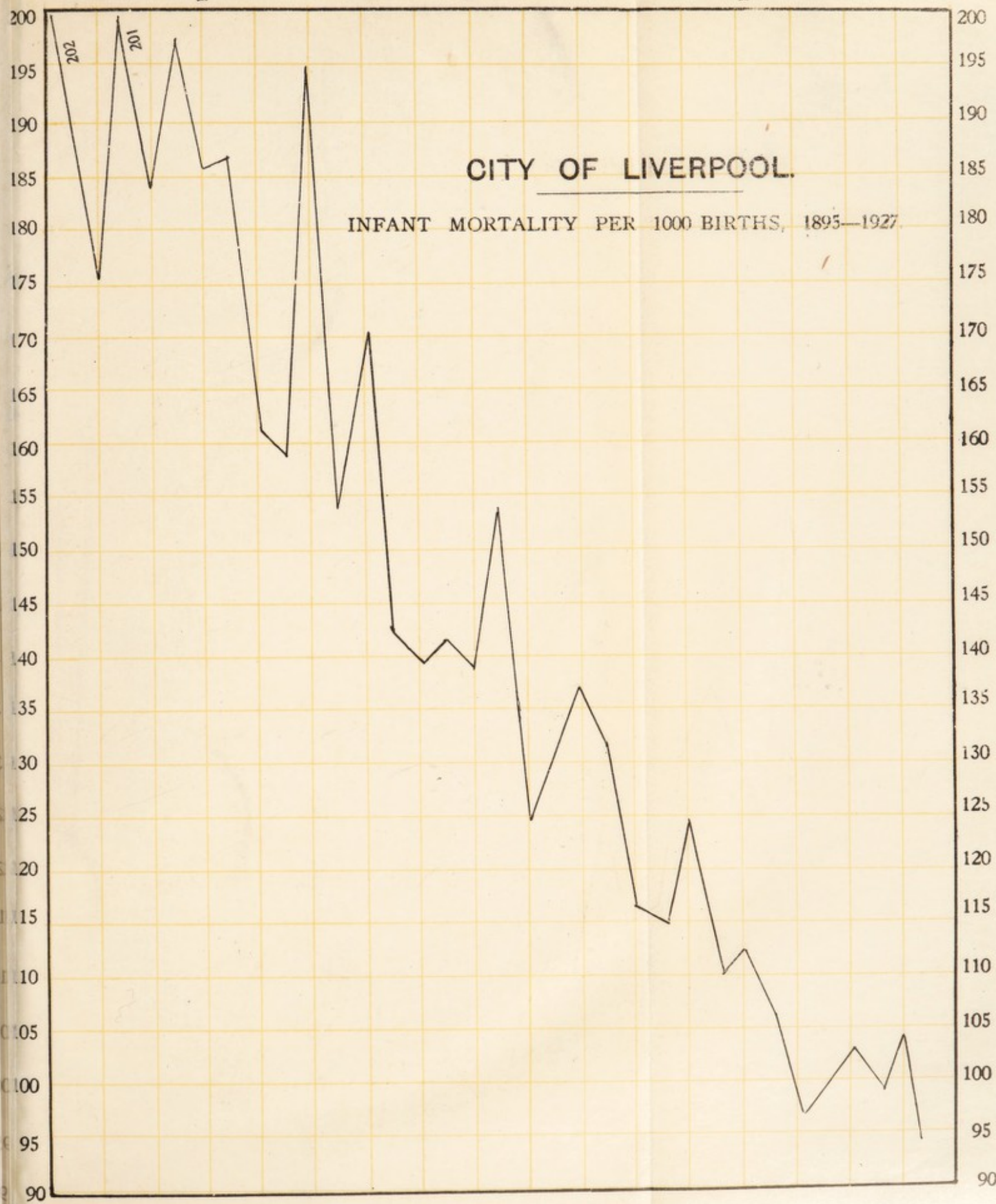
It is very gratifying to record this decline, and moreover, it may be noted that the numbers of deaths from all the usual forms of infantile disease, such as broncho-pneumonia, convulsions, prematurity, etc., have been reduced, but the most markedly affected cause is the one which, in former years, frequently proved the most fatal, namely, epidemic diarrhœa. The number of deaths under one year of age from this cause in the year 1927 was 313, 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, pre-maternity and infant 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.

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
1898	4,111	184	174
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	
1908	3,355	140	183
1909	3,377	143	
1910	3,216	129	
1911	3,466	154	
1912	2,778	125	
1913	2,987	132	
1914	3,219	139	
1915	2,866	133	
1916	2,421	117	
1917	2,071	115	
1918	2,137	124	105
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	
1927	1,781	94	

1895 9 7 8 9 1900 1 2 3 4 5 6 7 8 9 1910 1 2 3 4 5 6 7 8 9 1920 1 2 3 4 5 6 7



CITY OF L

INFANT MORTALITY PER

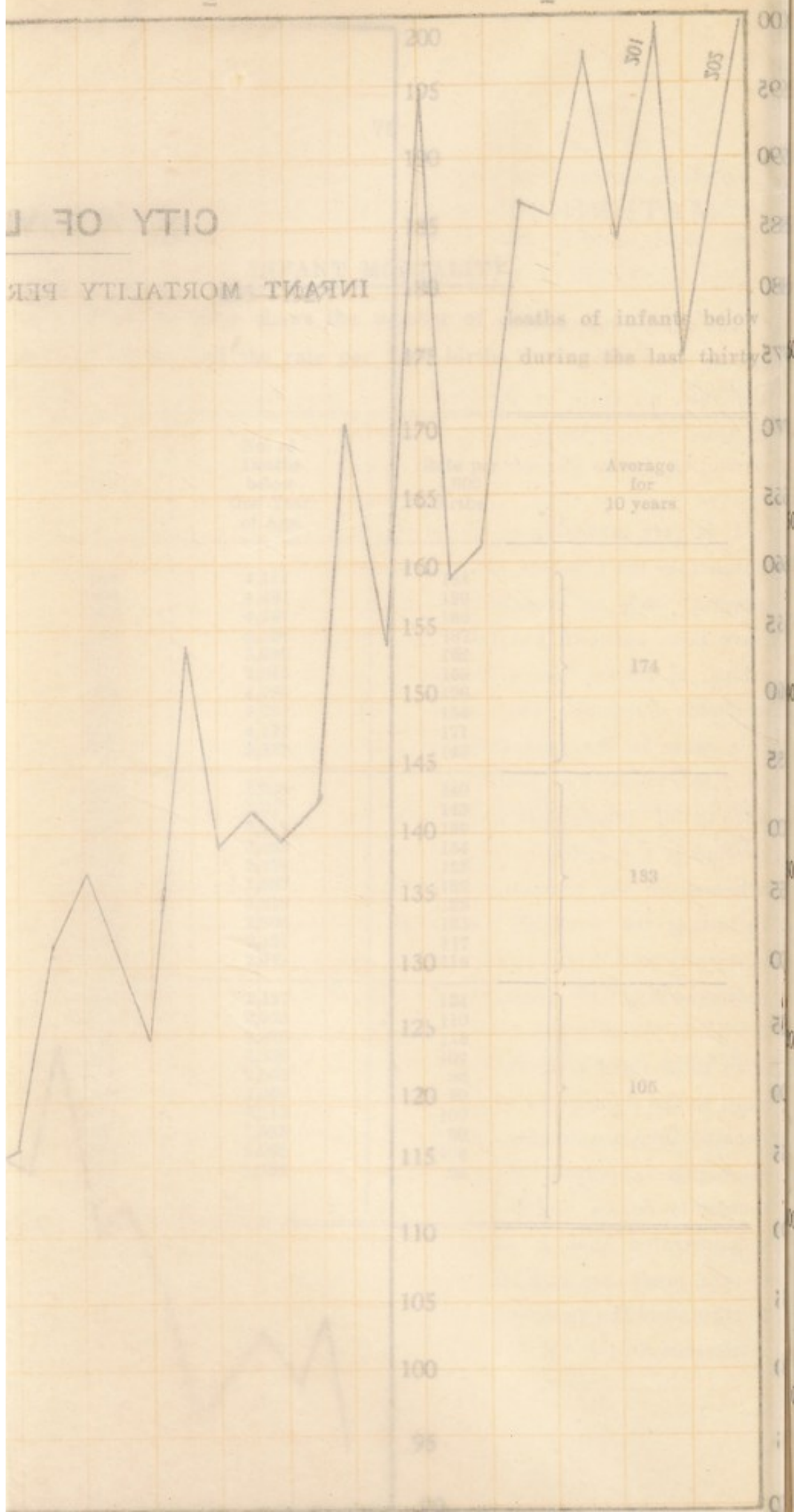
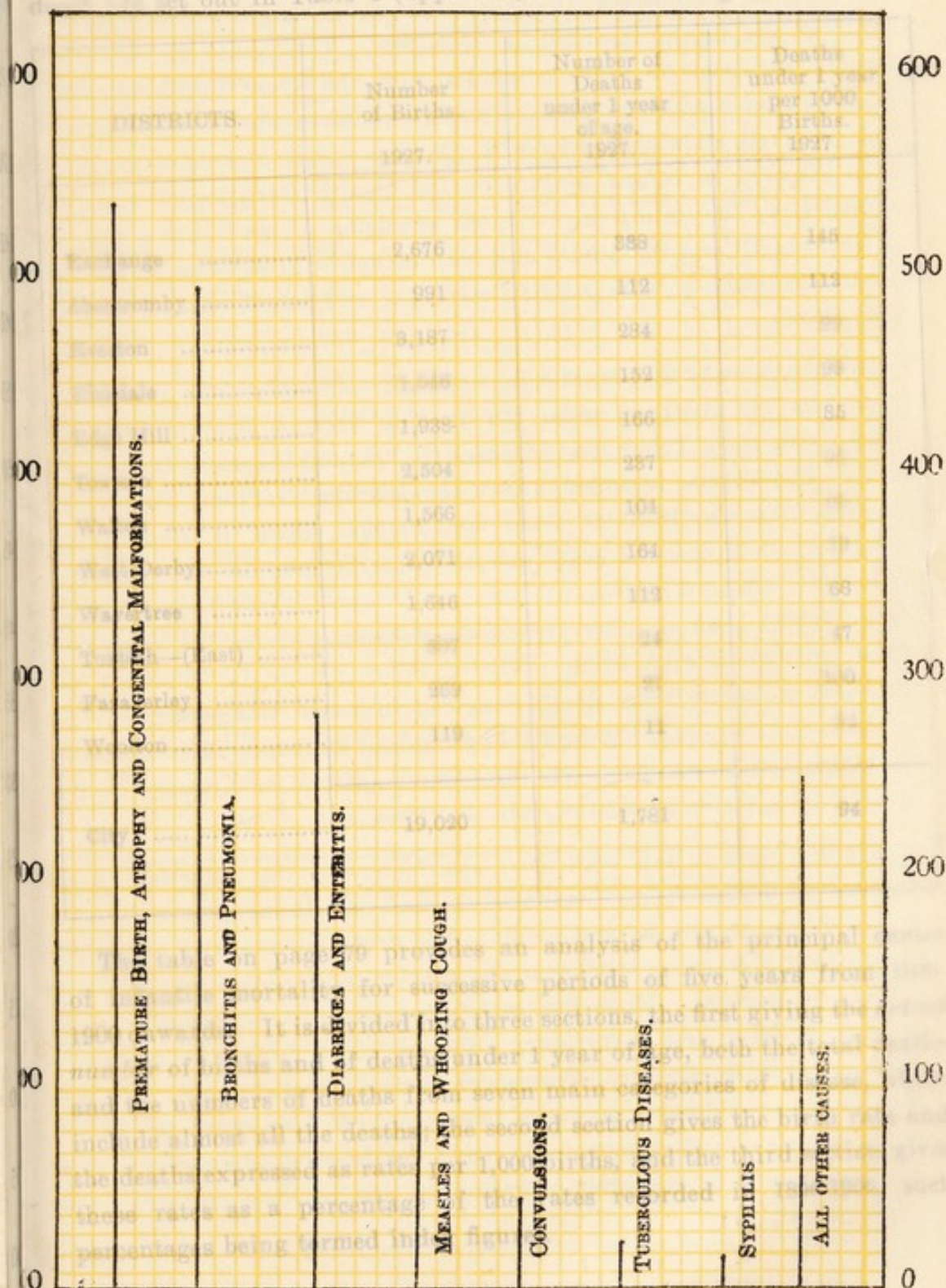


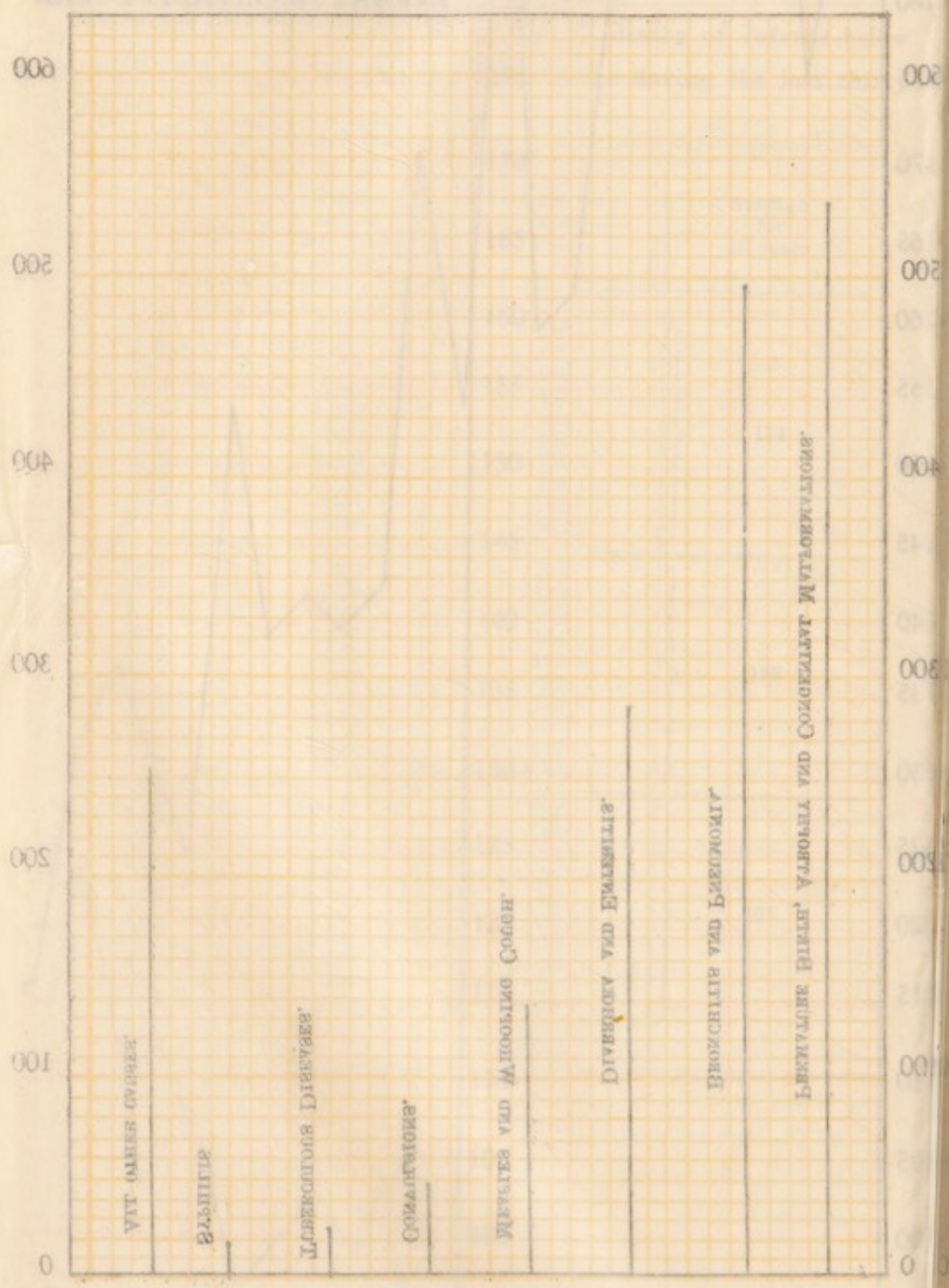
CHART SHOWING THE PRINCIPAL CAUSES OF DEATHS OF INFANTS,

CHART SHOWING THE PRINCIPAL CAUSES OF DEATHS OF INFANTS,
UNDER ONE YEAR OF AGE, DURING 1927.



CITY OF LIVERPOOL

CHART SHOWING THE PRINCIPAL CAUSES OF DEATHS OF INFANTS, UNDER ONE YEAR OF AGE, DURING 1927.



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 1927 is shown in the following table. The detailed causes of death are set out in Table 4 (appendix).

DISTRICTS.	Number of Births. 1927.	Number of Deaths under 1 year of age. 1927.	Deaths under 1 year per 1000 Births. 1927
Exchange	2,676	388	145
Abercromby	991	112	112
Everton	3,187	284	89
Kirkdale	1,546	152	98
Edge Hill	1,938	166	85
Toxteth	2,504	237	95
Walton	1,566	104	66
West Derby	2,071	164	79
Wavertree	1,646	112	68
Toxteth—(East)	507	24	47
Fazakerley	269	27	100
Woolton	119	11	92
City	19,020	1,781	94

The table on page 79 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 19,020 per annum, the number of infantile deaths has fallen from 4,232 to 1,781, and the infantile death rate has accordingly fallen from 189 to 94 per 1,000 births; in other words, this rate has fallen to 49·7 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, ante natal, post natal and infant clinics, hospitals and others.

Investigation of the actual causes of death bears this out. The greatest reduction has occurred under the heading Nervous Disease (reduction from 100 to 19·0), Tubercular Diseases (to 21), and Digestive Diseases (to 28·7). 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. Convulsions may also occur at the onset of other infectious diseases, and further may result from injuries during birth. 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 74) 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 1896-1925,
AND THE YEAR 1927. (A).—RECORDED DEATHS.

Ys.	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 Diarrhœa.	8 Malforma- tions, Premature Birth, Maras- mus, &c.	9 External Causes.
18900	111,700	21,160	1,508	698	2,476	3,575	6,376	5,698	819
18905	118,801	20,353	1,546	644	2,516	3,484	5,187	5,732	565
18910	118,313	17,739	1,613	465	2,052	3,146	3,902	5,520	539
18915	111,872	15,458	1,309	345	1,432	2,916	3,635	4,953	426
18920	99,451	11,510	1,116	202	1,083	2,821	1,872	4,107	179
18925	104,217	10,497	1,066	200	573	2,776	1,786	3,764	120
1927	19,020	1,781	202	24	79	495	313	612	22

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

18900	33.4	189	12.7	6.2	22.1	32.0	57.1	51.0	7.3
18905	33.4	172	13.0	5.5	21.2	29.3	43.7	48.1	4.7
18910	32.2	149	13.6	3.9	17.4	26.6	33.0	46.7	4.6
18915	29.3	137	11.6	3.1	12.8	26.1	32.5	43.1	3.8
18920	24.9	116	11.1	2.0	10.9	28.4	18.8	42.0	1.8
18925	25.1	100	10.2	1.9	5.5	26.6	17.1	36.1	1.2
1927	22.2	94	10.6	1.3	4.2	26.0	16.4	32.0	1.2

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

18900	100	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
18905	100	91.0	102.3	89.3	95.9	91.5	76.5	94.0	65.7
18910	93	78.6	107.1	62.9	78.6	83.1	57.8	91	63.0
18915	87	72.5	91.9	50.0	57.9	81.5	56.9	84	52.1
18920	76	61.4	87.4	32.2	49.3	88.7	32.7	82	25.5
18925	75.1	54.9	80.3	30.6	24.9	84.7	29.9	70.8	16.4
1927	66.4	49.7	82.7	21.0	19.0	81.2	28.7	62.7	16.4

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 1927 with gratifying results.

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 25 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, seven 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. Patients requiring treatment are referred to private doctors or hospitals. 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 rules 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 seven Corporation clinics only.

Brought or sent by midwife	...	...	...	...	...	981
Return cases	...	...	...	...	...	384
Sent by friends	...	...	...	...	...	392
Own accord	...	...	...	...	...	343
Sent by health visitor	...	...	...	...	...	113
Sent by doctors	...	...	...	...	...	43
Sent by hospital or voluntary association	...	...	...	...	...	32
Total New Cases						2,288

The total attendances at the clinics were ... 9,840

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 640 were primigravidae and 1,539 were multiparae, and 109 were not pregnant.

The arrangements for confinement for the year were :—

Midwife	...	...	...	...	...	1,611
Institution	...	...	...	...	...	311
Private doctor	...	...	...	...	...	35

In 210 cases arrangements had not been made.

70·4 of the births of pre-maternity clinic patients are attended in their own homes by midwives.

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 1927 were 3,563.

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, and cook, clean and attend to the children. They are provided 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, (e.g., the Carnegie Model Welfare Centre), day and resident nurseries, infant welfare centres (milk depôts), 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, Grade A (T.T.) 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, such note being re-signed by the doctor every four or six weeks.

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 to 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 much appreciated, and a large number of women and children attend at each session.

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 they have been in existence:—

	1925.		1926.		1927.
New cases	1,094	...	1,092	...	990
Total attendances	16,160	...	17,005	...	15,542

* This Centre was closed for eight weeks during the year 1927 for cleaning and decorating.

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

	1925.	1926.	1927.
New cases	259	301	336
Total attendances ...	1,117	1,249	1,150

During the year the sewing, cookery and knitting classes held for the mothers at this centre were well attended.

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 of 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 which 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.

A mercury vapour-lamp has been installed for the administration of "artificial sunlight" to children and expectant mothers. It is hoped that this will prove a useful addition to the other activities of the centre.

A small laboratory has also been equipped and adjoins the wards.

During 1927 the numbers admitted to the wards were:—109 children.

The sources of admission were:—

Infant welfare centres	42
Health visitors on districts	22
Hospitals	12
Corporation nursery transfers	3
Private doctors	9
Voluntary associations	8
Sent by friends of previous patients	8
Midwives	5

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	...	...	...	...	...	43
Infantile dyspepsia	...	...	...	...	...	20
Early rickets	...	...	...	...	...	14
Observation for various reasons (e.g., breast feeding, weaning, marasmus, etc.)	...	...	...	...	...	31
Prematurity (weight 2lbs. 8oz. on admission, aged 3 weeks)	...	...	...	...	...	1
						<hr/> 109 <hr/>

The average duration of stay was 40 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 79 cases were sent home having established good progress, two made fair progress, five went home under the care of their own doctor, five were transferred to hospital, and three died (concurrent broncho-pneumonia).

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.

In cases of mismanagement of feeding and also in the care of first babies whose mothers are inexperienced in the care of young children, the matron of the centre gives instructions to the mothers in the bathing and care of the child, preparation of feeds, and clothing and hygiene of the baby generally. Full written directions as to feeding are given with each child when sent home.

* Six babies were in residence for breast feeding under supervision, the mothers attending at stated intervals during the day. In all cases both mother and child made satisfactory progress.

MIDWIVES ACTS, 1902 AND 1918.

The Midwives Act, 1918, as an extension of the principal Act, came into force on 1st January, 1919, and, under it, the Local Supervising Authority (Health Committee) is required to pay the fee of all medical practitioners called in cases of emergency. This section is the confirmation of the step taken by the City Council in 1904, when a resolution was passed authorising the Health Committee to pay the sum of one guinea in cases of emergency assistance. 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 1927 three hundred and two midwives gave the required notice, under section 10, of their intention to practise midwifery in the city.

A total of 11,647 births was attended by these midwives, and 1,453 by the midwives on the staff of the Ladies' Charity, making altogether 68·9 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. The number of births taking place in poor law institutions has risen since 1923 from 1,055 to 1,849.

STATEMENT OF NOTIFICATIONS OF BIRTHS RECEIVED DURING THE YEARS 1923 TO 1927.

Notifications Received from	1923.		1924.		1925.		1926.		1927.	
	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	13,953	67.42	13,270	64.55	12,624	64.48	12,535	63.33	11,647	61.23
Medical Attendants.....	1,694	8.19	1,920	9.33	1,852	9.45	1,749	8.83	1,690	8.88
Poor Law Institutions	1,055	5.10	1,197	5.82	1,463	7.47	1,728	8.73	1,849	9.72
Ladies' (Maternity Hospital...	719	3.47	690	3.35	647	3.30	776	3.81	1,075	5.65
Charity (District Homes	1,433	6.92	1,501	7.30	1,489	7.60	1,471	7.43	1,453	7.64
"Rest Home," Chatham St...	334	1.61	335	1.63	331	1.69	308	1.55	289	1.52
Other Institutions	30	0.14	43	0.21	101	0.52	190	0.96	310	1.63
Parents	5	0.02	5	0.02	6	0.03	8	0.04	3	0.02
	19,223	92.89	18,961	92.23	18,513	94.49	18,765	94.81	18,316	96.29
Total number of births registered in the City	} 1923 1924		} 20,695 20,559		} 19,592 19,792		} 19,592 19,792		} 19,020 19,020	

STILL-BIRTHS.

The number of still-births notified during 1927 was 735, of which number 382 were notified by midwives, being at the rate of 2·9 per cent. of the births attended by them.

*A midwife does not 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	...	...	...	...	...	15
Seventh month	...	...	...	...	...	75
Eighth month	...	...	...	...	...	98
Ninth month	...	...	...	...	...	194
						<hr/> 382 <hr/>

Of these, 297 were examined by the City Bacteriologist, and 12, or nearly 4 per cent., gave a positive reaction, indicating that the cause of the still-births was probably syphilis (see page 227). 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 34.

The number of visits paid with reference to still-births was 641.

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

Year.	Examined.	Positive.	Percentage.
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
1927	297	12	4

Among the midwives cases during the year there were 81 difficult labours where the child was stillborn, which were delivered by medical practitioners called in under the rules of the Central Midwives Board.

* The Births and Deaths Registration Act, 1926, which came into force on 1st July, 1927, requires the registration of still-births by the Registrar of Births and Deaths.

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	21
Occipito-posterior presentation	56
Transverse presentation	14
Breech presentation	54
Foot presentation	10
Cord presentation	33
Placenta prævia	9
Deformed pelvis	26
Ante-partum hæmorrhage	140
Post-partum hæmorrhage	78
Retained placenta or membranes... ..	125
Ruptured perinæum	472
Multiple births	35
Abortion or premature birth	77
Pyrexia	175
Eclampsia	8
Obstructed labour, uterine inertia, or requiring instrumental assistance	589
Influenza	10
Various	297

CHILD :

Injury at birth	1
Malformation	28
Feebleness and prematurity	201
Skin eruption	39
Ophthalmia	141
Other conditions in child	138

2,777

The number of visits of enquiry with regard to accounts for emergency assistance during the year was 3,625.

PUERPERAL FEVER.

The number of cases of puerperal fever notified to the Medical Officer of Health during the year was 51, of which 25 proved fatal. This gives a death rate of 1·31 per 1,000 births in the city.

There were 42 cases admitted or occurred in hospital, viz.:—
7 Brownlow Hill Infirmary; 4 Mill Road Infirmary; 26 Walton Institution; 3 Toxteth Institution; 1 Royal Infirmary; 1 Maternity Hospital.

After the usual enquiries were made, 27 cases (of which 11 died) were found to have occurred in the practice of midwives. The number of visits paid in this connection was 28.

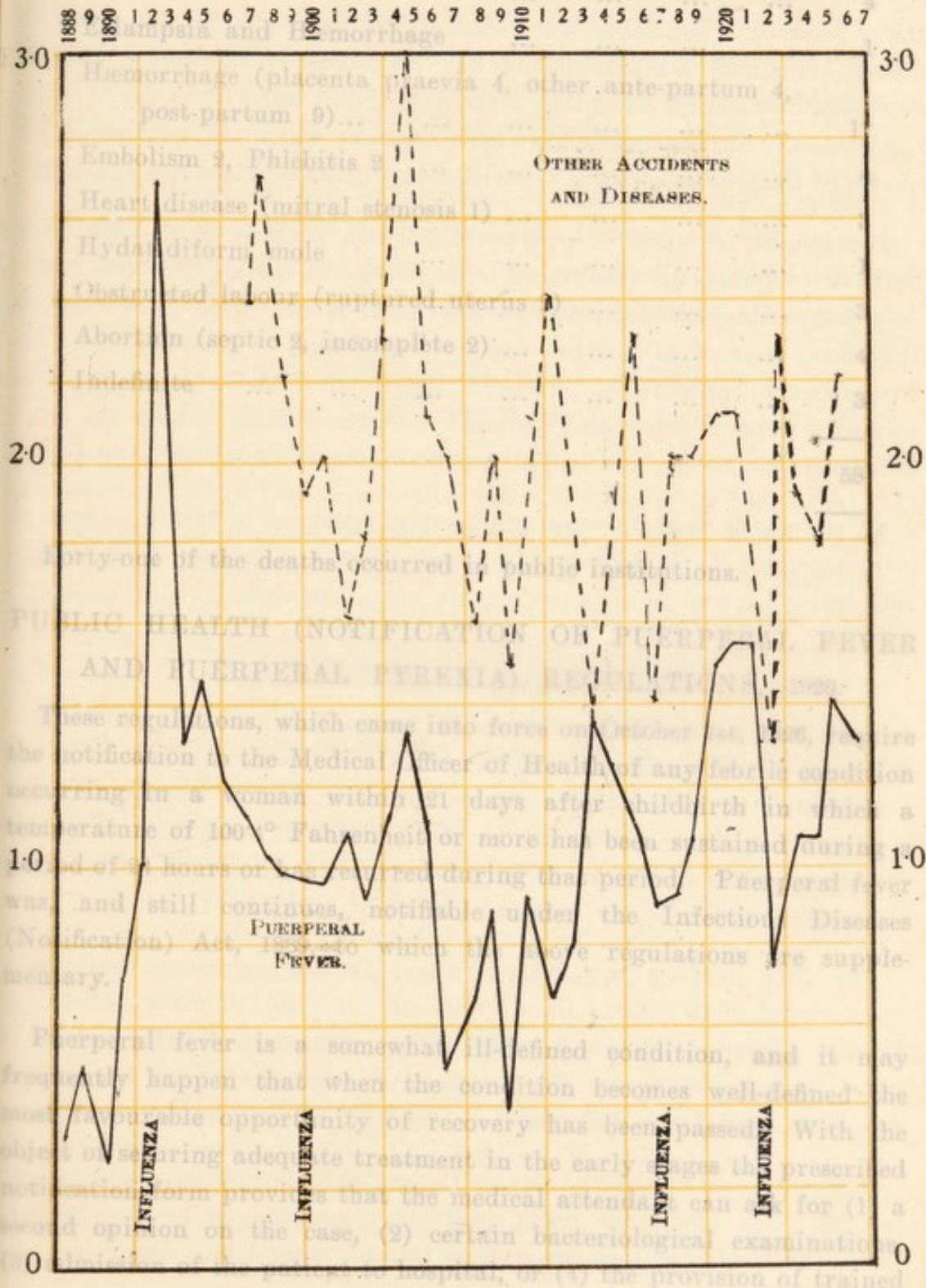
DEATHS AND DEATH RATES FROM PUERPERAL FEVER AND OTHER DISEASES AND ACCIDENTS OF PREGNANCY DURING THE YEARS 1908 TO 1927 (20 YEARS).

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.
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
1927	19,020	25	1·31	58	3·0

As shown in the above table and the accompanying diagram the number of deaths from other accidents and diseases of pregnancy continues to be high. The certified causes of the 58 deaths that occurred in 1927 were:—

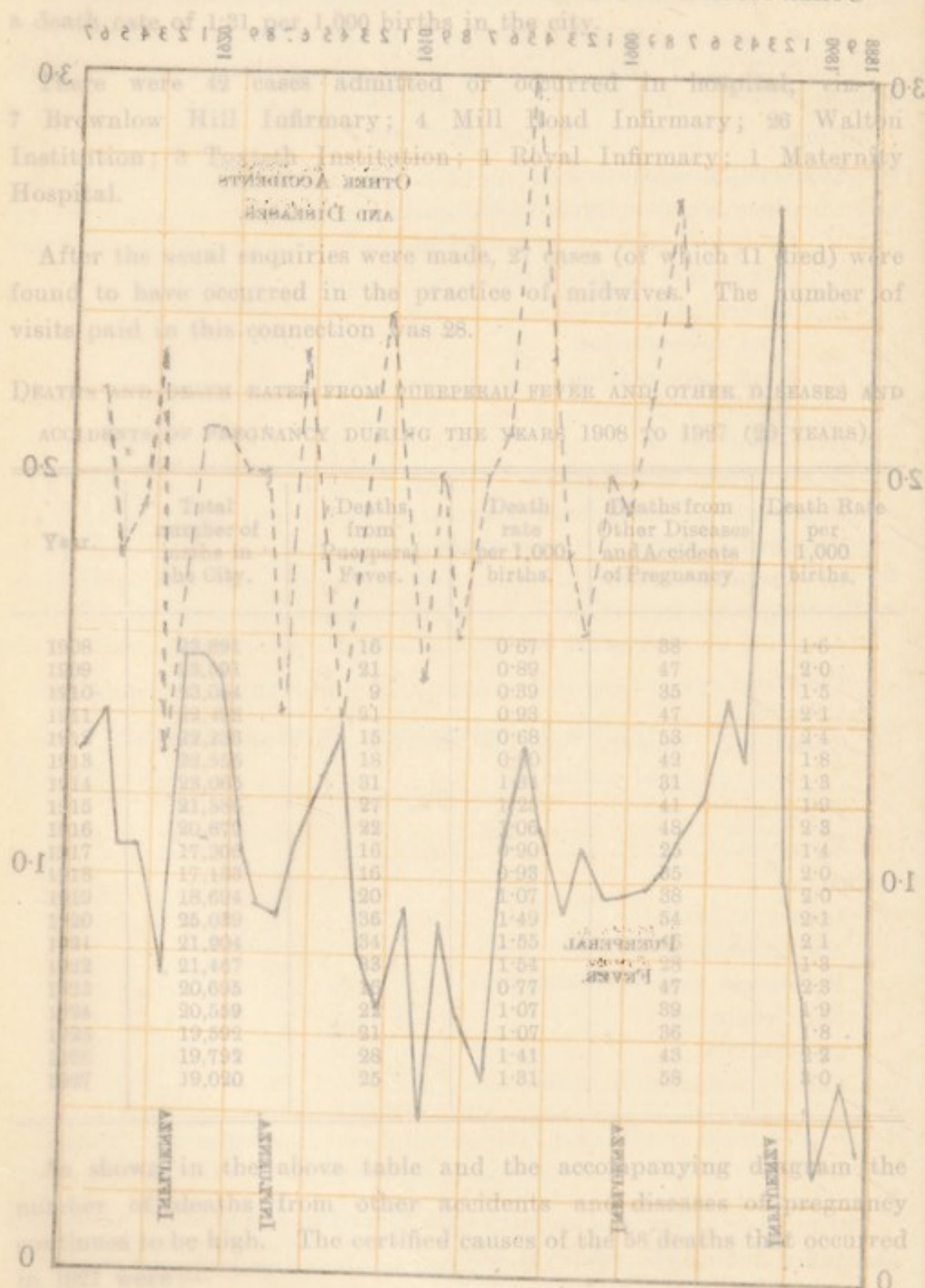
CITY OF LIVERPOOL

MORTALITY PER 1000 BIRTHS FROM PUERPERAL FEVER AND
OTHER ACCIDENTS AND DISEASES OF PREGNANCY, 1888-1927.



CITY OF LIVERPOOL

MORTALITY PER 1000 BIRTHS FROM PUERPERAL FEVER AND OTHER ACCIDENTS AND DISEASES OF PREGNANCY, 1888-1927.



Convulsions (ante-partum 3, post-partum 10, not stated 2)	...	...	...	...	...	...	15
Toxaemia	...	...	...	...	...	...	3
Nephritis 3, Pyelitis 1	...	...	...	...	...	...	4
Eclampsia and Hæmorrhage	...	...	...	...	...	...	1
Hæmorrhage (placenta prævia 4, other ante-partum 4, post-partum 9)...	...	...	...	...	...	...	17
Embolism 2, Phlebitis 2	...	...	...	...	...	...	4
Heart disease (mitral stenosis 1)	...	...	...	...	...	...	3
Hydatidiform mole	...	...	...	...	...	...	1
Obstructed labour (ruptured uterus 2)	...	...	...	...	...	...	3
Abortion (septic 2, incomplete 2)	...	...	...	...	...	...	4
Indefinite	...	...	...	...	...	...	3
							58

Forty-one of the deaths occurred in public institutions.

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

These regulations, which came into force on October 1st, 1926, 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.

The number of cases of puerperal pyrexia notified during the year was 143. Of these 12 were found to be puerperal septicæmia, and therefore fall within the definition of puerperal fever. Five were cases of influenza, four of bronchitis, two of pneumonia. The remaining 120 were cases of pyrexia of puerperal origin of a lesser degree than is termed puerperal fever, and included four who resided outside the city; two were cases of pyelitis (inflammation of the pelvis of the kidney).

Of the above cases 78 were admitted or occurred in hospitals and 17 were attended by midwives. In three cases a consultant obstetrician was called in, and in six cases nurses were provided.

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, 2,394 visits were paid to the homes of practising midwives for the purpose of inspection, and for special enquiries relating to their work.

The midwives of the city are, with very rare exceptions, fully trained women. They have for many years been encouraged by the Medical Officer of Health to form themselves into an association, which, year by

year, has become numerically stronger, and that association embraces nearly all, if not quite all, of the midwives in the city. The great advantage of this is, that the midwives as a body are now closely linked up with sanitary administration, and they themselves, as well as their patients, derive considerable advantage from this. For example, they arrange for themselves special courses of instruction, at which they receive much help (from lectures and in other ways) from the gynaecologists of the city 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 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 1927 are as follows:—

Total number of cases admitted	...	...	...	...	194
Number of women confined in the home	...	...	...	...	165
„ pre-maternity cases	...	...	...	...	31
„ post-natal cases (with infants)	...	...	...	...	1

The average duration of stay was 18·3 days.

Of the 165 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 136, and the cases of complicated labour were 29. Five patients were transferred to hospital for caesarean section. Of the total number of cases 117 were primigravidae. Former patients admitted for a second confinement at the home numbered 22, and for a third confinement numbered 3.

Of the 165 babies born in the home, 162 were born alive and 3 were still-born.

76 infants were males, average weight 7 lbs. $2\frac{1}{2}$ ozs.

89 infants were females, average weight 7 lbs. 3 ozs.

Of the 162 babies born alive 2 died within 10 days of birth. The cause of death was stated to be:—

- | | | | | | |
|---------------------------------|-----|-----|-----|-----|-------------|
| (1) Prematurity | ... | ... | ... | ... | 2 days. |
| (2) Prematurity and convulsions | ... | ... | ... | ... | 45 minutes. |

The 31 pre-maternity cases were admitted on account of various complications associated with pregnancy, such as albuminuria, bacilluria, heart disease, contracted pelvis, and varicose veins.

No case of puerperal sepsis and no case of ophthalmia neonatorum occurred in the home during the year, but there was one case of puerperal pyrexia, where the patient suffered from pyelitis. She made a good recovery.

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

During the year 172 patients made a first attendance, and the total number of attendances was 689. The average attendance per week is 13.78.

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, 692.

(1) Reported by doctors	...	...	...	...	46
(2) „ from hospitals	...	...	...	...	63
(3) „ by midwives	...	...	...	...	320
(4) „ „ on Medical Help Record Forms	...	...	...	...	56
(5) Discovered by inspectors	...	...	...	...	206
(6) Reported by parents	...	...	...	...	1—692

The above consisted of—

(1) Mild cases	...	...	...	...	480
(2) Severe cases	...	...	...	...	123
(3) Under private treatment	...	...	...	...	33
(4) Not Ophthalmia neonatorum	...	...	...	...	56—692

Number treated in their homes under special nurse	...	384
„ attended at hospital as out-patients	...	120
„ admitted into hospital	...	36
„ treated by doctors and special nurse	...	25
„ „ „ alone	...	71—636

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 1927	27	50	106	47	40	47	54	47	33	185	636

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.
636	52	20	38	8.2

TABLE SHEWING INFECTION OF EYES AT ONSET.

Both Eyes.	Right Eye.	Left Eye.	Doubtful.	Total.
417	90	105	24	636

In the 105 cases where the left eye only was affected at onset the other eye became affected in 4 cases.

In the 90 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 5,554.

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 36 babies were admitted with their mothers. The average stay in hospital was 15 days.

RESULTS.

Number of cases under treatment at 1/1/27	...	...	38
„ „ notified during year 1927	...	...	636—674
„ „ cured	...	...	639
„ died during treatment	...	...	3
„ in Poor Law Institutions	...	...	1
„ removed to another town	...	...	1
„ under treatment 31/12/27	...	...	30—674

There was one case in which damage to sight occurred. 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 cases.

INFANT WELFARE CENTRES AND MILK DEPOTS.

The milk which is supplied from these Centres and Depots (as from 1st January, 1928), consists entirely of Grade A Tuberculin tested.

The total number of persons supplied with milk during the year was 14,941, viz., 4,671 on the books at the beginning of the year, and 10,270 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 ...	85	693	497	83	664	2,022
Earle Road ...	43	211	235	55	157	701
Park Road ...	182	544	449	193	329	1,697
Boaler Street ...	92	295	310	53	326	1,076
St. Anne Street ...	152	752	383	199	584	2,070
Rathbone Road ...	35	68	185	23	113	424
Mill Street ...	77	172	187	57	110	603
Agents ...	58	338	318	142	1,726	2,582
	724	3,073	2,564	805	4,009	11,175

The total quantity of milk supplied during the year was 184,799½ gallons, and the bottles prepared reached a total of 590,603.

Total cases on books, January 1st, 1927 ...	4,671
„ „ admitted during 1927 ...	10,270
Total supplied during 1927 ...	14,941
Remaining on the books at the end of the year ...	4,024
Quarterly Average—January, February, March ...	4,692
„ „ April, May, June ...	4,389
„ „ July, August, September ...	3,907
„ „ October, November, December ...	4,351

The highest number being supplied with milk at one time was 4,778 during the week ended March 12th.

Since the initiation of the scheme in 1901 down to the year 1916 the number of infants fed at sterilised milk depôts was 37,827, and during the last eleven 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; 1927, 10,270; a total of 160,196.

The number of attendances of persons at the centres during the year for advice, and payment for milk, etc., was 19,027.

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 5,634. From time to time information concerning cases is received from the district health visitors and clinics.

DRIED MILK.

The number of infants fed on dried milk during the year was 2,088, and in addition dried milk was issued for supplementary feeds to 548 infants, making a total of infants fed on dried milk of 2,636.

The number remaining on the books at the end of the year was 669.

The quantity of dried milk used was $52,767\frac{3}{4}$ 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 visiting these cases in their homes.

Attending the ante-natal clinics where cutting out, sewing and knitting classes are held to enable and encourage the mothers to make suitable provision for themselves and their expected infants, similar classes are held at the post-natal clinics, all being well attended by the mothers.

Visiting homes where births have been notified under the Notification of Births Act.

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

Visits to cases of measles, whooping cough, influenza, pneumonia and infantile diarrhœa, and carrying out home nursing in certain cases where necessary.

Dealing with aged and infirm persons found to be living in a dirty and verminous condition.

Re-visits to women and children notified to be suffering from phthisis.

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

Attendance at minor ailments clinics for school children.

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

Visits to neglected and verminous school children supervising 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 considerable assistance to the Housing Department in investigating the home conditions of those applying for houses, so that the most pressing cases should receive early consideration.

Special visits are paid to cases referred from the various voluntary organisations in the City, 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, etc.

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

First visits	...	...	...	...	...	942
Total visits	...	...	...	...	...	1,104
Attendances at ante-natal clinics—new cases	...	...	...	...	...	7,079
Total number of attendances during the year	...	...	...	...	...	30,669
Attendances of mothers at classes	...	...	...	...	...	3,563

NOTIFICATION OF BIRTHS ACTS, 1907 AND 1913.

Number of births visited during the year	...	...	...	...	19,104
Re-visits to births during the year	...	...	...	...	44,752
Re-visits to infants up to 5 years of age	...	...	...	...	33,316

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	...	...	...	...	6,401
Conditions of health on admission—					
Good	...	...	...	...	4,056
Fair (under average)	...	...	...	...	1,536
Delicate	...	...	...	...	809—6,401
Method of feeding on admission—					
Breast fed entirely	...	...	...	...	4,094
Partly breast fed	...	...	...	...	591
Artificially fed entirely	...	...	...	...	1,716—6,401
Total attendances for year at all Centres	...	...	...	...	92,327

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

OTHER VISITS.

Visits to cases and home nursing of Measles	...	...	17,154
" " " " Whooping Cough	...	...	524
" " of Influenzal Pneumonia	...	...	2,397
" " " Infantile Diarrhœa	...	...	1,555
Re-visits to Phthisis cases amongst women and children...			7,950

Attendances of health visitors at school medical inspections and following-up in the homes cases of physical defects, verminous and neglected children 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	...	...	...	8,658
" hours spent in schools	...	...	...	15,412
" children inspected in schools	...	...	...	47,774
" children re-inspected in schools	...	...	...	134,169
" dental inspections in school	...	...	...	55,613
" home visits to cases of physical defects	...	...	...	7,450
" home visits to neglected and verminous school children	...	...	...	23,095
" home visits to school children suffering from infectious skin diseases, etc.	...	...	...	1,418

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

Number of visits to school clinics	...	...	...	6,188
" hours spent at school clinics	...	...	...	23,576
" children seen at school clinics	...	...	...	252,516

DAY NURSERIES.

The Liverpool Day Nurseries are eight in number, six 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 or 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 attendances at the day nurseries are as follows:—

	Attendances.
1.—264, Westminster Road	11,433
2.—18, Gt. George Square	8,424
3.—407, Edge Lane (Day and Resident)	12,232
4.—141 and 143, Smithdown Lane	9,007
5.—Banks Road, Garston	7,131
6.—63, Everton Road	10,076
7.—61, Shaw Street	8,075

The total number of children admitted into the resident nursery at Elms House from January to December, 1927, was 107.

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

13	“	“	“	going into convalescent homes.
6	“	“	“	going into sanatoria.
30	“	“	“	ill in hospital.
5	“	“	“	ill at home.
3	“	“	“	doing temporary work away from home.
3	“	“	“	had died.

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 1927, 8 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 13 registrations cancelled owing to removal, leaving 73 on the register at the end of the year.

Number of rooms registered in the 73 homes containing

204 beds	144
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Additional rooms registered in cases of emergency	36
---	-----	----

In registered lying-in homes an additional bed was allowed

in an emergency	3
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Number of still-births which took place in the above homes...	15
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„	live births	„	„	„	...	433
---	-------------	---	---	---	-----	-----

„	legitimate births	„	„	„	...	391
---	-------------------	---	---	---	-----	-----

„	illegitimate births	„	„	„	...	42
---	---------------------	---	---	---	-----	----

„	twin deliveries	„	„	„	...	7
---	-----------------	---	---	---	-----	---

„	deaths of children	„	„	„	...	3
---	--------------------	---	---	---	-----	---

The death of a patient	„	„	„	...	1
------------------------	---	---	---	-----	---

The number of visits paid to lying-in homes during the year was 299.

INFECTIOUS DISEASE IN SCHOOLS.

During the year 1927 the notifiable infectious diseases were less prevalent than in recent years, measles, chickenpox and diphtheria being the most prevalent infections; 8,750 cases amongst children of school age being reported, the numbers in 1926, 1925, 1924 and 1923 having been 10,832, 11,941, 8,630 and 11,523, respectively. On the other hand a severe epidemic of influenza occurred in the first quarter of the year, causing 418 deaths in that period, of which 88 occurred during the fortnight ended March 5th, and severely affecting a large number of schools. This necessitated the closure of the whole school in ten instances, of the infants' department in 32 cases, and of some portion of the school in a further five instances, in all cases during the month of February or early in March.

In 15 instances infants' departments had to be closed (for measles, 8; whooping cough, 5; measles and whooping cough, 2; either alone or in association with other infectious diseases), whilst in six instances closure of one or more classes was resorted to. On one occasion 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, and in cases where two diseases are present this method is not suitable. 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 not very prevalent in schools during the year, 3,801 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. Whooping cough became prevalent shortly before Christmas.

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 :—

PUBLIC ELEMENTARY SCHOOLS.

				<u>1927.</u>
Number of visits to schools	...	...	...	2,308
„ found incorrect	...	...	...	23
„ of notices issued <i>re</i> defects	...	...	...	23

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; 8,204 cards were sent during the year, as against 8,757 in the preceding year.

CO-OPERATION WITH EDUCATION DEPARTMENT.

References from Education Department	...	7,502
References to Education Department	...	18,304
Schools cases investigated or followed up	...	807

TUBERCULOSIS.

NOTIFICATION.

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

Summary of Notifications during the period from 2nd January, 1927,
to 31st December, 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	6	52	120	85	113	103	213	224	182	123	38	1,259	1,532
Females	6	40	110	112	121	133	220	131	97	38	24	1,032	1,221
Non-Pulmonary—													
Males	9	79	83	43	24	22	17	13	8	4	3	305	347
Females	14	46	45	41	35	27	30	22	5	3	5	273	299

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	—	—	—	—	—	23	115
Females	—	1	—	1	1	2	69
Non-Pulmonary—							
Males	—	3	1	4	4	2	—
Females	—	—	2	2	2	—	6

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 39 per cent. of the new pulmonary cases examined by the Tuberculosis Officers were in an advanced stage of disease, that 21 per cent. of them were deceased before the termination of the year, and that out of 1,125 deaths from all forms of tuberculosis enquired into, 231 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 whom this disease is suspected;
- (b) Centres for the observation of doubtful cases;
- (c) Centres for the examination of contacts;
- (d) Centres for the treatment of patients who cannot be more suitably treated at home or in an institution;
- (e) Centres for the supervision of arrested and quiescent cases;
- (f) 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 to cases whose names are on the dispensary registers;
- (g) 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 1. It is noteworthy that a definite diagnosis

was made in each of 3,220 new patients (exclusive of contacts), of whom 1,562 were considered to be suffering from a disability which was not tuberculous in nature, and treatment at the public expense was not granted. This rejection rate of 49 per cent. is a measure of the protection of the sanatorium accommodation from wrongful use.

TABLE 1

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	33	1,130	1,163	541	62	453	27	47
Female	9	971	980	445	82	360	28	56
•Children—Male	14	756	770	108	181	414	31	22
Female	15	618	633	119	120	335	26	18
"Contacts" examined during the year—								
Adults—Male	—	30	30	5	—	25	—	—
Female	—	67	67	4	1	62	—	—
•Children—Male	—	129	129	4	2	122	—	1
Female	—	138	138	5	2	130	—	1
TOTALS	71	3,839	3,910	1,231	450	1,901	112	145
Insured Persons (included above)—								
Male ...	21	845	866	449	40	295	24	37
Female	2	510	512	252	33	184	15	26

* Under 15 years of age.

DIAGNOSIS.

The chief aids to diagnosis in doubtful cases were :—

- (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.

Use has been made of examination by X-ray in cases in which there were diagnostic difficulties. During the year 177 cases were so examined, with the result that in 117 cases the evidence was in favour of a tuberculous infection, in 24 cases was against the presence of this disease, and in 36 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 1,634 admissions to sanatoria and hospitals only ten patients were considered subsequently to be non-tuberculous, is an 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.

TERMS USED TO DESCRIBE THE RESULTS OF TREATMENT.

- (1) "Cured."—Cases in which the disease has been arrested for a period of three years.
- (2) "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.
- (3) "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.
- (4) "Improved."—Cases short of "quiescent," in which the general health is fair and the symptoms of tuberculosis have materially diminished.
- (5) "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 1,231 new pulmonary cases accepted during the year 483 (39 per cent.) were in a very advanced stage of disease. By the end of the year 267 (21 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.

Condition at the time of the last record made during the year 1927.				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.				Cases arising in 1927.						
				CLASS T.B. PLUS.				CLASS T.B. PLUS.				CLASS T.B. PLUS.				CLASS T.B. PLUS.				CLASS T.B. PLUS.				CLASS T.B. PLUS.				CLASS T.B. PLUS.						
				CLASS T.B. MINUS.	Group 1	Group 2	Group 3	Total Class T.B. PLUS.	CLASS T.B. MINUS.	Group 1	Group 2	Group 3	Total Class T.B. PLUS.	CLASS T.B. MINUS.	Group 1	Group 2	Group 3	Total Class T.B. PLUS.	CLASS T.B. MINUS.	Group 1	Group 2	Group 3	Total Class T.B. PLUS.	CLASS T.B. MINUS.	Group 1	Group 2	Group 3	Total Class T.B. PLUS.	CLASS T.B. MINUS.	Group 1	Group 2	Group 3	Total Class T.B. PLUS.	
ALIVE.	DISCHARGED AS CURED.	Adults	M	75	6	...	...	6	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			F	75	1	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Child- ren	M	38	
			F	32	
	DISEASE ARRESTED.	Adults	M	115	27	2	...	29	26	1	...	...	1	20	...	...	...	...	13	2	...	...	2	4	1	1	...	2	...	...	...	...
			F	93	6	...	...	6	30	1	1	...	2	20	...	...	...	...	22	...	...	...	6	...	...	...	...	...	...	...	...	...
		Child- ren	M	50	...	1	...	1	29	...	...	...	...	34	1	...	...	1	20	...	...	...	8	...	...	...	...	...	...	...	...	...
			F	55	1	...	...	1	28	...	...	...	...	33	...	1	...	1	12	...	...	...	4	...	...	...	...	...	...	...	...	...
	DISEASE NOT ARRESTED.	Adults	M	168	92	55	15	162	30	13	11	2	26	47	24	12	1	37	51	17	22	5	44	51	16	52	2	70	104	26	68	14	108	
			F	88	37	22	2	61	24	8	9	2	19	38	13	5	...	18	53	9	16	1	26	94	7	31	4	42	88	7	37	9	53	
			M	53	...	1	...	1	13	1	1	27	53	...	1	...	1	64	1	1	65	1	...	1	2	
		Child- ren	F	50	3	4	1	8	19	1	...	1	2	31	...	1	...	1	51	1	1	67	57	...	2	1	3	
CONDITION NOT ASCERTAINED DURING THE YEAR.			287	80	54	20	154	97	36	19	10	65	93	20	16	1	37	169	32	19	4	55	154	10	50	...	60	147	9	63	7	79		
LOST SIGHT OF OR OTHERWISE REMOVED FROM DISPENSARY REGISTER...			2,193	187	55	11	253	238	25	22	8	55	195	33	25	3	61	209	19	20	1	40	134	11	31	5	47	91	13	26	4	43		
DEAD	Adults	M	180*	158	171	291	620*	60	98	108	108	314	76	86	105	75	266	91	58	117	64	239	70	10	151	100	261	62	12	86	89	187		
		F	102*	57	61	186	304*	38	71	82	73	226	85	54	71	75	200	81	38	97	53	188	62	5	96	63	164	44	2	67	59	128		
	Child- ren	M	16*	1	5	7	13*	18	2	...	2	4	20	2	2	...	4	15	1	1	...	2	22	...	1	2	3	17	...	...	2	2
		F	10*	2	5	10	17*	18	3	2	13	18	29	2	5	2	9	21	2	1	4	7	19	...	2	3	5	15	...	5	3	8		
TOTALS...				...	3,680	658	436	543	1,637	672	260	254	219	733	748	235	243	157	635	861	179	294	132	605	759	60	415	180	655	690	70	354	189	613

* 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 1927.		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.					Cases arising in 1927.				
		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	Bones and Joints	Abdominal	Other Organs	Peripheral Glands	TOTAL					
		Adults	Child- ren	Adults	Child- ren	Adults	Child- ren	Adults	Child- ren	Adults	Child- ren	Adults	Child- ren	Adults	Child- ren	Adults	Child- ren	Adults	Child- ren	Adults	Child- ren	Adults	Child- ren	Adults	Child- ren	Adults	Child- ren	Adults	Child- ren	Adults	Child- ren	Adults	Child- ren	Adults	Child- ren	Adults	Child- ren				
ALIVE.	DISCHARGED AS CURED.	M	3	...	...	...	3	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		F	1	...	...	...	1	1	...	...	...	1	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		M	3	2	1	4	10	...	2	...	2	4	2	2	...	...	4	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		F	1	2	...	4	7	1	1	...	1	3	4	1	...	...	5	3	...	...	1	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	DISEASE ARRESTED.	M	8	1	4	8	21	6	...	2	4	12	7	2	3	...	12	1	1	2	2	6	3	1	2	1	7	2	...	3	4	9	1	...	...	...	1	
		F	16	3	4	20	43	1	...	...	9	10	7	...	1	7	15	3	5	1	11	20	4	1	...	9	14	4	2	...	6	12	1	...	1	...	2		
		M	31	20	4	24	79	23	20	...	18	61	15	14	3	22	54	13	16	2	28	59	9	25	2	16	52	23	13	2	10	48	5	2	...	1	8				
		F	27	23	1	39	90	17	6	2	21	46	13	10	1	24	48	12	12	...	29	53	18	9	3	27	57	17	4	1	12	34	3	...	1	...	4				
	DISEASE NOT ARRESTED.	M	9	2	...	...	11	2	...	...	1	3	5	...	1	...	6	6	1	2	9	18	4	1	1	4	10	4	1	3	6	14	21	7	9	15	52
		F	7	...	1	6	14	3	1	...	2	6*	4	...	...	4	8	1	...	2	1	4	4	1	...	9	14	8	6	2	10	26	25	4	13	31	73		
		M	9	2	...	5	16	2	1	...	3	6	4	1	1	6	12	5	5	3	5	18	6	14	1	7	28	15	28	4	26	73	42	50	7	59	158				
		F	9	2	3	7	21	4	1	...	3	8	3	3	1	9	16	8	3	...	13	24	7	5	...	13	25	6	13	7	32	58	25	21	12	39	97				
	TRANSFERRED TO PULMONARY ...		...	...	...	...	1	1	...	...	2	3	1	1	...	2	4	...	1	...	1	2	1	1	...	2	4	2	...	1	1	4	...	...	...	...	...
	CONDITION NOT ASCERTAINED DURING THE YEAR.	21	10	4	20	55	13	3	4	10	30	14	3	3	8	28	14	7	4	21	46	14	15	2	30	61	38	13	2	46	99			
	LOST SIGHT OF OR OTHERWISE REMOVED FROM DISPENSARY REGISTER...		...	174	91	29	248	542	27	22	13	59	121	46	27	9	73	155	38	33	13	77	161	24	28	10	78	140	15	22	5	44	86	6	4	3	15	28			
DEAD.	Adults	M	19	2	4	1	26*	5	5	5	2	17	10	2	1	1	14	4	3	2	2	11	5	2	2	3	12	4	1	1	1	7	4	...	...	...	4	
		F	11	2	3	1	17*	4	1	1	1	7	6	5	3	2	16	7	...	3	2	12	4	4	...	1	9	1	5	3	1	10	2	1	...	...	3		
	Child- ren	M	5	5	3	2	15*	4	8	2	2	16	4	8	6	1	19	7	10	6	3	26	3	7	7	2	19	4	8	4	...	16	...	2	5	...	7				
		F	5	3	1	2	11*	4	9	14	1	28	6	10	9	...	25	5	8	8	1	22	2	10	9	1	22	4	9	9	...	22	2	4	7	...	13				
TOTALS...		...	359	170	62	392	983	118	80	43	142	383	151	89	42	160	442	127	106	48	206	487	108	124	39	203	474	147	125	47	199	518	137	95	58	160	459				

* 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...	1,990	1,384	540	580	186	256	591	500
Beginning for the first time under Public Medical Treatment...	546	449	112	124	62	83	183	122
Resuming Public Medical Treatment	130	100	30	46	25	13	24	22
TOTALS (1)	2,666	1,933	682	750	273	352	798	644
Discharged as no longer requiring either treatment or supervision	41	30	6	—	1	2	12	12
Transferred to other areas	24	22	8	6	4	4	5	3
Leaving Public Medical Treatment	141	57	33	77	15	37	125	83
Lost sight of	51	44	11	29	6	11	28	16
Deceased	423	276	26	39	10	13	13	19
Remaining under treatment or supervision on Dec. 31st including patients in sanatorium	1,986	1,504	598	599	237	285	615	511
TOTALS (2)	2,666	1,933	682	750	273	352	798	644

1. Number of attendances of patients (including contacts) at the dispensaries	Insured	6,577	7. Number of domiciliary reports received during the year in respect of patients under treatment at home.	
	Non-insured	11,159	(a) Insured persons	5,048
			(b) Non-insured persons	4,134
2. Number of cases in which the period of observation for the purpose of diagnosis exceeded two months	Nil		8. Number of patients to whom dental treatment was given, at or in connection with the dispensaries	Nil
3. Number of consultations with medical practitioners:—			9. Number of	
(a) At the homes of patients	635		(a) Specimens of sputum, etc., examined	3,938
(b) Otherwise	3,580		(b) X-Ray Examinations made in connection with dispensary work	177
4. Number of other visits paid by tuberculosis Officers to the homes of patients	354		10. Number of reports rendered to the School Medical Department	3,553
5. Number of visits paid by nurses or health visitors to the homes of patients for dispensary purposes	44,439		11. Number of reports rendered to the Ministry of Pensions	1,518
6. Number of patients under domiciliary treatment on December 31st	Insured 1,282 Non-insured 849			

* 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	4	—	4
	Female	2	1	3
NON-INSURED PERSONS	Male Adults	8	5	13
	Female Adults	29	7	36
	Male Children*	42	23	65
	Female Children*	41	19	60
TOTALS ...	... ..	126	55	181

* 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	439	103	542
	Female	204	76	280
NON-INSURED PERSONS	Male Adults	98	49	147
	Female Adults	361	127	488
	Male Children*	407	443	850
	Female Children*	372	399	771
TOTALS ...	... ..	1881	1197	3078

* 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, 179 pulmonary and 144 non-pulmonary cases were nursed in their homes, and to these cases 13,753 visits were paid.

Extra nourishment is granted to patients who needed it as a part of their treatment and who 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 134 patients were in receipt of extra nourishment, involving the daily provision of 139 pints of milk and 15 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, 2,131 patients remained under domiciliary treatment, of which 1,282 were persons insured under the National Health Insurance Act, and were in receipt of treatment from their panel doctors, and 849 were not insured, and were under the treatment of doctors of their own choice. The domiciliary reports received relating to insured persons numbered 5,048, and those relating to non-insured persons numbered 4,134. Table VII shows the position at end of the year.

TABLE VII.

PATIENTS UNDER DOMICILIARY TREATMENT AT THE END OF THE YEAR.

		Pulmonary.	Non-pulmonary.	Totals.
INSURED PERSONS	Male	963	25	988
	Female	273	21	294
NON-INSURED PERSONS	Male Adults ...	125	7	132
	Female Adults ...	419	37	456
	Male Children*	93	46	139
	Female Children*	92	30	122
TOTALS ...	... ..	1965	166	2131

* Under 15 years of age.

The arrangements for 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	...	...	...	...	...	83
Extractions under gas	...	...	...	...	...	3
Extractions under local anæsthetic	...	...	...	...	...	395
Extractions without an anæsthetic	...	...	...	...	...	6
Miscellaneous	...	...	...	...	...	58

The miscellaneous work includes scaling, 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 either 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, together with information in accordance with the statistical requirements of memorandum 37/T.

Co-operation between the Ministry of Pensions and the Tuberculosis Officers continues, and during the year 1,518 reports were completed in reference to tuberculous pensioners.

The Liverpool Hospital for Children at Leasowe 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, the Royal Liverpool Children's Hospital, and the Hahnemann Hospital, whereby the latter accept for treatment surgical cases and, except in the case of the Hahnemann Hospital, 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 3,553 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, and Barrowmore Hall.

HOSPITALS :—The Royal Infirmary, the Royal Southern Hospital, the David Lewis Northern Hospital, the Stanley Hospital, the Hahnemann 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
TOTAL ...	14	158	84	53	26	335

See also page 141.

HIGHFIELD SANATORIUM. Beds, 336.

(Now Broadgreen Sanatorium.)

Staff:—Medical Superintendent, Consulting Surgeon, 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 141.

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	229	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.
NUMBER OF PATIENTS :—					
Adults—Male					
Pulm. ...	352	674	532	145	349
Non-pulm. ...	43	59	48	6	48
Female					
Pulm. ...	200	379	289	74	216
Non-pulm. ...	22	66	67	5	16
Children*—Male					
Pulm. ...	46	74	56	8	56
Non-pulm.	93	169	151	8	103
Female					
Pulm. ...	94	96	86	10	94
Non-pulm.	75	102	107	7	63
NUMBER OF OBSERVATION CASES :—					
Adults—Male ...	—	5	5	—	—
Female ...	—	4	4	—	—
Children*—Male ...	—	3	3	—	—
Female ...	—	3	3	—	—
TOTALS	925	1,634	1,351	263	945

* Under 15 years of age.

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 1927 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 1927.

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 ...	15	1	14	12	—	—	—	—	2	801	85·7%
Tuberculous disease of the hip ...	15	2	13	10	—	1	—	—	2	646	76·9%
Tuberculous disease of the knee ...	11	—	11	10	—	—	—	—	1	409	90·9%
Tuberculous osteitis ...	33	—	33	32	—	1	—	—	—	596	96·9%
Tuberculous adenitis	31	—	31	28	—	3	—	—	—	267	90·3%
Tuberculous peritonitis ...	45	—	45	40	—	1	—	1	3	252	88·9%
Lupus ...	2	—	2	—	2	—	—	—	—	162	—
TOTALS ...	152	3	149	132	2	6	—	1	8	438	88·6%

The 132 patients discharged with the disease quiescent represent 88·6 per cent. of all tuberculous cases treated and 92·3 per cent. of the tuberculous cases treated to completion.

Commencing April, 1927, research has been undertaken in an endeavour to secure some more accurate means of judging the response to artificial light than that given by clinical observation alone.

The methods adopted were:—

- (1) The sedimentation rate of erythrocytes;
- (2) Records of blood pressure variations;
- (3) The administration of suprarenal gland;
- (4) Investigation of the variations in carbohydrate metabolism.

The conclusions drawn from the investigations may be summarised briefly as follows:—

- (1) A series of sedimentation rates is of value in recording progress and in controlling dosage;
- (2) A rise in blood pressure associated with a delay in the rate of fall of erythrocytes was observed in cases reacting satisfactorily to "light";
- (3) The administration of suprarenal gland appears to supply a want in some cases, facilitates the exposure to "light" and increases the benefits accruing therefrom.
- (4) Carbohydrate tolerance was increased following exposure to ultra-violet radiation.

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	1927	
19 ...	84	89%	86.9%	86%	...	...	...	...	...	80%
20 ...	86	...	90%	88%	89.5%	...	...	...	...	79%
21 ...	90	...	...	90%	84%	86.7%	...	...	...	81%
22 ...	77	...	...	...	85.8%	85.8%	85.8%	...	...	74%
23 ...	81	...	...	...	...	95%	91%	91%	...	80%
24 ...	80	...	...	...	...	...	87%	87%	90%	76%
25 ...	86	...	...	...	...	...	...	94%	89%	86.5%
26 ...	110	...	...	...	...	...	...	...	89%	89%

Table C shows the average length of stay of cases which, on discharge, were quiescent and gives a comparison with similar cases discharged during the years 1919-1926.

TABLE C.

			Cases discharged in 1927.			Cases discharged 1919-1926.		
			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	...	14	801	85.7%	155	719	61.9%	
„ hip	...	13	646	76.9%	98	695	89.8%	
„ knee	...	11	409	90.9%	69	496	88.4%	
„ osteitis	...	33	596	96.9%	239	469	83.7%	
„ adenitis	...	31	267	90.3%	124	233	91.9%	
„ peritonitis	...	45	252	88.9%	160	209	73.7%	
Lupus	...	2	162	—	13	228	23.0%	

THE SANATORIUM WAITING LIST.

The number of patients waiting to enter a sanatorium at the end of each quarter from 1917 to 1927 is given in Table X :—

TABLE X.

	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.
March 31st ...	361	302	441	77	264	17	67	207	184	195	83
June 30th	442	425	328	131	325	58	135	251	202	201	83
September 30th	422	430	140	173	171	45	120	218	127	160	149
December 31st	265	549	163	190	47	65	132	156	90	77	92

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, etc.

During the year the nurses attached to the Tuberculosis Institutes made 12,318 home visits. The health visitors and sanitary inspectors made 18,368 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 13,753, have already been referred to.

LEGISLATION AND REGULATIONS.

PUBLIC HEALTH ACT, 1925.

Section 62 of the Public Health Act, 1925, gives 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 supervision, 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 535 new cases of non-pulmonary tuberculosis arising during 1927, with the following results:—

Ward.	Cases.	Rate per 10,000.	Average for previous 5 years.
Scotland	29	6.3	7.6
Exchange	46	12.9	13.7
Abercromby	35	7.7	8.2
Everton	93	7.5	8.7
Kirkdale	35	5.2	10.0
Edge Hill	49	5.3	8.3
Toxteth	72	6.5	6.2
Walton	40	4.2	6.8
West Derby East	55	5.8	7.3
Wavertree	27	2.9	6.9
Sefton Park	12	3.8	3.5
Garston	20	6.2	6.5
Fazakerley	7	6.5	3.7
Woolton	12	16.5	7.3
Emigrants, &c.	3	—	—
Whole city	535	6.25	7.76

There is again a well-marked decrease in the notifications of non-pulmonary tuberculosis from 631 in 1926 to 537 in 1927. This decrease affects equally the bones and joints, the abdominal and peripheral glandular sites, but not other situations. The decrease in the number of notifications affects the city generally, except in West Derby, Fazakerley and Woolton, where the population is rapidly increasing.

The following figures summarise the notifications of cases of non-pulmonary tuberculosis for the past seven years (1921-27), 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. No history of exposure.	Group B. History of exposure.	Proportion of total expressed as a percentage.	
			Group A.	Group B.
Bones and joints	974	89	24·3%	19·3%
Abdominal	859	116	21·4%	25·1%
Peripheral glands	1277	156	31·9%	33·8%
Meninges and brain	418	61	10·4%	13·2%
Skin	124	15	3·1%	3·2%
Urino-genital	92	3	2·3%	0·7%
Other sites and ill-defined	264	21	6·5%	4·6%
Totals	4008	461		

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, 1925 and 1926.

TABLE XI.

Yr	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.	
13	1,239	278	81	78	166	148	108	380	768
14	1,207	249	68	88	166	139	126	371	757
15	1,218	273	84	81	168	127	128	357	737
16	1,203	200	78	58	166	118	147	436	807
17	1,125	231	85	66	144	105	103	391	728

It is noteworthy that a considerable proportion of the cases (20·5 per cent.) were not reported until death had taken place, and an additional 14·3 per cent. were only notified within a month of death. 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 1927, 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.

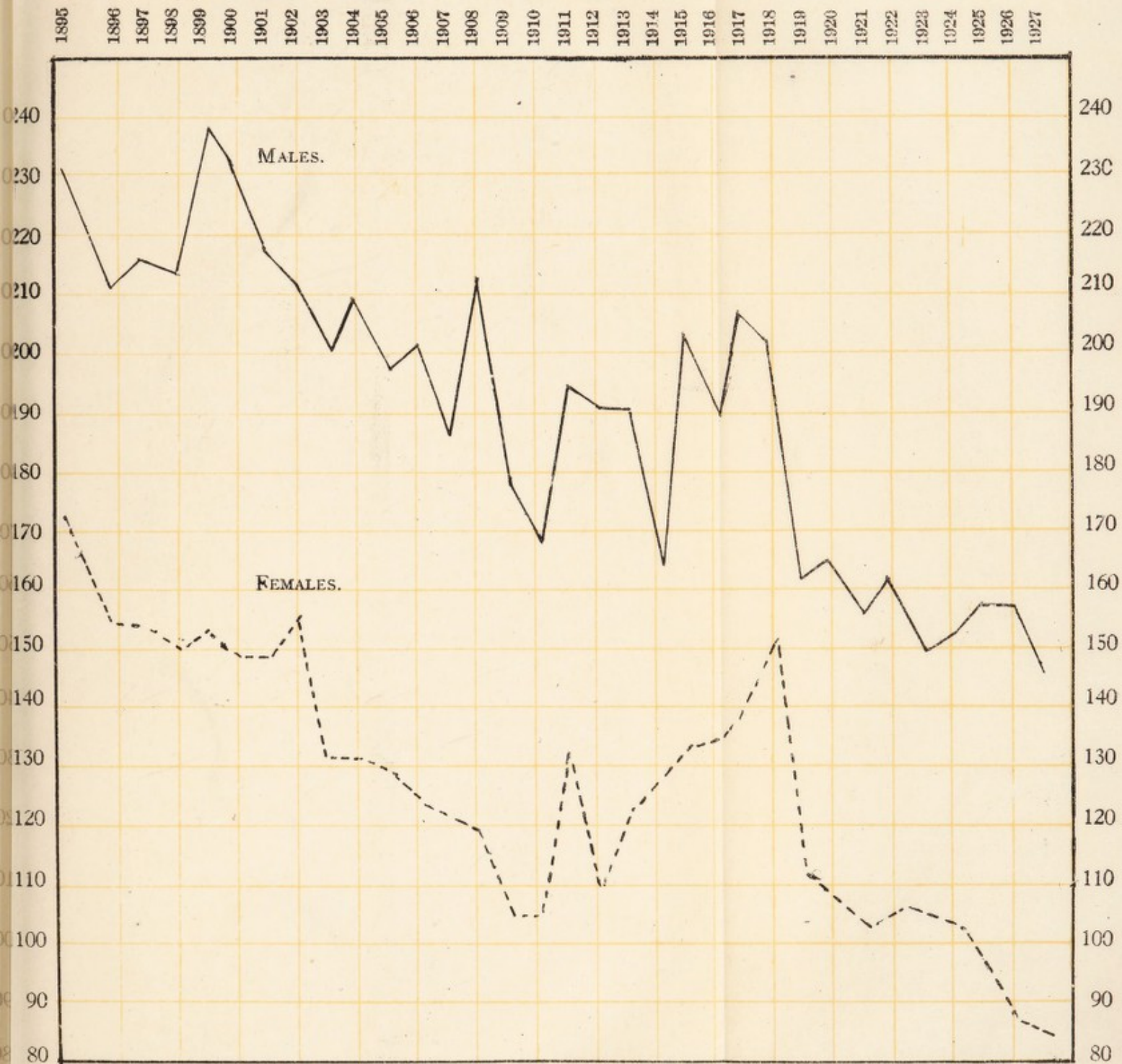
Years.	Cases notified.	Number of deaths.	Death rate per 1,000 Liverpool.	Death rate per 1,000 England and Wales
1871 to 1880	Average yearly figures	Nil	1,506	2.90
1881 to 1890		Nil	1,260	2.35
1891 to 1900		Nil	1,171	1.92
1901 to 1910		2,216*	1,233	1.68
1911 to 1920		2,812*	1,214	1.55
1921.....	2,164	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	0.73
1927.....	2,291	975	1.14	—

* 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

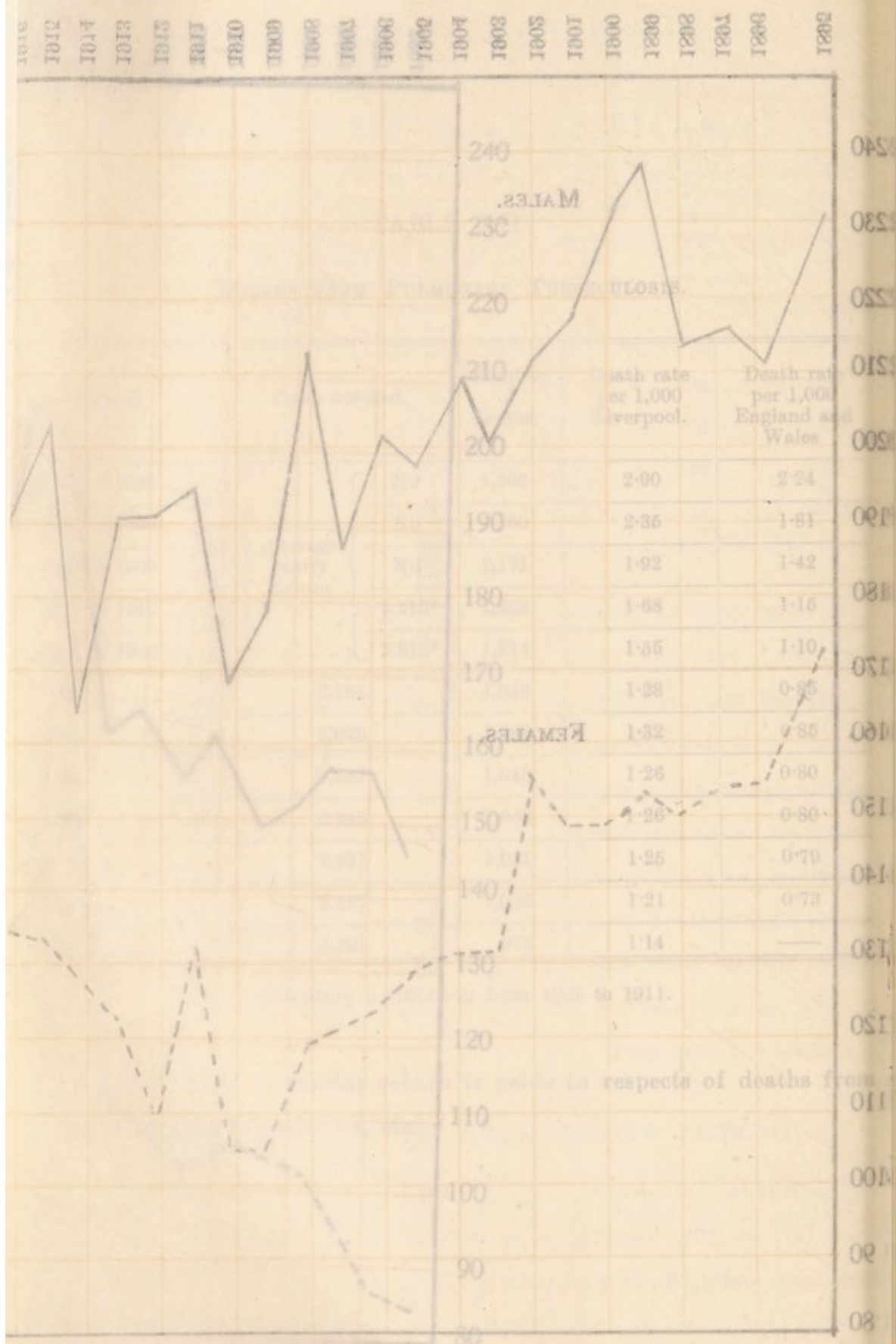


TABLE XIII.
DEATHS FROM NON-PULMONARY TUBERCULOSIS.

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	·65
1881 to 1890		Nil	527	·98	·64
1891 to 1900		Nil	500	·82	·61
1901 to 1910		100*	416	·56	·49
1911 to 1920		716*	349	·45	·37
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	·18	
1927.....	578	204	·24	—	

* 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	1	3	12	8
1—5	13	17	35	30
5—10	4	6	15	16
10—15	11	11	7	5
15—20	32	55	8	9
20—25	58	68	7	10
25—35	102	76	5	3
35—45	132	60	4	4
45—55	150	58	11	7
55—65	69	15	3	2
65 and upwards	24	10	1	2
TOTALS ...	596	379	108	96

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 1927.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total
Exchange	35	23	24	18	16	5	21	19	96	65	161
Abercromby	14	6	9	8	7	5	13	8	43	27	70
Everton	37	16	28	13	16	10	23	18	104	57	161
Kirkdale	9	15	12	10	14	8	8	8	43	41	84
Edge Hill	13	9	11	8	8	2	9	8	41	27	68
Toxteth	23	10	16	8	15	9	16	9	70	36	106
Walton	18	13	12	13	12	8	16	9	58	43	101
West Derby (East) ..	21	10	20	11	10	9	9	8	60	38	98
Wavertree	15	10	18	14	9	4	15	4	57	32	89
Toxteth (East)	8	1	2	—	...	2	5	3	15	6	21
Fazakerley	1	...	1	1	2	1	2	2	6	4	10
Woolton	2	2	...	...	1	1	...	...	3	3	6
City	196	115	153	104	110	64	137	96	596	379	975

N.B.—Deaths in public institutions are transferred to the districts 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 1927.		
	M.	F.	M.	F.	M.	F.	M.	F.	T.
Exchange	1	2	6	4	6	2	13	8	21
Abercromby... ..	2	1	3	1	5	4	10	6	16
Everton	4	4	8	6	6	9	18	19	37
Kirkdale	3	...	5	5	3	2	11	7	18
Edge Hill	1	4	4	2	2	1	7	7	14
Toxteth	4	2	6	2	7	11	17	15	32
Walton	2	...	5	8	5	2	12	10	22
West Derby (East)	1	1	6	4	4	2	11	7	18
Wavertree ... ..	..	3	2	2	4	4	6	9	15
Toxteth (East)	1	2	1	3	1	1	2	6	9
Fazakerley... ..	...	...	...	1	...	...	...	1	1
Woolton ... ..	...	...	...	...	...	1	...	1	1
City	19	19	46	38	43	39	108	96	204

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

VENEREAL DISEASES.

As in previous years the work of the prevention and treatment of venereal diseases has been continued with the co-operation of various general hospitals in the city.

It is now several years since the scheme was inaugurated, and all the facilities afforded for treatment have been fully utilised. There were 4,406 new cases, male and female, and the total attendances, including the seamen's dispensary (49,834) were 104,581, representing an increase of over 11,000 on the previous year. The numbers of cases and attendances at the two main centres have shown a steady increase for some time, the greatest being at the seamen's dispensary, where there were 8,000 attendances more than the previous year.

The value of a whole-time clinic such as the seamen's dispensary, which is entirely devoted to the subject, has again been demonstrated. This clinic is run by one whole-time medical officer, but it is felt that some extra assistance may shortly be necessary to meet the ever-increasing demands.

In-patients are treated at one or two of the general hospitals, and it is always necessary to have beds available for cases requiring hospital treatment.

The average number of attendances per patient shows an increase over previous years, and the number of those who cease to attend before completion of cure has somewhat decreased, although there is still a large number of these defaulters. In this connection, experience has shown that it is the close personal touch with the patient and the interest shown in his or her case which stimulates the sufferer to continue treatment, especially in some cases where a long period is required to complete the cure.

An analysis of the figures of the various types of venereal disease reported at the principal clinics is as follows:—

	Percentage of total cases.					
Syphilis	38·4
Soft chancre	2·9
Gonorrhœa	46·1
Conditions other than venereal disease	12·6

Many suffering from gonorrhœa unfortunately do not report for treatment until a few weeks have elapsed, in some instances this may be due to the nature of their employment, such as absence on ship at sea. Those of local residence can and do come under treatment at an earlier stage, and probably 10 per cent. of the gonorrhœa cases are seen in the early stage, but 90 per cent. show a well-established state of the disease before presenting themselves.

Whilst the seamen's dispensary is naturally made use of largely by seamen, many other classes also make use of the facilities there. In accordance with the wishes of the Ministry of Health, evening clinics are now held twice weekly at the dispensary, only those patients who can satisfy the medical officer that they cannot attend during the day being treated.

RETURN SHOWING THE NUMBER OF **NEW CASES** ATTENDING
THE VENEREAL DISEASES CLINICS DURING THE YEAR 1927.
ALSO **TOTAL ATTENDANCES AND IN-PATIENT DAYS OF OLD AND
NEW PATIENTS** DURING SAME PERIOD.

	Seamen's Dispensary. Males only.	Royal Infirmary. Males and Females.	Royal Southern Hospital. Males and Females.	David Lewis Northern Hospital. Males and Females.	Stanley Hospital. Males and Females.	Edge Lane Medical Home. Females.	TOTAL. Males and Females.
New cases ...	1,842	1,363	515	349	281	56	4,406
Old and new patients							
Total attendances	49,834	25,893	13,068	9,138	6,648	—	104,581
In-patient days	—	23	3,314	—	310	6,309	9,956

The occupations stated to be followed by patients attending the Royal Infirmary include seafaring people, and the number of patients of this class shows a remarkable falling off since 1924. It will be noticed from the following table that 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	Seamen's dispensary approximately 90%.	27,265
1926	1,360		41,720
1927	1,842		49,834

} Males
only.

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
1927	1,363	167	25,893

} Males
and
females.

SEAMEN'S DISPENSARY.

The value of a whole-time clinic devoted entirely to the diagnosis and treatment of venereal diseases has again been demonstrated by the further increase in the attendances at the above dispensary, as the following table shews:—

	1927	Increase over	
		1925	1926
New patients (including Non-venereal cases)	1,842	70%	35%
Old and new patients	2,642	100%	42%
Attendances*	55,063	100%	32%
Cures	421	100%	80%

* The largest number of attendances for any one day was 254, irrigations averaged 150 per diem, as against 100 last year, while the medical officer examined and treated as many as 112 patients in one day, compared with a maximum of 80 for 1926.

The classification of the persons suffering from venereal disease and dealt with at the clinic for the first time during the year, and also for the two previous years, was as under :—

	1925	1926	1927
Syphilis	293	444	459
Soft chancre	148	136	157
Gonorrhœa	636	780	931
	1,077	1,360	1,547

The average number of attendances per patient shews an increase over previous years.

The number of patients who cease to attend before completing their treatment is on the decrease.

These facts, together with the increased number of cures, indicate a growing appreciation of the value of the facilities afforded at the clinic, and of the extreme importance of continuing under treatment until cured.

EDUCATION AND PROPAGANDA.

The education of the public is now more advanced on the question of some form of control of infected persons who will not seek medical advice or who neglect to follow that advice, but there is still some unaccountable opposition from certain quarters to the introduction of these measures which are suggested solely for the prevention of the spread of the disease and protection of the public generally. Something more than persuasion is necessary in many instances.

The Ministry of Health in their inauguration of the scheme approved of certain educational work being conducted to acquaint the general public, and those likely to come in contact with venereal diseases, of the dangers arising therefrom, and after several years effort in Liverpool this has culminated in the merging of the various Merseyside boroughs into a scheme for this purpose, a committee of representatives from each area being formed. A medical man has been appointed as lecturer-organiser, and lectures and addresses are delivered in the district to the public generally, to seamen, to workmen at industrial concerns, boys' and girls' and other clubs, clergy, and others interested in the subject. These have been well attended and appreciated. The type of lecture varies according to the nature of the audience.

The lectures formerly given to cadets studying for the mercantile marine are now included in the first-aid course which they take for their examination, and are delivered by a medical man.

HOSTEL FOR WOMEN.

The arrangements with the Liverpool Diocesan Association instituted some years ago for the treatment of young women suffering from these diseases are producing gratifying results. New and larger premises have been acquired after inspection by officials of the Ministry of Health and the Corporation. The number of beds allocated for treatment purposes has been increased to 25. During the year 56 new patients were admitted, the number of in-patient days being 6,309.

There are very few hostels of this kind in the country, and there is no doubt that in Liverpool the home forms a very useful adjunct to the general scheme. The inmates in addition to receiving skilled treatment from a woman doctor attached to the home, benefit through the moral influences exercised by those controlling the establishment,

SERVICES RENDERED AT THE VENEREAL DISEASE TREATMENT CENTRES
DURING THE YEAR 1927.

	Syphilis.		Soft Chancre.		Gonorrhœa.		Conditions other than Venereal.		TOTAL.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1. Number of cases which— (a) at the beginning of the year under report were under treatment or observation for (b) had been marked off in a previous year as having ceased to attend or as transferred to other Centres, and which returned to the Treatment Centres during the year under report suffering from the same infection ...	1,173	608	72	...	1,447	394	153	35	2,845	1,037
TOTAL—Items 1 (a) and 1 (b) ...	1,280	635	73	...	1,524	405	157	35	3,034	1,075
2. (a) Number of cases dealt with at the Treatment Centres during the year for the first time	989	365	175	...	1,787	208	765	117	3,716	690
TOTAL*—Items 1 (a), 1 (b) and 2 (a)	2,269	1,000	248	...	3,311	613	922	152	6,750	1,765
2. (b) Number of cases included in Item 2 (a) known to have received previous treatment at other Centres for the same infection	122	31	5	...	168	12	...	...	295	43
3. Number of cases which ceased to attend— (a) before completing the first course of treatment for (b) after one or more courses but before completion of treatment for (c) after completion of treatment, but before final tests as to cure of ...	359	133	48	...	1,077	88	...	...	1,484	221
	291	123	...	...	...	...	...	...	291	123
	66	11	17	...	281	21	...	...	364	32

	Syphilis.		Soft Chancere.		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 ...	115	27	27	...	162	23	...	...	304	50
5. Number of cases discharged after completion of treatment and observation for ...	76	40	84	...	346	16	831	124	1,337	180
6. Number of cases which, at the end of the year under report, were under treatment or observation for ...	1,362	666	72	...	1,445	465	91	28	2,970	1,159
TOTAL*—Items 3, 4, 5 and 6	2,269	1,000	248	...	3,311	613	922	152	6,750	1,765
7. Out-patient attendances—										
(a) For individual attention by the Medical Officer ...	17,168	7,683	700	...	24,621	3,682	1,981	406	44,470	11,771
(b) For intermediate treatment, e.g., irrigation, dressings, etc. ...	1,249	556	1,135	...	44,580	748	72	...	47,036	1,304
TOTAL ATTENDANCES ...	18,417	8,239	1,835	...	69,201	4,430	2,053	406	91,506	13,075
8. Aggregate number of "In-patient days" of treatment given to persons who were suffering from ...	878	5,321	216	...	493	2,862	5	181	1,592	8,364
9. Examinations of Pathological material:—					For detection of					
(a) Specimens which were examined at, and by the Medical Officer of, the Treatment Centres ...	...	...	35	...	Gonococci.	3,073	...	Other Organisms.	...	...
(b) Specimens from persons attending at the Treatment Centres which were sent for examination to an approved laboratory ...	...	...	83	...	...	2,070	...	...	...	3,718

HOSPITAL ADMINISTRATION.

During the year 1927 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 (now Broadgreen) Sanatorium	...	...	...	...	336 „
					1,615 „

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 found to be occupying one or two rooms, and 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. This practice has been followed in previous years, and has in the past 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 15.

Beds were provided during the year for patients suffering from the following diseases, viz. :—Scarlet fever, diphtheria, measles, whooping cough, enteric fever, erysipelas, cerebro-spinal fever, encephalitis lethargica, anthrax, influenzal pneumonia and chickenpox.

The value of the hospitals, and the immense amount of useful work performed, is shown by the fact that no less than 6,489 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.

The total number of patients admitted to the Fazakerley Hospitals (excluding the Fazakerley Sanatorium) during the year ending 31st December, 1927, shows an increase of 91 as compared with that of 1926. The number of cases under treatment reached a maximum of 450 on 21st April, a decrease of 27 as compared with the highest figure for the previous year. The following figures represent the gross admissions:—

Fazakerley Isolation Hospital.	Fazakerley Annexe Hospital.	Sparrow Hall Hospital.	Total.
2,114	961	282	3,357

A considerable number of patients have been admitted suffering from diseases other than those classified in the scheduled tables. The increasing use to which the hospitals are being put in this respect, although placing at times a considerable strain upon the administrative resources of the hospitals, is an indication of the wide service rendered to the community. The cases treated during the year were as follows:

Disease.	Ad- mitted	Died	Disease.	Ad- mitted	Died
Anthrax	4	—	Broncho-Pneumonia ...	18	5
Adenitis (Lymphatic) ...	2	—	Burns	1	—
Adenitis (Suppurative) ...	3	—	Bronchitis	18	—
Abscess, Alveolar	2	—	Cerebro-Spinal Fever ...	9	9
Abscess, Retropharyngeal ...	1	—	Do Meningitis	2	—
Bronchial Catarrh	8	—	Cellulitis, Gangrenous ...	4	—

Disease.	Ad- mitted	Died	Disease.	Ad- mitted	Died
Cellulitis, Suppurative ...	1	—	Measles and Rubella ...	1	—
Cellulitis	6	—	Do. Pertussis ...	14	—
Catarrhal Jaundice ...	1	—	Do. Impetigo ...	1	—
Chorea... ..	1	—	Do. Varicella ...	25	—
Carbuncle	1	—	Nephritis	1	—
Cholecystectomy ...	1	—	Osteomyelitis ...	1	—
Diphtheria and Rubella ...	1	—	Otitis Media	1	—
Do. Measles	5	2	Poliomyelitis	1	—
Do. Pertussis	4	—	Do. (Acute)	4	1
Do. Varicella	1	—	Parotiditis, Purulent ...	1	—
Do. Scarlet Fever ...	2	1	Pemphigus	3	—
Dermatitis	3	—	Pharyngitis, Septic ...	1	1
Dermatitis Exfoliativa ...	1	—	Pharyngitis	13	—
Enteritis	9	—	Psoriasis	1	—
Enteritis Infective ...	6	4	Rubella	109	—
Erysipelas	245	10	Rheumatism	2	—
Erysipelas and Varicella ...	1	—	Rickets	1	1
Erythema	9	—	Scabies	14	—
Exanthema Therapeutica ...	1	—	Stomatitis	3	1
Encephalitis Lethargica ...	31	5	Syphilis	1	—
Furunculosis	3	—	Do. Congenital	1	—
Gastritis	1	—	Do. and Gonorrhoea ...	1	—
Gastric Ulcer	1	—	Sudamina	3	—
Gingivitis, Septic	1	—	Tonsillitis	141	—
Influenza	5	—	Tubercular Glands, Cervical...	1	—
Laryngitis	3	—	Urticaria	6	—
Lobar Pneumonia	13	3	Valvular Disease of the Heart	2	1
Meningitis	1	—	Vincent's Angina	4	1
Meningitis, Tubercular ...	13	13	Vaccinia	2	—
Meningismus	2	—	Varicella	317	—
Mumps	23	—	Varicella and Scarlet Fever...	4	—
Malaria	3	—	Do. Whooping Cough	8	—

IMMUNISATION OF NURSING STAFF.

The degree of immunity effected by toxin injections in the protection of the nursing staff against scarlet fever has been very striking. In all, 115 nurses have, when joining the staff, received prophylactic treatment by three, or more, graded doses of toxin. Of these, two only have developed scarlet fever at a subsequent period of their training, and in both these there is good ground for believing that a more adequate dosage would have rendered them insusceptible. This work has, however, been experimental in its earlier stages, and it is anticipated that a wider experience will make prevention absolute. The above results compare very strikingly with those of the years immediately preceding inoculation, when no less than 11 nurses developed scarlet fever, of whom one died. The average period of disablement in scarlet fever (including sick leave) is eight weeks; a

very considerable financial saving has, therefore, been effected, in addition to an avoidance of the suffering and risk of permanent disablement which this disease entails.

TUBERCULOSIS.

SANATORIUM SCHOOL.

The general principles and routine of treatment observed at this institution during 1927 have not varied materially from those of previous years.

The average daily number of children receiving instruction in the school attached to the Sanatorium for the year is 60, comprised as follows :—

Pulmonary cases with negative sputum ...	...	43
Pulmonary cases with positive sputum ...	...	15
Non-pulmonary cases ...	...	2

It will be observed from the report of the head teacher that the proportion of children physically able to attend school has been low throughout the year. Those children who have been confined to their beds have, as in previous years, received the attentions of an assistant teacher, but the circumstances have made consecutive education difficult, or impossible, in many instances.

Of the children admitted, 25 per cent. have been found to have tubercle bacilli in their sputum, a condition present not only in cases of well-marked clinical disease, but prevalent to an unusual degree in some children with limited clinical manifestations and good general physique. In a few instances the general progress and clinical course of the disease have closely resembled the adult type. Of the children at present in the Sanatorium under treatment, 16 per cent. have suffered from hæmoptysis.

Previous reports have not made reference to dental work carried out in connection with the Sanatorium children. In view of the number of patients aged between 5 and 10 years, this subject deserves attention. At a recent census the following defects were found in a total of 57 children :—

	Number.	Caries present.	Fillings required.	Extractions necessary.	Mal-position.	Denture perfect.
Under 7 ...	19	17	74	20	1	1
7-10 ...	10	9	26	13	—	1
Over 10 ...	28	21	80	20	3	4

Hitherto emergency dental work only has been possible, but it is contemplated that the services of the visiting dentist will be more generally available for "repair" work during the ensuing year.

The services of a throat, nose and ear specialist at this institution have recently been approved by the Committee. Approximately 20 per cent. of the children present enlarged tonsils and adenoids requiring operative interference, and it is hoped to bring these and similar cases under the systematic observation of the Specialist during the ensuing year.

The head teacher makes the following report :—

Eighty-nine scholars received lessons (in both wards and schoolroom), 36 children have been discharged, and 2 are deceased, leaving 51 at present on the roll.

This year, owing to the rainy summer, pupils have only been able to spend curtailed periods of instruction and rest out of doors. Attendances in the school building during the autumn have diminished to almost 50 per cent. of those of the corresponding period of last year. This decrease is attributable to the greater physical disability of the scholars, an increased number having to receive lessons in their own ward. Lessons in the morning are mainly devoted to the three "Rs," and, whenever possible, are co-ordinated with the handiwork lesson. Afternoon lessons include handiwork (leather work, and rafia basketry), sewing, and cookery. In connection with the latter, 6 girls out of the 12 receiving instruction have completed the year's course. Musical appreciation is presented to the scholars whenever possible. A concert, taking the form of a simple operetta, was presented during the month of December.

On 20th June the school was visited by Dr. Bywater, of the Board of Education. Dr. Bywater made the following suggestions :—

- (1) That the scholars should read a daily newspaper.

The suggestion has been adopted, and the *Daily Telegraph* is taken regularly.

- (2) That a sewing machine be procured for the use of the senior girls.

Unfortunately, as yet, we are unable to find a sufficiently safe type of machine. It is considered that the ordinary sewing machine, when in use, presents a danger to the children's fingers.

X-RAY DEPARTMENT.

In the course of 1927, 503 screen examinations have been made, and 680 films taken. The tendency to rely for diagnosis upon films rather than screenings, referred to in the report of last year, has been emphasized during the year. The additional cost entailed by this practice has been justified in the greater accuracy and speed attending diagnosis.

The following summary indicates the regions of the body comprised in the 680 films taken :—

Thorax	...	...	...	...	348	Ankle	...	...	...	...	16
Spine	...	...	...	...	108	Kidneys	...	...	...	...	10
Pelvis	...	...	...	...	48	Gall Bladder	...	...	...	...	2
Hip	...	...	...	...	26	Stomach	...	...	...	...	3
Knee	...	...	...	...	40	Rectum	...	...	...	...	2
Shoulder	...	...	...	...	12	Miscellaneous	...	...	...	...	65

ARTIFICIAL LIGHT TREATMENT.

The following information on this subject was submitted to the Ministry of Health in the course of the year :—

Artificial light therapy has been employed at the Fazakerley Sanatorium since February, 1924, and details of the number and character of the cases treated have been embodied in the periodic reports which have been returned to the Ministry dealing with this subject.

During the past few months structural alterations, approved by the Ministry, have been in operation, and a considerable curtailment of the work has necessarily resulted. The following summary of cases treated since the date of the last return (i.e., 31st December, 1926) is submitted :

Pulmonary only—

Completed treatment; improved	...	...	17
Continuing treatment	...	...	8
Discharged improved, i.e., completed treatment, and discharged from Sanatorium	...	...	6
Discharged, no improvement	...	...	2
— Total			33

Pulmonary with tuberculosis of other organs—

(a) Lungs and abdomen :

Continuing treatment	...	...	2
Discharged improved	...	...	1
Died	...	...	1
— Total			4

(b) Lungs and bones :

Discharged, no improvement	...	...	1
— Total			1

(c) Lungs and scrofuloderma :

Continuing treatment	...	...	1
— Total			1

(d) Lungs and genito urinary :

(Castration) discharged improved	...	...	1
— Total			1

(e) Lungs and glands :

Continuing treatment	...	...	2
Completed treatment, healed	...	...	1
— Total			3

Non-pulmonary—

(a) Bones :

Continuing treatment	...	...	1
Discontinued, no improvement	...	...	2
Discharged improved	...	...	1
— Total			4

(b) Bone and joint :

Continuing treatment	...	...	2
— Total			2

(c) Bone and genito urinary :

Continuing treatment	...	...	1
— Total			1

(d) Joints :

Completed treatment, improved	1	
Continuing treatment	1	
Discharged improved	2	
	—	Total 4

(e) Abdominal :

Continuing treatment	1	
Discharged improved	2	
	—	Total 3

(f) Glands :

Continuing treatment	2	
Discontinued, no improvement	2	
	—	Total 4

(g) Scrofuloderma :

Continuing treatment	2	
	—	Total 2

(h) Lupus :

Continuing treatment	1	
	—	Total 1

The length of time, $3\frac{1}{2}$ years, during which the application of artificial light as a therapeutic measure has been employed at the Fazakerley Sanatorium makes it possible to arrive at fairly definite conclusions as to its efficiency in the various manifestations of tuberculous disease.

THE TUNGSTEN-ARC.—This source has been employed solely in the treatment of the more superficial forms of tuberculosis, e.g., of the skin, shallow sinuses, smaller joints, and superficial bones. It may confidently be asserted that the tungsten-arc has been proved to possess most valuable properties in the treatment of such cases. Cases which had previously been found to be of a most obstinate and intractable character yielded rapidly to exposures of light from this source. The favourable results which have followed the exhibition of the tungsten-arc in selected cases, and under skilled control, have convinced the medical staff of this Sanatorium of its considerable value. This view is held unanimously by the Medical Superintendent and his colleagues.

THE CARBON-ARC.—Artificial light from this source has been employed in all forms of tuberculosis. The unusually large number of cases of surgical tuberculosis in adults for which provision is made at this Sanatorium has made possible an extensive trial of the carbon-arc in this class of disease. Results may be summarised as follows;—

(1) *Pulmonary tuberculosis.* The opinion is strongly held that light therapy may have dangerous consequences unless employed with great care. Exposures have been made in all stages of the disease, and under varying conditions of intensity, time, distance, etc. The immediate and remote effects closely resemble in unfavourable cases those met with as the result of injudicious sun exposure, and it has been found inadvisable to employ light therapy as a routine measure in pulmonary disease. The 33 cases referred to in above figures are largely comprised of children with negative sputum, but exhibiting well-marked clinical manifestations. In such cases marked improvement commonly results, radiation being followed by an increase of weight, energy, and alertness.

(2) *Laryngeal tuberculosis.* In a few instances striking improvement has followed the use of the carbon-arc. The general and local improvement in these cases have been of a character sufficiently marked to make coincidence a very improbable explanation.

The co-existence of lung disease, however, restricts the use of light therapy to a small proportion only of laryngeal cases undergoing sanatorium treatment.

(3) *Abdominal tuberculosis.* General irradiation by the carbon-arc is undoubtedly of service in stimulating recovery in cases with involvement of the abdominal organs and glands. The tendency of such cases to recover spontaneously under Sanatorium conditions is recognised, but in several instances recovery has taken place with a promptness and permanence sufficiently marked to excite comment amongst experienced observers of these conditions. Again, in post-operative fistula, the period of healing is undoubtedly shortened.

Tuberculosis of lymphatic glands. Radiation has a definite value in the treatment of tubercular ulceration secondary to disease of the more superficial lymphatic glands, also in cases of imperfect healing due to breaking down of the scar. In the presence, however, of extensive glandular involvement, improvement will not take place in the absence of appropriate surgical interference.

Tuberculosis of genito-urinary system. It has been observed that the apparent improvement in the general condition of the patient as the result of radiation is not necessarily accompanied by a corresponding local healing. The exhibition of arc-light in this class of case has been rather disappointing, the most beneficial results being obtainable in the post-operative period only.

Tuberculosis of bones and joints. Recovery is apparently hastened, although statistical evidence in support of this is scarcely possible in view of the protracted treatment found necessary in even the most favourable cases. Superficial sinuses, particularly those resulting from the surgical removal of infected areas, are favourably influenced.

SURGICAL.

The undernoted report by Mr. J. T. Morrison, Consulting Surgeon, refers to patients discharged (adults only) during 1927 :—

Fifty-two patients have been discharged during the year, exclusive of patients staying less than one week. The results are eminently satisfactory in so far as a high percentage is shown as quiescent in both pulmonary and non-pulmonary groups. Work done during the last few years shows that this classification is of very little real scientific value. According to the Sanatorium returns of surgical cases, the proportion of pulmonary to non-pulmonary cases is 21 to 31, i.e., pulmonary cases constitute only about 40 per cent. of the total. Bacteriological research largely carried out on these very cases shows that the proportion due to the human type of organism is 82 per cent. This implies that in a large percentage of these cases a pulmonary lesion is present, probably in all, and this observation is confirmed by the fact that so many patients labelled for administrative purposes "non-pulmonary" afterwards develop recognisable lung disease. The inevitable deduction is that so-called "surgical tuberculosis" occurring in adults is in most cases a valuable indication of hitherto unsuspected pulmonary tuberculosis. Recognition of this fact will enable the disease to be treated at an earlier and much more hopeful stage than would otherwise have been the case. This is, above all, true of those cases in which the first indication of the disease is subsequent to the age of puberty.

The relationship between the administration of anæsthetics and the aggravation of existing lung disease has been the subject of anxious thought for some years past. It has led to the employment on an extensive scale of local anæsthesia and the development of new methods of technique about to be published. Many cases, however, are unsuitable for local anæsthetics, and it would seem that the time has come for the introduction of gas and oxygen apparatus, and the training of a Resident Medical Officer specially in its administration. Of all existing methods this is the one least fraught with danger to a patient with damaged lungs.

TREATMENT RESULTS.

(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	24·6	9	—	—	5
Abdominal ...	4	9·5	2	—	—	2
Genito-urinary ...	2	19	1	1	—	—
Lymphatic glands ...	1	21	—	—	—	1
Miscellaneous ...	—	—	—	—	—	—
TOTAL ...	21		61·9%			
NON-PULMONARY DISEASE.						
Bones and joints ...	20	20	11	2	4	3
Abdominal ...	3	5	3	—	—	—
Genito-urinary ...	2	33	1	1	—	—
Lymphatic glands ...	5	8	4	1	—	—
Miscellaneous ...	1	28	—	1	—	—
TOTAL ...	31		77·4%			

DENTAL WORK.

The following work has been carried out by the Dental Surgeon during the year :—

Fillings ...	75
Extractions under local anæsthetic ...	184
Extractions under gas ...	3
Extractions without an anæsthetic ...	6
Scalings and miscellaneous operations ...	48

HIGHFIELD SANATORIUM.

(Now Broadgreen Sanatorium.)

The age periods of the cases admitted during the year 1927 were as follows :—

	5-10	10-20	20-30	30-40	40-50	50 or over	Totals.
Male ...	6	34	73	78	87	68	346
Female ...	12	80	82	40	32	13	259
Totals ...	18	114	155	118	119	81	605

OCCUPATIONAL TREATMENT.—The majority of patients fit for graduated forms of work are engaged in various grades of gardening, which form of occupation is not only beneficial to the patient engaged in it, but by various improvements and by the general upkeep of the grounds materially assists all patients during their course of treatment. Carpentry is now engaging more patients owing to the development of the poultry farm, the buildings and appliances for which are constructed entirely by patients. A start with poultry was made in the autumn, and this branch will gradually give further variety of interest and occupation to a larger number of patients.

SPECIAL TREATMENT in the form of artificial pneumothorax, and treatment by injections of gold salts, has been carried out in selected cases.

RECREATION.—Apart from the various forms of outdoor and indoor recreation, concerts, which are much appreciated by patients, have been given practically every week during the winter months through the kindness of various amateur and professional concert parties. A number of whist drives have also been held.

SCHOOL.—The average number on the school roll was 45. New pupils numbered 29. There has been again a number of instances of very backward children, who have derived marked benefit from the sanatorium school. In addition, the mental occupation plays as important a part in the improvement in general health of the child as does occupational treatment in the adult.

Of the special subjects, more attention has been paid during the year to singing, and to eurhythmic and country dances for those patients who are fit. In the case of the girls, attention has as usual been paid to sewing and knitting, and some of the senior girls have shown considerable talent in cutting out the school dresses and in making costumes for the school concert. These are always made by the pupils of the school.

A pleasing feature has always been the friendly relationship between the pupils and the teaching and other staff, as evidenced by the frequent visits to the sanatorium paid by former pupils, and in particular their attendance at the annual school concert in winter and the school sports meeting in summer, which functions are also attended by the parents of the school children.

Mention may also be made of a former pupil who, after a somewhat lengthy stay in sanatorium, secured second place in the final English examination at a commercial college, and subsequently a clerical post in the city.

DENTAL TREATMENT.—The work done has been chiefly of the nature of relief of sepsis.

Extractions performed number	...	...	211
Scalings, temporary fillings, etc.	...	...	18

The following tables, prepared by the Medical Staff of each of the City Hospitals show the number of patients admitted, the nature of the illness in each case and the results of treatment at each of the eight hospitals during the year 1927 :—

CITY HOSPITAL NORTH, NETHERFIELD ROAD.

Visiting Physician, Dr. R. I. RICHARDSON.

Resident Physician, Dr. F. R. O'SHIEL.

DISEASES.	Remaining Dec. 31st, 1926.	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.	86	600	—	686	—	7	600	77	—	2	0·3
Enteric Fever.	—	—	—	—	—	—	—	—	—	—	—
Diphtheria ...	—	2	—	2	—	—	2	—	—	—	—
Measles ...	—	19	—	19	—	—	17	—	—	2	10·5
Other Diseases	3	33	—	36	—	1	33	1	—	1	3·3
Isolation and Observation Cases ...	—	12	—	12	—	—	12	—	—	—	—
Totals ...	89	666	—	755	—	8	664	78	...	5	0·75

CITY HOSPITAL SOUTH, GRAFTON STREET.

Visiting Physician, Dr. H. A. CLARKE.

Resident Physician, Dr. RITA HENRY.

DISEASES.	Remaining Dec. 31st, 1926.	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.....	49	349	—	398	—	20	323	51	1	4	1.1
Diphtheria	—	—	—	—	—	—	—	—	—	—	—
Measles	23	326	—	349	—	1	319	2	—	27	8.2
Other Diseases.....	1	46	—	47	—	—	39	4	—	4	8.6
Isolation & Obser- vation Cases	3	16	—	19	—	—	14	5	—	—	—
Totals	76	737	—	813	—	21	695	62	1	35	4.7

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, 1926.	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	326	386	—	—	—	—	315	329	—	68
Isolation and Observation Cases ...	—	5	—	—	—	—	5	—	—	—
	326	391	—	—	—	—	320	329	—	68

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

DISEASES.	Remaining Dec. 31st, 1926.	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.....	27	183	40	250	—	14	186	47	—	3	1·6
Enteric Fever	—	4	—	4	—	—	1	2	—	1	25·0
Diphtheria	25	192	9	226	—	21	171	24	3	10	5·2
Measles	16	436	3	455	—	37	378	—	2	40	9·1
Whooping Cough ...	—	3	—	3	—	—	3	—	—	—	—
Other Diseases.....	—	90	1	91	—	1	74	13	—	3	3·3
Isolation and Observation Cases	—	—	—	—	—	—	—	—	—	—	—
Totals	68	908	53	1029	—	73	813	86	5	57	6·3

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, 1926.	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 .	40	243	26	309	—	15	279	13	—	2	0·8
Enteric Fever .	—	33	—	33	—	—	27	2	—	4	12·1
Paratyphoid Fever	—	14	—	14	—	—	6	6	—	2	14·3
Diphtheria.....	22	264	34	320	—	15	266	24	6	15	5·7
Smallpox	—	—	—	—	—	—	—	—	—	—	—
Measles	18	234	13	265	—	3	236	—	5	26	11·1
Whooping Cough.....	6	273	2	281	—	3	190	57	3	31	11·4
Phthisis	—	—	—	—	—	—	—	—	—	—	—
Other Diseases.	84	908	37	1029	—	32	855	86	14	56	6·2
Isolation and Observation Cases.....	2	31	2	35	—	—	33	2	—	—	—
Totals.....	172	2000	114	2286	—	68	1892	190	28	136	6·8

CITY HOSPITAL EAST, MILL LANE, OLD SWAN.

Visiting Physician, DR. H. A. CLARKE.

Resident Medical Officer, DR. F. WEIGHTMAN.

DISEASES.	Remaining Dec. 31st, 1926.	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.
a Scarlet Fever.....	1	17	—	18	5	—	11	1	—	1	5·8
m Enteric Fever	—	—	—	—	—	—	—	—	—	—	—
q Diphtheria.....	111	1054	—	1165	—	—	1012	109	20	44	4·1
h Measles	—	—	—	—	—	—	—	—	—	—	—
d Other Diseases	3	34	—	37	—	—	28	—	7	9	26·4
Isolation and Obser- vation Cases ...	—	22	—	22	—	—	22	—	—	—	—
Totals.....	115	1127	—	1242	5	—	1073	110	27	54	4·8

CITY HOSPITAL, SPARROW HALL.

Medical Superintendent, DR. C. RUNDLE.

DISEASES.	Remaining Dec. 31st, 1926.	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.....	5	—	2	7	—	—	7	—	—	—	—
*Smallpox	—	26	—	26	—	—	26	—	—	—	—
Whooping Cough...	3	2	—	5	—	2	3	—	—	—	—
Diphtheria.	7	50	8	65	—	12	35	18	—	—	—
Measles	—	—	16	16	—	—	16	—	—	—	—
Other Diseases	32	100	75	207	—	16	175	15	—	1	1.0
Isolation and Observation Cases	4	3	—	7	—	—	6	1	—	—	—
Totals	51	181	101	333	—	30	268	34	—	1	0.5

* None of these cases of Smallpox were Liverpool patients. They were admitted from an outside area.

HIGHFIELD SANATORIUM.

(Now Broadgreen Sanatorium.)

Medical Superintendent, DR. H. R. MACINTYRE.

Senior Resident Medical Officer, DR. O. F. THOMAS.

Assistant	do	do.	Dr. MARGT. FERRIER.
do.	do.	do.	Dr. EDWARD MILES.
do.	do.	do.	Dr. D. WOODSON.

DISEASE.	Remaining 31st Dec., 1926.	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.....	318	605	923	—	—	459	314	—	150

SANITARY ADMINISTRATION.

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	—
¹ 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.)		
² Smoke inspectors	3	—
³ Inspectors of Common Lodging Houses and Houses let in Lodgings	16	—
*Inspectors of Canal boats	1	—
³ Ambulance and disinfecting superintendents and inspectors	13	—
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)	31	—
„ „ (Temporary)	2	1
„ „ (Health visitors, etc.)	—	7
„ „ (Tuberculosis branch)	3	10
⁴ Health visitors, School nurses, etc. (permanent) ...	—	76
⁴ „ „ „ „ (temporary)	—	14
⁵ Inspectors under the Midwives Act	—	2

	Males	Females
⁶ Ophthalmia Neonatorum nurses	—	2
Superintendent and Assistants at Infant Milk Centres (Permanent)	1	12
Temporary assistants at Infant Milk Centres ...	3	30
⁷ 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... ..	4	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) ...	2	55
Seamstresses	—	3
Total number of staff	190	293

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. ¹ Have special training in each branch of the work, *i.e.*, Butchers, Fishmongers, Fruiterers, &c., are also certificated. ² Hold Marine Engineer's First Class Certificates. ³ All hold the certificate of the Liverpool University School of Hygiene, the Royal Sanitary Institute or an equivalent thereto. ⁴ Fully-trained and Certificated Nurses or other special qualifications. ⁵ Registered Midwives with special qualifying certificates. ⁶ Fully-trained Nurses with special training in Ophthalmia Neonatorum. ⁷ 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.

The district sanitary inspector, in all complaints of nuisances, visits the same day as the complaint is received, 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 1925, 19,075; in 1926, 20,514, and in 1927, 20,811. As in former years, 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 29,704 nuisances were discovered as the result of complaints. Preliminary notices were served either on the owners or occupiers to remedy 25,009 nuisances. The remaining 4,695 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 65,547 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 24,943, 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 number of nuisances found by the district sanitary inspectors is shown in the following table, along with the character of the proceedings taken by the prosecuting sanitary inspectors to abate the nuisances, with the results :—

Number of complaints made by inhabitants...	...	...	20,811
„ nuisances discovered on above complaints	...	...	29,704
„ „ „ on house-to-house inspection	...	...	65,547
Total nuisances	...	...	95,251
„ visits by district sanitary inspectors to re-inspect above nuisances	...	...	54,999
„ notices issued (owners)	...	...	64,994
„ „ (occupiers)	...	...	311
Total notices	...	...	65,305
„ visits to premises under observation	...	...	10,323
„ incidental calls	...	...	32,269
„ visits made by prosecuting inspectors to re-inspect nuisances	...	...	76,914
„ notes sent to comply with notices	...	...	5,300
„ informations laid	...	...	272
„ magistrates' orders	...	...	129
„ fined	...	...	22
„ acquitted or withdrawn	...	...	121

All nuisances were subsequently found abated.

For visitations in house to house inspection see page 179.

OFFENSIVE TRADES.

The following offensive trades are carried on in the city:—Bone boilers, Bone stores, Cotton seed oil works, Dripping factories, Fat and tallow melters, Fellmongers, Fertilizer works, Fish oil works, Gut scrapers, Hide and skin works, Lard refiners, Oleo margarine works, Paint and resin works, Palm oil works, Patent manure works, Seed crushers, Soap boilers, Sulphuric acid works, Tanneries, Tar and naphtha works, Tripe boilers, and Turpentine works.

When permission is granted to carry on an offensive trade, 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 930.

FACTORY AND WORKSHOP ACT, 1901.

FABRIKES, 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	...	...	...	...	2,391
„ Workshops	...	...	...	...	3,538
„ Workplaces	...	...	...	...	351
„ visits to Factories (including Factory Bakehouses)	...	...	...	...	3,311
„ visits to Workshops (excluding Workshop Bakehouses)	...	...	...	...	5,849

BAKEHOUSES.

During the past 27 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, 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 5,043 visits were paid to bakehouses.

Number of bakehouses on register, 31st December	...	...	576
„ special visits to bakehouses on complaints	...	49	
„ ordinary visits to bakehouses	...	...	4,836
„ re-inspections of incorrect premises	...	...	158
Total visits	...	...	5,043
Number of occasions on which bakehouses were found			
incorrect	...	...	276
„ sanitary defects found	...	...	281
„ notices issued	...	...	148

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	...	...	326
„ visits to premises	...	...	248
„ 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	...	...	1,105
Number found incorrect	...	...	104

INSPECTION OF STABLES AND REMOVAL OF MANURE.

Stables within the city are systematically visited by two inspectors, a great portion of whose time is devoted 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 8,806.

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 18,668.

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," and in this connection 531 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 the visit and explanation, 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 complaints were received mainly in regard to the contravention of the Half-Holiday Order, with the following results :—

Number of complaints	...	...	...	...	...	425
„ visits by day	...	...	...	...	...	14,892
„ visits after 6 p.m.	...	...	...	...	...	312,552
„ informations	...	...	...	...	...	337
„ fined	...	...	...	...	...	212
„ withdrawn	...	...	...	...	...	20
„ discharged cautioned	...	...	...	...	...	105
Amount of fines and costs	...	...	...	...	...	£82 7 6

In addition to the above, it was found necessary to caution persons by letter for minor infringements of the Acts.

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, an annual inspection is therefore made of all cellars, and if any are found re-occupied, the usual notice is served.

EXAMINATION OF CELLAR AND CELLAR DWELLINGS.

Number of inspections of street cellars	...	...	...	23,865
„ found illegally occupied	...	...	...	184
„ of inspections of court cellars	...	...	...	201
„ of notices issued to cease letting or occupying	...	...	...	371

DEPARTMENTAL REFERENCES.

The co-operation which the Public Health Department receives from other departments of the Corporation is fully appreciated, and as a result many 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	...	...	...	...	13,474
„ Water Engineer	...	...	...	...	8,468
„ Lodging-house inspectors	...	...	...	...	12,647
„ Education Department (suspected infection in school children)	...	...	...	...	7,502

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	...	...	...	...	...	17,006
„ Building Surveyor	...	...	...	...	...	1,982
„ Water Engineer	...	...	...	...	...	5,992
„ Education Department (school children suffering from infectious diseases)	...	...	...	...	...	19,111
„ Other departments	...	...	...	...	...	1,123

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 is the possibility of the spread of plague, a disease which from time to time is brought into the port on ships arriving from foreign countries. 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 that connection 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 he 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 forward 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 every morning, the rats being collected and labelled and a proportion taken the same day for examination by the City Bacteriologist.

The City Engineer's Department has also done valuable work in catching rats in public sewers, which are 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 warehouse keepers so that 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, whilst the rat-catcher enters in his daily report book full details of each day's work.

It has not been found necessary to take any 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 of the presence of rats a visit is at once paid by the rat-catcher to the premises.

NUMBER OF RATS CAUGHT.

Number of rats caught in warehouses	...	...	...	7,020
„ rats obtained from other sources	...	...	...	5,132
„ rats caught by City Engineer (sewerage dept.)	...	...	...	5,519

**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.)	3,811	250	—
<i>Workshops</i> (Including Workshop Laundries).	5,849	481	—
<i>Workplaces</i> (Other than Outworkers' premises in- cluded in Part 3 of this Report.)	1,105	81	—
TOTAL	10,265	812	—

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	804	804	—	—
Want of ventilation	30	30	3	—
Overcrowding	2	2	—	—
Want of drainage of floors	—	—	—	—
Other nuisances	505	505	—	—
Sanitary accommodation—				
Insufficient	10	10	—	—
Unsuitable or defective	351	351	—	—
Not separate for sexes	14	14	—	—
<i>Offences under the Factory and Workshop Acts :—</i>				
Illegal occupation of underground bakehouse (s. 101)	—	—	—	—
Other offences	—	—	—	—
(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)				
TOTAL	1,716	1,716	3	—

*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 5,910 cases of infectious disease removed to hospital by officers of the ambulance staff during the year.

The number of rooms stripped or sprayed was 3,608, and the number of rooms disinfected 38,367. There were also 3,001 library books disinfected.

The number of articles (bedding, clothing, etc.) disinfected at the disinfecting apparatus was 55,863.

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 may be utilised.

DISINFECTION OF TRANSMIGRANTS.

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 transmigrants from these countries en route to America with some anxiety.

The emigration houses where these people reside, pending the sailing of the vessel, are kept under strict supervision by the lodging-house inspectors, being 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, 8, and from the city, 354.

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 338.

CREMATORIUM.

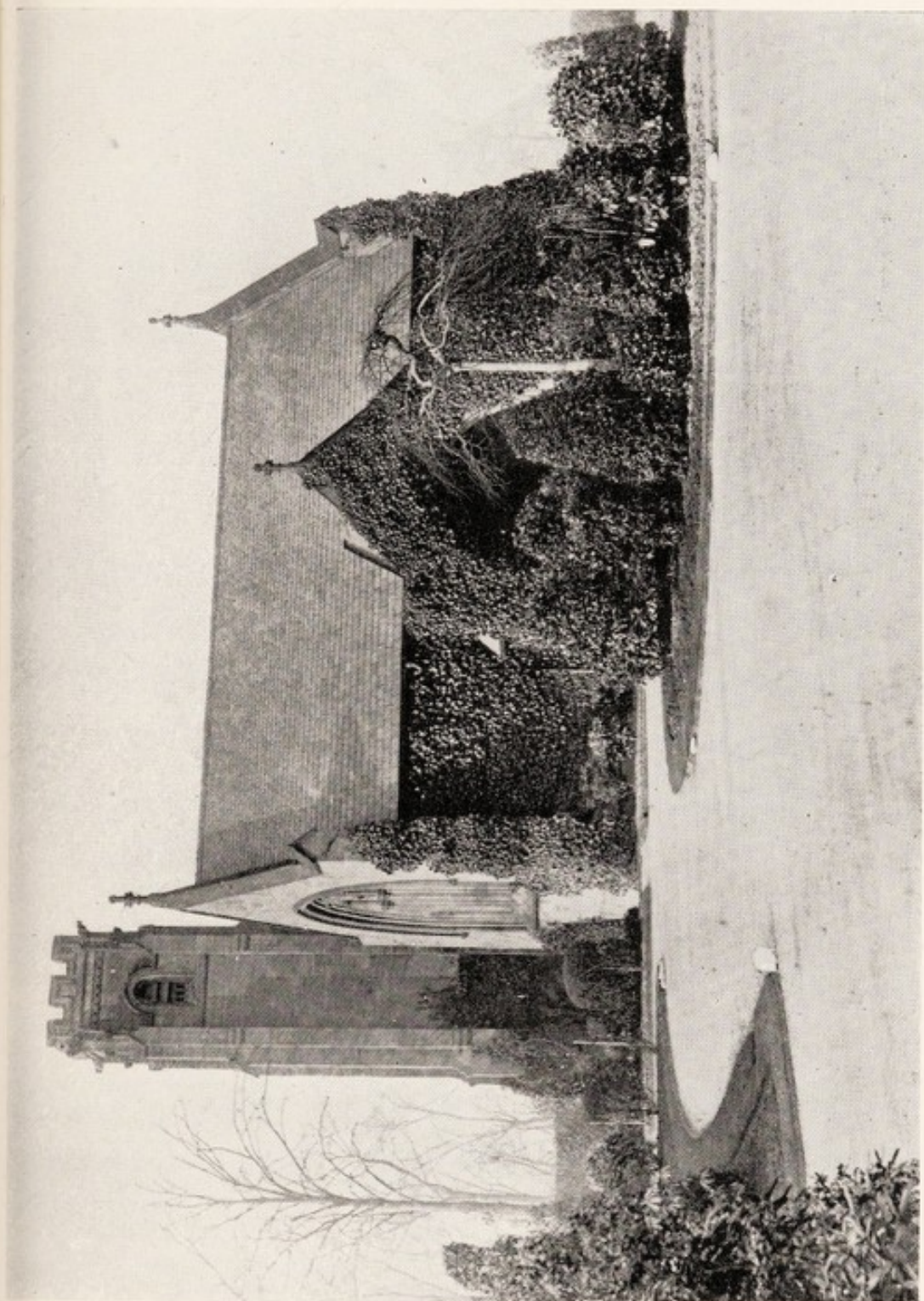
The Crematorium, which is situated in Anfield Cemetery, was opened by the Liverpool Crematorium Company in the year 1896. When the Corporation became the Burial Authority for the city, the administration was taken over in October, 1908, by the Crematorium Sub-Committee.

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.

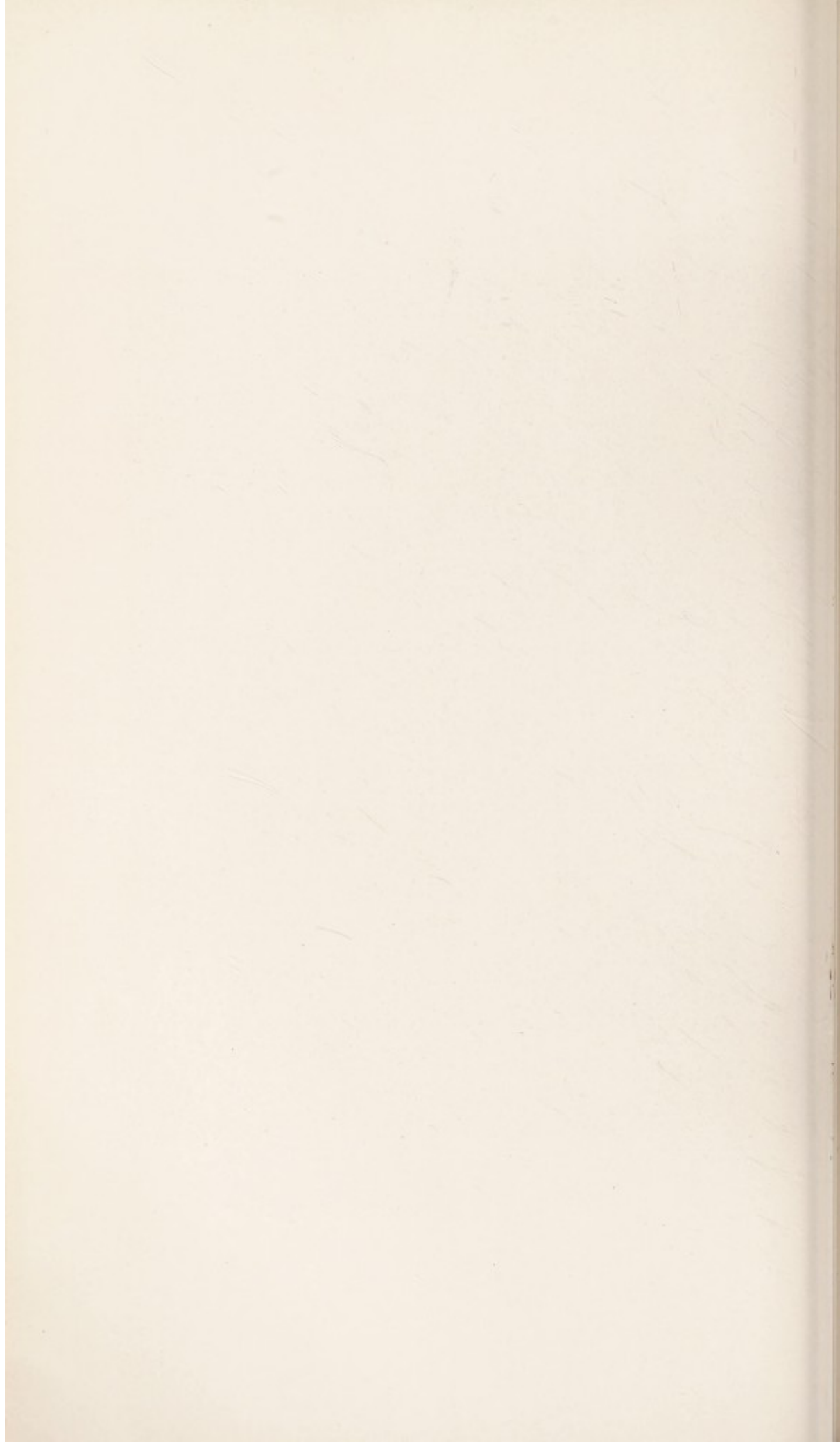
The Garden of Remembrance, which was opened on July 28th, 1927, is a plot specially reserved within the Crematorium grounds for the depositing of ashes, where this method of disposal is desired by the relatives. Disposal of ashes in this way involves no extra charge.

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

1896.....	2	1914.....	49
1897.....	10	1915.....	53
1898.....	27	1916.....	58
1899.....	23	1917.....	62
1900.....	40	1918.....	70
1901.....	40	1919.....	88
1902.....	54	1920.....	70
1903.....	35	1921.....	74
1904.....	40	1922.....	74
1905.....	35	1923.....	62
1906.....	46	1924.....	74
1907.....	34	1925.....	75
1908.....	32	1926.....	96
1909.....	46	1927.....	101
1910.....	37		
1911.....	50		1,675
1912.....	52		
1913.....	66		

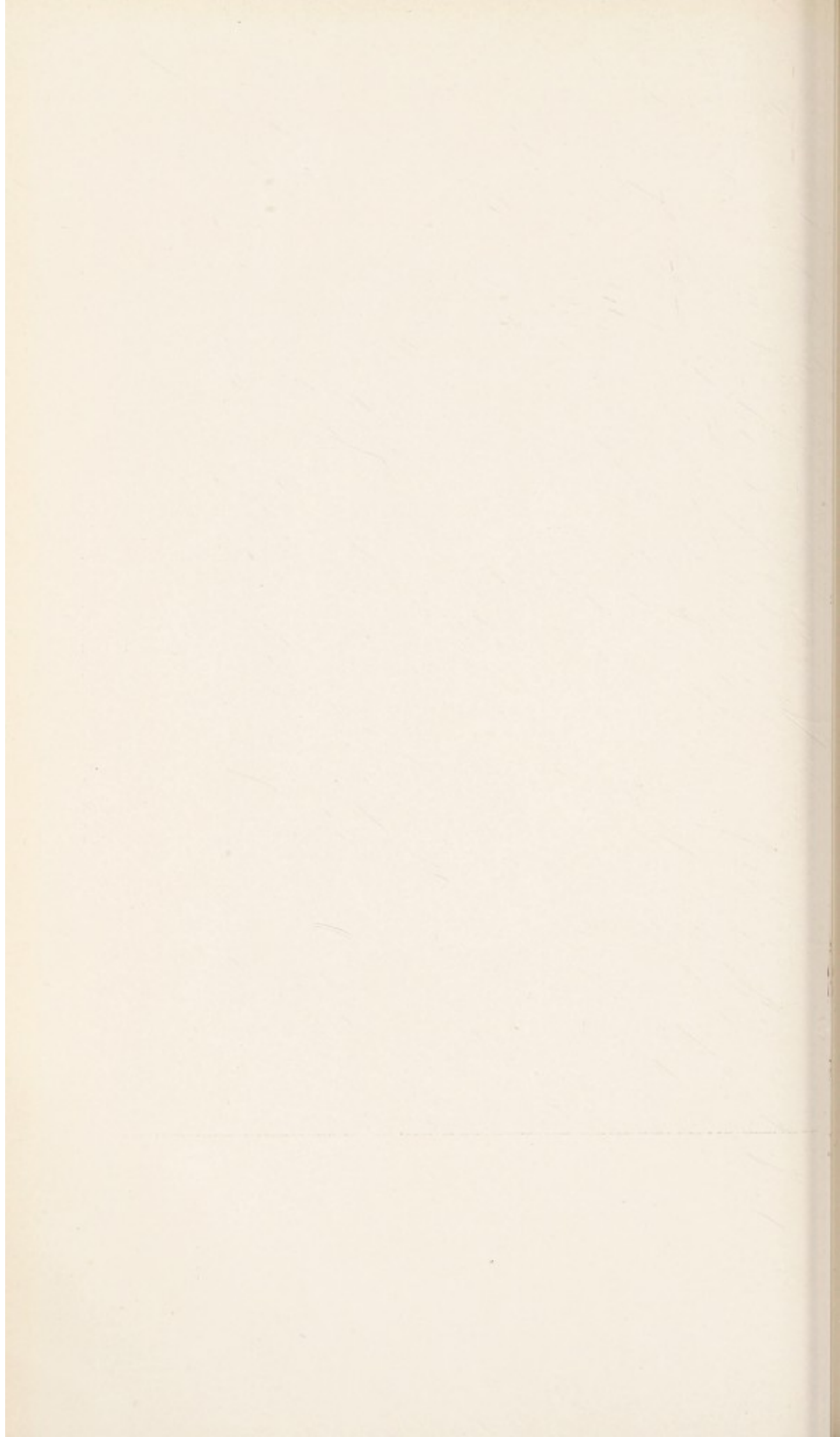


Liverpool Crematorium.





Garden of Remembrance.



SMOKE NUISANCES.

Proceedings for the abatement of nuisances caused by the emission of excessive smoke from factories, steamers, etc., were taken under the Liverpool Corporation Act, 1921, Sections 472 and 473.

REPORTS OF EXCESSIVE SMOKE.

Number relating to factories	...	...	...	...	24
„ „ „ steamers in dock	...	...	...	...	9
„ „ „ steamers in river	...	...	...	...	131
Total					164

Sixty-six steamship owners were communicated with, or written to, in respect of nuisances caused by the emission of excessive smoke, and 1,529 manufacturers and 178 steamship owners cautioned.

INFORMATIONS FOR EXCESSIVE SMOKE.

Informations against occupiers of factories	...	...	24
„ „ owners of steamers in river	...	...	74
„ „ „ „ „ dock	...	...	2
Total			100

		Acquitted or withdrawn.		Fined.		Amount of Fines.
Factories	...	3	...	21	...	£10 16 0
Steamers	...	2	...	74	...	£38 3 0
		5	...	95	...	£48 19 0

SMOKE INSPECTION.

The total number of complaints received of nuisances caused by smoke from the defective state of house flues, low chimneys, etc., was as follows:—

Chimneys raised in consequence of complaints received	18
Flues altered or repaired	34
Complaints under observation	55
Complaints referred to other departments	3
Complaints not sustained... ..	3
	<hr/>
Total	113

and the visits paid to the same numbered 910.

SMOKE ABATEMENT.

INDUSTRIAL SMOKE.—During the early part of the year considerable difficulty was experienced with regard to industrial smoke, owing to the effects of the miners' strike of the previous year. As the year advanced, factory owners gradually recovered from abnormal conditions and as fuel supplies become plentiful smoke nuisances were greatly reduced.

Several factories where the plants had been converted for the use of liquid fuel burning reverted to coal, which caused a considerable amount of nuisance during the reversion period. One large factory has completed and opened a new steam generating plant, having water tube boilers fitted with automatic stokers, the improvement shown since the installation being most marked. With one or two exceptions, sustained excessive smoke from factory chimneys has now almost entirely ceased, and atmospheric conditions are much improved.

PULVERIZED FUEL.—The latest method of generating steam in boilers is by firing them with pulverized fuel, and though the method is as yet in its infancy, it is one which may, perhaps, be considered as the method of the future. A greater sense of adjustment—air and fuel supply—can be made, than when using coal in the ordinary way, so that almost perfect combustion can be obtained.

A new small power station at the south end of the city is being installed, and will be in operation early next year.

One of the largest power stations in the city has been experimenting, but the results have not been satisfactory, owing to faulty construction.

STEAM WAGGONS.—Smoke nuisance from this type of vehicle is now reduced to a minimum. Drivers are taking reasonable care, and good supplies of fuel are available. No proceedings were taken during the year with regard to excessive smoke from steam waggons.

LOW CHIMNEYS.—During the year 18 chimneys were raised in consequence of complaints received. It is often found that products of combustion emitted from a chimney cause a nuisance to the surrounding inhabitants, due to the chimney being too low. Sometimes a change of fuel would remedy this, but when this was not practicable, notices were served on the occupier to raise the chimney.

STEAMERS IN DOCK AND ON THE RIVER.—Special attention has been given with regard to excessive smoke emitted from vessels in dock, and plying on the River Mersey. There were 140 reports of excessive smoke from steamers in dock and on the river, 64 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 to the nuisance. The number of steamers proceeded against was 76, of which 74 were convicted and two discharged with a caution.

DOMESTIC SMOKE.—There is no legislation to deal with this nuisance. Individually the amount of smoke emitted from domestic chimneys is small. Collectively it is heavy, almost as heavy as that of industrial chimneys. What is required for domestic fireplaces is a new form of fuel, something between our present form of coal and coke. A local company are now retailing a fuel known as "Coalite," which though slightly more expensive than coal, is a very satisfactory substitute. Sales at the end of the year are estimated at over 100 tons per week. As the sales increase the cost of production will become less, and in time it will become a competitor with coal.

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 178). This is the seventh 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 44 tons per month, as against 50 tons in 1926 and 1925, 51 tons in 1924 and 59 tons in 1923. The deposits were lowest in February and December—an annual experience—but low amounts were recorded in May, July and August.

The collected rainwater was acid for eight months out of the twelve, but alkaline during the four months May to August, inclusive; this corresponds to the summer months, when domestic fires are least in use. The acidity, which was highest in October, November, and January, 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 339 out of 526 tons or 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.

ATMOSPHERIC POLLUTION, 1927.

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	53.41	31.29	44.78	42.53	39.75	46.94	37.00	37.97	45.80	65.41	48.17	32.95	526.00
UNDISSOLVED MATTER—													
Tarry Matter and Bitumen	0.66	0.39	0.59	0.52	0.36	0.48	0.38	0.54	0.64	0.66	0.33	0.44	5.99
Other Organic Matter	11.18	5.18	7.09	7.46	7.41	7.93	7.98	9.97	6.99	8.47	5.10	4.55	89.31
Mineral Matter	13.34	11.42	15.32	17.24	20.58	18.11	12.96	8.36	11.65	21.60	17.47	10.11	178.16
Total Undissolved Matter ...	25.18	16.99	23.00	25.22	28.35	26.52	21.32	18.87	19.28	30.73	22.90	15.10	273.46
DISSOLVED MATTER—													
Organic Matter by Ignition	11.03	5.23	9.68	7.17	4.90	7.11	4.79	4.08	9.84	13.69	8.03	5.53	91.08
Mineral Matter	17.20	9.07	12.10	10.14	6.50	13.31	10.89	15.02	16.68	20.99	17.24	12.32	161.46
Total Dissolved Matter	28.23	14.30	21.78	17.31	11.40	20.42	15.68	19.10	26.52	34.68	25.27	17.85	252.54
Alkalinity as NH_3	—	—	—	—	0.02	0.15	0.15	—	—	—	—	—	0.32
Acidity as H_2SO_4	0.43	0.17	0.39	0.12	—	—	—	—	0.37	0.41	0.56	0.14	2.59
Chlorine as Cl	4.86	1.85	3.58	2.19	1.40	2.52	1.55	2.05	3.22	5.78	3.57	1.57	34.14
Ammonia as NH_3	0.75	0.36	0.53	0.31	0.25	0.59	0.43	0.52	0.89	0.36	0.58	0.22	5.79
Sulphate as SO_3	7.73	3.89	5.95	4.24	3.21	5.51	4.64	5.61	6.50	9.10	8.67	5.38	70.43
Lime as CaO	1.76	1.31	1.81	1.73	1.58	1.78	1.96	2.04	2.65	2.14	1.71	1.20	21.67
RAINFALL { Millimetres ...	86.51	34.20	79.11	48.49	26.03	93.12	85.49	134.00	148.53	83.96	112.70	36.09	968.23
{ Inches	3.41	1.34	3.11	1.90	1.02	3.67	3.37	5.27	5.85	3.30	4.44	1.42	38.10

SPECIAL VISITS.

Number of visits to railway carriages	...	...	...	566
„ „ „ platforms (fish arrivals)	...	...	...	127
„ „ poultry depots	...	...	...	420
„ „ manure depots	...	...	...	264
„ „ marine stores	...	...	...	987
„ „ fried fish shops	...	...	...	1,683

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 them 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 breeding places for flies.

HOUSE-TO-HOUSE INSPECTION.

The systematic house-to-house visitation by the district male staff is shown in the following table:—

Number of street houses examined	...	...	...	129,084
„ court houses examined	...	...	...	2,504
Total	...	...	...	131,588
Number of apartments examined...	...	...	...	642,632
„ houses where nuisances existed	...	...	...	41,969

INFECTED HOUSES.

The following table shows the number of houses visited where notifiable infectious diseases have occurred, with the number of visits to these houses, and to houses where cases of non-notifiable infectious diseases have been reported to the Health department by the Education department:—

Number of street houses where notifiable disease occurred...	12,668
„ court houses where notifiable diseases occurred...	197
„ visits to infected houses and cellars (notifiable cases)	22,533
„ visits to infected houses and cellars (school cases)	6,929
„ visits and re-visits to Phthisis cases	4,681
„ enquiries <i>re</i> suspected Smallpox contacts ...	464
„ other enquiries	5

COURT AND ALLEY EXAMINATIONS.

Number of inspections of courts and alleys	20,069
„ „ water-closets	37,060
„ water-closets found dirty, but cleansed by officers' instructions	28,130

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 in use, 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 219 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 these brushes are purchased from shops in different parts of the city, all of which are submitted to the City Bacteriologist for examination.

Number of shaving brushes submitted during the year ...	49
„ found infected with Anthrax	Nil.

COMMON LODGING HOUSES.

At the end of the year 1926 there were on the register (including emigration houses), 150 lodging houses. During the year 1927, 25 houses were given up and removed from the register, and 18 new houses added, leaving, at the end of 1927, 143, providing accommodation for 6,707 lodgers.

Under Part 5 of the Public Health Acts Amendment Act, 1907, Sections 69 to 72 (adopted in 1912), 79 keepers were re-registered and 31 deputy-keepers registered.

INSPECTION OF LODGING HOUSES.

Visits by day	...	...	...	...	...	6,394
„ night	...	...	...	...	...	853
Visit to houses not on register...	...	...	...	...	...	180

No informations have been laid against keepers during the year.

INFECTIOUS DISEASES IN LODGING HOUSES.

Eight cases of infectious disease were notified during the year, the necessary disinfection and cleansing of the premises being carried out after each case.

Ninety-nine 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 78 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, 1927	...	...	2
„ notified from Hull or other ports	...	...	69
			— 71
„ discovered in Liverpool	...	...	9
			— 80
Number of above who sailed for U.S. of America or Canada	...	...	77
Number returned home	...	...	3
			— 80

There are 17 houses providing accommodation for 613 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 byelaws, 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 two such licensed houses are now on the register, providing accommodation for 46 seamen.

It has not been found necessary to institute proceedings under the byelaws. Since 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, power being 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.

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.

During the last twenty years the character of sub-let houses (and also of the tenants) has undergone a change, and the number of such houses on the register has increased.

Previous to this period sub-letting was almost entirely confined to streets (and even districts) within the old city boundary.

The class of property used for this purpose consisted mainly of the three-roomed back-to-back type of house (both front and in courts), occupied by two families, sometimes accommodating a family in each of the three rooms.

The demolition of this insanitary property and the erection of Artisans Dwellings by the Housing Committee in their place, re-housed most of the people in self-contained tenements, the remainder finding accommodation in the larger six and eight-roomed houses in the vicinity.

Sub-letting continues in the latter type of house, but the overcrowding has diminished owing to the fact that in these houses there are more apartments and of greater cubic-capacity.

Another cause in the decrease of overcrowding has been the removal of works to the outskirts of the city, which has induced many workers to migrate to the suburbs so as to be near their place of employment. This has resulted in a large amount of sub-letting in streets where it was almost previously unknown, but it covers a wide area in a scattered fashion. This property is more suitable for the accommodation of more than one family, and the chances of overcrowding are naturally reduced, but at the same time there has been increased difficulty in supervision. It is unfortunate that in some instances the living-rooms have been utilised as sleeping apartments, which for some time past it has been the policy of the department to discourage.

The people themselves also appear to desire to live under better conditions than formerly, which is made evident by the fact that there has been a reduction in the number of infringements of the bye-laws. Whereas it was once necessary to institute police court proceedings to have these offences abated, it is now sufficient to point out how, by a re-arrangement of the sleeping apartments, the overcrowding can be abated without any inconvenience to the occupants. This advice is accepted and appreciated, judging by the amicable way in which it is carried out.

During the last few years many large residences in the best parts of the city have been rented for the purpose of sub-letting on the flat system by the tenants and by the owners themselves in many instances. These are not as convenient as flats, as they are not self-contained, and the occupants have to use a common water supply and sanitary conveniences. The rooms are commodious, well-furnished and kept in good condition, and are tenanted by married couples with few or no children, or in a few cases by a couple of friends jointly. Supervision by the department is not necessary to any great extent. The question

of finance to this class of sub-tenant is not so important, as the rents charged for the rooms vary from 12s. to 20s per week, which would pay the rental of an ordinary dwelling-house. It appears to be more in the nature of a desire to be labour saving.

INSPECTION OF HOUSES LET IN LODGINGS.

Houses on register, December 31st, 1926	...	...	17,883
„ removed from register during 1927	...	...	10
„ added to register during 1927	...	...	196
„ on register, December 31st, 1927	...	...	18,069

DAY VISITS :

Day visits	...	...	...	...	...	124,026
Rooms measured	...	...	...	...	...	1,056
Floors found dirty	...	...	...	...	...	411
Floors found cleansed on revisit	...	...	...	...	...	411
Stairs and passages dirty	...	...	...	...	...	126
Stairs and passages found cleansed on revisit	...	...	...	...	...	126

Informations were laid for not washing floors, 4; and not cleansing stairs, passages, 1.

CLEANSING OF WALLS AND CEILINGS.

The following notices were served on landlords of houses let in lodgings during the year under Section 7 of the 1911 byelaws:—

Preliminary notices to cleanse wall and ceilings	...	16
Statutory	„ „ „ „	2
Houses cleansed	...	16
Rooms	„	83

REFERENCES FROM OTHER DEPARTMENTS.

All these references relate to matters within the province of the department to deal with:—

Received from Sanitary Department	...	240
„ by anonymous complaints	...	42
„ by tenants'	„	29
„ by lodgers'	„	26
„ by other sources	...	14

REFERENCES TO OTHER DEPARTMENTS.

The number of references to other departments was :—

Referred to Sanitary department	...	...	...	12,728
„ „ (Specials)	...	...	...	477
„ City Engineer	...	...	...	340
„ Water „	...	...	...	2,293
„ City Surveyor	...	...	...	1,166
„ Health Visitors and other departments	...	...	...	10

NIGHT VISITS.

OVERCROWDING :

Houses visited between 11-45 p.m. and 2 a.m.	...	...	19,379
Cases of overcrowding found	...	...	950
Visit to instruct how to arrange so as to abate overcrowding	...	...	950
Re-inspection after instructions given	...	...	1,160
Cases of overcrowding abated on re-inspection	...	...	749
Informations laid for overcrowding	...	...	9
Convictions for overcrowding	...	...	4
Dismissed cautioned	...	...	3
Withdrawn, overcrowding abated	...	...	2

DETAILS OF OVERCROWDING :

Overcrowding by families occupying 1 room...	...	...	309
„ „ „ 2 rooms	...	...	436
„ „ „ 3 or more rooms	...	...	231

NON-SEPARATION OF SEXES :

Cases found	...	...	...	195
Visit to instruct how to re-arrange so as to separate the sexes	...	...	...	195
Re-inspection after instruction given...	...	...	...	216
Cases abated on re-inspection...	...	...	...	148
Informations laid	...	...	...	2
Convictions	...	...	...	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 :—

Year.	No. of Houses let in Lodgings on Register.	OVERCROWDING.					NON-SEPARATION OF SEXES.			
		No. of night visits.	No. of infringements found.	No. of infringements found abated on re-visit.	No. of informations laid.	No. of convictions.	No. of infringements found.	No. of infringements found abated on re-visit.	No. of informations laid.	No. of convictions.
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	—
1927	18,069	19,379	950	749	9	4	195	148	2	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 3,716, 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, 1927	310
New boats registered	17
Boats removed from register—broken up	2
Boats on register, 31st December, 1927	325
„ not seen in the district	18
„ regularly plying on the canal	206
„ „ „ on rivers and docks	101
„ re-registered on account of change of owners	14
„ on which contraventions occurred	*54

Five copies of the registration certificates were issued owing to the original certificates being worn out.

NATURE OF CONTRAVENTIONS :

Unregistered boats used as dwellings... ..	2
No certificate of registration on board	14
Registered lettering, &c., not legible	18
Leaky decks	16
Cabins requiring repainting	9
No water cask, and defective water casks and water tank	5
Dirty condition of cabins	1
Defective deck-lights	2
„ cabin floors	2
„ „ stoves	8
„ „ lockers	3

* Of this number 42 were registered by other authorities.

Written notices were issued to owners in 38 instances; verbal notices were given to masters in 37 instances, and to owners in 5 instances. All these notices have been complied with.

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 on any canal boat visiting the district.

Five motor-propelled boats and fifty-nine steam-propelled boats are registered by this authority.

DETAILS OF VISITS.

Three hundred and fifty boats were visited, which were registered as follows:—174 at Liverpool, 46 Runcorn, 4 Leigh, 4 Wigan, 36 Manchester, 24 Chester, 40 Blackburn, 19 Leeds, 3 Widnes.

All were "wide" boats, 23 being propelled by steam, 34 steam-towed, 6 motor-driven, and the remainder horse-drawn.

The number of inspections of these 350 boats which were plying on the canal was 2,746, and the population as follows:—

Men.....	723	Males over 14 years of age	723
Women.....	86	„ over 5 and under 14.....	3
Children.....	22	„ under 5 years of age	6
		Females over 12 years of age	86
		„ over 5 and under 12.....	6
		„ under 5 years of age.....	7
	<hr/>		<hr/>
	831		831
	<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.)

Eight children of school age were found on canal boats during the year. Two 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. One boat of this class has been registered as a canal boat, under this order, during the year.

The inspectors of the Port Sanitary Authority during the year made 970 inspections, and 35 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 may be mentioned—The Public Health (Meat) Regulations, 1924, and the Public Health (Preservatives, etc., in Food) Regulations, 1925. The former 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 with the assistance and co-operation of the traders concerned a great advance in the hygienic handling of meat has been achieved. The latter regulations prohibit the use of all injurious preservatives and colouring matters in foodstuffs.

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 and two knackers' yards in the city, but only six of the slaughterhouses are being used to any great extent. Of these three are used solely for the slaughter of horses for export to Belgium and France for human food.

The inspection of these private slaughterhouses, which are widely distributed over the city, takes up much of the time of the staff.

During the past year 32,690 animals were slaughtered in these slaughterhouses, and all carcasses were inspected before being allowed to leave 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 at two or three of the private slaughterhouses; 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 slaughtering on Sundays will cease.

The number of animals slaughtered in the city again shows a large increase, which demonstrates the increasing importance of the city as a meat distributing centre. The following statistics prove the necessity of a definite and systematic food inspection, viz.:—During the year 448,947 animals were slaughtered at the central abattoir; 32,690 animals were slaughtered in private slaughterhouses; 45,758 were brought in already dressed from other centres, and 540,864 chilled and frozen carcasses were sold from the Gill Street meat market.

There were 4,285 animals which shewed abnormal conditions, and a detailed examination was made of each. During the year a few very interesting cases of tuberculosis occurred, viz.:—Generalised tuberculosis in a foetal calf, extensive tuberculosis in a goat, and on two occasions advanced tuberculosis in sheep. A horse was also found to be affected with advanced tuberculosis.

In the case of the foetal calf the cow from which it was taken was a fat animal from a farm near the city, and was slaughtered at the abattoir. On post-mortem examination the cow was found to be affected with advanced tuberculosis, including tuberculosis of the uterus. The calf, which was in seventh month of gestation, was affected in the head, lungs, liver, and spleen, together with the associated lymph glands, and all the principal lymph glands of the carcase shewed large tubercular areas.

Tuberculosis in sheep is very rare, but two definite cases were observed, in one case attacking the bones, viz., the ribs and vertebræ, while in the other a definite lymph gland affection, together with a tubercular pleurisy, was found. The specimens were mounted and sent to the museum of the School of Hygiene.

A goat sent from Ireland for slaughter was found on post-mortem examination to be affected with advanced tuberculosis. There are not many goats slaughtered, but this is the first found to be affected with tuberculosis at the abattoir. In this case the head was mounted and sent to the museum. All the above unusual cases were confirmed bacteriologically by the City Bacteriologist.

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 thereby rendered 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 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. The 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 42 post-mortem examinations have been conducted by the inspectors, and of these 30 cows were found to be suffering from advanced tuberculosis and 12 from minor localised affections.

PRIVATE SLAUGHTERHOUSES.

There are 15 private slaughterhouses in the city, which 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 great congestion at 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. Of the 15 private slaughterhouses five are registered and ten are licensed; this shews a reduction of four licensed slaughterhouses when compared with 1920.

ABATTOIRS.

The condition of the present central abattoir has been commented upon during previous years, and it is gratifying to note that plans for a new abattoir and comprehensive meat market on the Stanley Cattle Market site have been prepared and were passed by the City Council in November. Tenders for the new premises have been accepted, and the scheme now awaits the sanction of the Ministry of Health, after a Public Enquiry has been held. The number of animals slaughtered in the city shews an increase of 92,216 animals when compared with 1926. Imported meat also shews an increase of 90,702 carcasses, while home killed dressed meat shews a decrease of 20,022 carcasses. The total number of carcasses sold from the meat markets, including animals slaughtered in the city, carcasses sent in already dressed, and imported carcasses (i.e., frozen and chilled meats) amounted to 1,022,501. In addition, 66,964 boxes and bags of meat and offal were sold in the markets.

ANIMALS SLAUGHTERED FOR HUMAN FOOD IN THE CITY

	Bulls	Bullocks.	Cows.	Heifers.	Calves.	Sheep.	Lambs.	Goats.	Swine.	Horses
Public Abattoir	251	12,910	15,912	1,682	27,059	47,868	306,222	223	36,820	—
Private slaughter-houses ...	—	130	303	29	1,143	260	5,901	4	23,381	1,539
TOTAL ...	251	13,040	16,215	1,711	28,202	48,128	312,123	227	60,201	1,539

There are no horse flesh shops in the city, but 1,564 horse carcasses were inspected and stamped by the food inspectors before leaving the slaughterhouse, with the exception of 25, which were rejected as unfit for human food.

CARCASSES TOTALLY OR PARTIALLY DESTROYED.

Disease.	No.	Disease.	No.
Abscess	32	Joint Ill	8
Asphyxia	263	Melanosis	1
Carcinoma	1	Neoplasms (Malig.)	5
Chondroma	1	Nephritis	3
Decomposition	40	Peritonitis	22
Distomatosis	45	Pleurisy	6
Dropsy	223	Pyæmia	3
Emaciation	87	Pneumonia	13
Enteritis	128	Septicæmia	6
Endocarditis	1	Septic Arthritis	42
Gangrene	1	„ Pericarditis	4
Gastritis	2	„ Mastitis	7
Gastro-enteritis	4	„ Metritis	13
Icterus	29	„ Mammitis	1
Immaturity	44	Swine Fever	24
Injury	176	Tuberculosis	1,726
Johne's Disease	1	Uraemia	2

During the year 1,439 carcasses were rejected as unfit for human food, in addition to 749 destroyed at the knackers' yards.

ORGANS DESTROYED

Disease.	No.	Disease.	No.
HEADS :—		SPLEENS :—	
Tuberculosis	670	Tuberculosis	719
Abscess	99	Abscess	4
Actinomycosis	28	Decomposition... ..	57
Injury	2	Sarcoma	1
Decomposition... ..	105	STOMACHS :—	
LUNGS :—		Tuberculosis	717
Tuberculosis	1,801	Abscess	4
Abscess	277	Neoplasms	2
Echinococci	1,352	Decomposition... ..	7
Pleurisy	128	Swine Fever Contact	70
Pneumonia	21	INTESTINES :—	
Aspirated Stomach contents		Tuberculosis	825
and Congestion	503	Abscess	2
Decomposition... ..	405	Decomposition... ..	7
Unclassified Cystic conditions	121	Swine Fever Contact	70
Melanosis	2	KIDNEYS :—	
Swine Fever Contact	70	Tuberculosis	957
Sarcoma	1	Cirrhosis	30
LIVERS :—		Necrosis	1
Tuberculosis	947	Decomposition... ..	3
Abscess	274	Sarcoma	1
Distomatosis	5,030	Cysts	26
Cav. Angeioma	87	UDDERS :—	
Echinococci	454	Tuberculosis	44
Decomposition... ..	425	Mammitis	72
Cirrhosis	837	Injury	8
Degenerated Cysts	578	Abscess	12
Swine Fever Contact	70	TAILS :—	
Sarcoma	1	Tuberculosis	—
Unclassified Cystic conditions	538	Decomposition... ..	17
HEARTS :—		TONGUES :—	
Tuberculosis	907	Injury	2
Pericarditis	6		
Decomposition... ..	133		
Swine Fever Contact	70		

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.
16,992	3,124	768	40	9,695	6,367	524

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 during the year. The wholesale depot in Queens Square, Liverpool, is the principal distributing centre in the country for imported fruit, and during the year 103,248 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 factories.	Pickle factories.	Food factories.	Knackers yards.	Total Visits Paid
7,058	28,716	32,615	39,282	3,884	55	48	580	119	112,357

Eighty-two samples of foodstuffs were obtained for bacteriological and analytical examination, including fish, shellfish, meat, fruit and tinned food. The following foodstuffs were condemned as unfit for human food, viz.:—Beef, mutton and lamb, 638,895 lbs.; wet and dry fish, 354,586 lbs.; mussels, cockles and winkles, 61 packages; crabs, lobsters, crayfish and prawns, 4,474 lbs.; poultry, 2,451 head; game, 449 head; rabbits, 5,539 head; hares, 49 head; fruit, 544,803 lbs.; vegetables, 215,130 lbs.; tinned foodstuffs, 29,741 tins; eggs, 540; egg pulp, 5,050 lbs.

DAIRIES, COWSHEDS AND MILKSHOPS.

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

The Milk Acts and Orders due largely to the educational propaganda work of this department, are being satisfactorily carried out; considerable progress has been made in regard to the hygiene of cowsheds and dairies, and the production and handling of milk. Many suggestions made by Inspectors of this department have been adopted, but there is still much to be done until the ideal is attained.

The Milk and Dairies Order, 1926, provides that :—

“As soon as possible after milking, the milk of each cow shall be removed from the cowshed to a suitable milk room.”

This requirement increased the work of the department considerably, owing to the difficulties which had to be overcome; apart from economic conditions, available yard space (which is very limited in town cowsheds), suitability of position for the milk room had to be considered. This involved the designing as well as the supervision, and in the majority of cases this has been done without reducing the cubic space of the cowsheds.

In all cases the cooling room has given complete satisfaction to the cowkeeper, particularly as regards the improved keeping qualities of the milk, suitable storage of milk utensils, and labour saving generally.

The work which preceded the provision of the milk cooling room enlightened the cowkeeper to the fact that little additional alteration and effort would bring his milk up to Grade “A” standard, and several cowkeepers are now seriously considering its production; already one cowkeeper is producing “Certified,” and one Grade “A” milk.

Amongst the recent changes in the working conditions of both cowkeeper and dairyman is the adoption of bottling. The bottle is a distinct hygienic gain; it greatly lessens the exposure of milk, and provides additional security against contamination both during distribution and in the home of the consumer.

Within the last few years road transport of milk has come into being, this is due to the rising efficiency of road vehicles which allows them to extend their range from 5 to 10-mile radius up to 50 miles and upwards. Approximately 50 per cent. of the milk produced outside Liverpool is brought in by road.

The milk supply of Liverpool is :—

Milk produced from 3,760 cows kept in the City...	11,280	gals.	per day.
Milk produced outside the City—rail transport ...	13,816	„	„
Milk produced outside the City—road transport...	13,120	„	„
	<hr/>		
	38,216	„	„
	<hr/>		

STATISTICS RESPECTING COWSHEDS.

						<u>1927</u>
Number of applications to keep cows on premises not previously						
	licensed	...	...	...	...	2
„ „	for re-issue of licence	...	...	...	...	1
„	cows applied for	...	...	...	...	63
„	„ granted	...	...	...	...	63
„	applications refused	...	...	...	...	0
„	„	for transfer to fresh tenants of cow-				
	sheds previously licensed	...				26
„	„	granted	...	...	...	26
„	„	refused	...	...	...	0
„	„	for additional stock	...	...	...	5
„	cowsheds on register 31st December, 1926	...				273
„	cows licensed to be kept within the city area	...				4,723

COWSHED INSPECTION.

						<u>1926.</u>	<u>1927.</u>
Number of inspections of cowsheds	...	...	...	...	...	2,198	1,700
„	found incorrect	...	...	...	...	72	59

Fifty-nine notices were issued to occupiers directing their attention to contraventions of regulations, which were at once complied with—prosecutions being unnecessary.

The number of cowsheds in the city during the years 1923 to 1927, 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.
1923	...	293	...	4,883	...	1
1924	...	291	...	4,832	...	3
1925	...	286	...	4,830	...	2
1926	...	279	...	4,727	...	2
1927	...	273	...	4,723	...	2

MILKSHOPS.

			<u>1926.</u>		<u>1927</u>
Number of new applications for registration	...		28	...	15
„ transfers „	„	„	75	...	79
Total number of „	„	„	116	...	102
Number of applications granted	...	...	103	...	94
„ „ withdrawn	...	...	5	...	7
„ „ in abeyance	...	...	8	...	1
Number of milkshops on the register at the end of 1923	...			...	743
„ „ „ „		1924	...	...	790
„ „ „ „		1925	...	...	787
„ „ „ „		1926	...	...	797
„ „ „ „		1927	...	...	790

DAIRIES AND MILKSHOPS.

			<u>1926.</u>	<u>1927.</u>
Number of inspections of dairies and milkshops	...		7,216	5,884
„ found incorrect	...	...	68	52

Fifty-two caution notices were issued to occupiers of milkshops for contraventions of the regulations, which were at once complied with—prosecutions being unnecessary.

Designations.	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 containers, it shall be delivered in bottles or containers of not less than 2 gallons capacity sealed with disc and cap with name of dealer and bottling establishment, also date and designation.	Except where delivered as stated in sealed containers, it shall be delivered in bottles or containers of not less than 2 gallons capacity sealed with disc and cap with name of dealer and bottling establishment, also 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. 3. Suitable labels to be attached with date and designation.							Not more than 100,000 bacteria per c.c.

MILK (SPECIAL DESIGNATIONS) ORDER, 1923.

Although the order has been in force since 1923, the quantity of designated milk sold has been small, but has materially increased during the year under review.

To produce "graded milk" a considerable amount of initial expenditure is entailed, especially for the production of the "tubercle-free milk." In comparison the price of designated milk is higher than that of ordinary (bulk) milk; and until such time as the price is reduced the demand for graded milk will be relatively small, as unfortunately the fact that one milk is dearer than another is the only circumstance considered by the average person, and the difference in the quality is frequently ignored.

It is hoped that by educating public opinion on this matter, the value of the higher grade article will be recognised; and in time increase the public demand for this wholesome and nutritious food.

During the past year there has been an increase in the quantity of "graded milk" supplied to Liverpool, as the following figures show:—

PRODUCERS.						1926	1927.
No. of Producers supplying "Certified"	...	...	...			3	5
" " " "Grade A" T.T.	...	...	...			None	5
" " " "Grade A"	...	...	...			1	2
BOTTLERS.							
No. of Vendors licensed to bottle "Grade A" T.T.	...					None	1
" " " "Grade A"	...	...	...			1	1
VENDORS.							
No. of Vendors licensed to sell "Certified"	...	...	...			6	10
" " " "Grade A" T.T.	...	...	...			3	4
" " " "Grade A"	...	...	...			1	2

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>1926.</u>	<u>1927.</u>
Number of premises under inspection ...	1,143	1,155
„ visits made ...	2,144	2,459
„ caution notices issued ...	12	15

PIGGERIES.

In 1927, 13 applications, involving the keeping of 110 pigs, were made and granted.

There are now on the register 105 piggeries licensed for the keeping of 2,261 pigs, the average number kept being 1,105; 433 visits of inspection to premises were made during the year.

TUBERCULOSIS AND THE MILK SUPPLY.

The two principal aspects of milk supervision which concern 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 1927 :—

The year has not been marked by any changes of moment regarding the milk supply of the city. No new legislation, either general or local, has been introduced. The Milk and Dairies Order, 1926, created little if any alteration in local methods, and, as was anticipated, the authorities of country districts do not seem to have enforced its provisions with any vigour.

Approximately one-third of the total milk supply is produced within the city, and the remaining two-thirds is sent in from country districts. The tendency is for the country-produced milk to increase in amount, while that produced locally remains stationary or falls slightly.

MILK PRODUCED WITHIN THE CITY.

In general, it may be said that the milk produced by local cowkeepers approximates to the standard of Grade A milk in cleanliness, though only one local producer has taken advantage of the Special Designations Order to become licensed to produce and sell his milk as Grade A.

The standard required is not very exacting, and might reasonably be expected as a minimum for all milk.

The provision of veterinary supervision required for Grade A herds has for some years been applied to all cattle within the city.

Approximately 3,760 cows form the city cattle population. The total licensed city cowsheds number 273, with provision for 4,715 cows.

During the year, clinical examination of these cattle revealed, in addition to various other scheduled diseases, eleven cases of tuberculosis of the udder.

Of sixty cows notified by the owners or their veterinary surgeons to the department as suspicious, six proved to have tuberculosis of the udder.

Of 253 samples of milk taken by the food and drugs inspectors, 10 were referred to the department as tuberculous, subsequent examination of the involved herds resulting in the detection of two cases of tuberculosis of the udder. In the other 8 cases the cows were proved to be non-tuberculous on the day of inspection, showing that the diseased animal had been removed, or that the contamination had ceased.

The following is a table of the veterinary inspection of cows in the town cowsheds, together with the 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.	Samples of milk from suspected town cows examined microscopically.	No. of Cows examined.	No. of Cows with Tuberculosis of the udder.
1922	100	8	92	—	1,535	6 or 0·39%
1923	130	6	124	—	1,849	15 or 0·81%
1924	714	17	697	90	8,949	26 or 0·28%
1925	780	63	717	71	11,161	21 or 0·18%
1926	825	48	777	70	10,515	20 or 0·19%
1927	939	59	880	95	12,148	19 or 0·15%

The supervision of general hygiene conditions and statutory sanitary requirements is conducted by an inspector of the department, who reports an improvement.

In all, 1,652 routine visits were made, and in addition 91 special visits were made to supervise the disinfection of premises from which diseased cattle had been removed.

MILK PRODUCED OUTSIDE THE CITY.

Since 1st September, 1926, the onus of taking action where country milk is involved has been placed upon the authority of the producing district by the operation of the Milk and Dairies (Consolidation) Act, 1915.

The detection of infected supplies rests with the Medical Officer of Health, who causes samples from bulk to be taken as the milk comes into the City.

Infected samples are reported to the Medical Officer of the county of origin, whose duty it is to arrange for suitable investigation at the source.

The Chief Veterinary Officer has made a practice of being present at first examinations of suspected herds, but as the work is done by the county officers, no complete table of statistics can be shewn as was formerly done.

During the year, twenty such visits have been made to premises situated in the Counties of Cheshire (9), Lancashire (4), Shropshire (4), Flint (3), Denbigh (2). The figures in parentheses show the number of farms involved in each county, but it must be observed that two of the involved farms were not visited owing to the fact that they were in a Foot and Mouth Disease infected area at the time.

CORPORATION MILK SUPPLIES.

The Hospitals Committee have for some time been purchasing Grade A tuberculin tested milk for drinking purposes. On January 1st, 1928, the Infant Welfare Centres were supplied with Grade A (T.T.) milk.

Preliminary work in testing the herds and advising farmers as to detailed methods has involved considerable time, in addition to the routine examinations which have been carried out during the year. Up to the end of the year 141 cattle had been tested with the combined ophthalmic and intradermal tuberculin tests, and the necessary reports were forwarded to the Ministry of Health.

The following table relates to routine examinations of these special farms :—

	No. of farms.	No. of visits.	No. of cows examined.
Hospitals	7	21	788
Infant Welfare Centres	8	24	1,273

The examinations are made quarterly. Changes in the sources of supply during the year explain the fact that the same farms have not in each case been visited four times.

In addition to the routine examinations, the hospitals milk supply for cooking purposes was found tuberculous on five occasions, involving further visits in company with the veterinary officers of the respective areas, these figures being included in those referred to in connection with the country milk supply.

One case of tubercle in milk from the farms supplying the Infant Welfare Centres occurred. The usual visits to the farms in question were made, in order to trace the infection, in conjunction with the county authorities.

BACTERIOLOGICAL EXAMINATION OF MILK.

From January, 1901, to December, 1927, 11,562 samples of milk from sources outside the city were submitted for bacteriological examination, and 763 of the samples were found to be contaminated by tubercle bacilli, this being equal to 6.5 per cent.

During the same period 6,088 samples of milk from town cowkeepers were submitted for bacteriological examination, and 256 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 affected.
	No. taken.	Tubercular.	Percentage Tubercular.	
1919	346	26	7.51	6
1920	800	56	7.0	18
1921	507	54	10.65	23
1922	590	53	8.98	34
1923	593	62	10.45	36
1924	549	57	10.38	25
1925	482	36	7.46	29
1926	449	34	7.57	36
1927	796	25	3.14	21

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
1927	253	10	3.95	12,148	19

SALE OF FOOD AND DRUGS ACTS

and various Orders and Regulations relating to food supplies.

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.

	1926.	1927.
Number of samples purchased on week-days in town	1,167	1,167
„ informations	16	17
„ samples taken at railway stations on week-days	1,200	1,108
„ informations	15	15
„ samples purchased on Sundays in town	169	144
„ informations	1	4
„ samples taken at railway stations on Sundays	67	84
„ informations	0	0
„ samples taken at city hospitals	111	197
„ informations	0	0
„ samples taken at Corporation infant welfare centres and day nurseries ...	314	343
„ informations	0	0
„ samples taken at other institutions ...	405	447
„ informations	3	0

MARGARINE ACT.

	1926.	1927.
Number of visits to wholesale dealers in margarine..	80	29
„ visits to shops	2,755	2,986
„ visits to other places	1,982	1,631

PUBLIC HEALTH (MILK AND CREAM) REGULATIONS, 1912 AND 1917.

Report for the year ending 31st December, 1927.

1. MILK AND CREAM NOT SOLD AS PRESERVED CREAM.

Number of samples examined for the presence of a preservative :—

Milk, 3,490; cream, 32.

Number in which a preservative was reported to be present :—

(a) Milk 0

(b) Cream 3

(Vendors cautioned.)

2. CREAM SOLD AS PRESERVED CREAM.

- (a) Instances in which samples have been submitted for analysis to ascertain if the statements on the label as to preservatives were correct :—

Number of samples taken	...	...	...	11
Correct statements made...	...	...	...	11

- (b) Determinations made of milk fat in cream sold as preserved cream :—

Above 35 per cent.	11
--------------------	-----	-----	-----	----

- (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 1926 and 1927 for special examination was 89 and 57, 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 licenses issued under this act during the year 1927 was 25.

SUMMARY OF SAMPLES OBTAINED IN WHICH LEGAL PROCEEDINGS WERE INSTITUTED DURING THE YEAR
ENDING DECEMBER 31st, 1927, TOGETHER WITH RESULT.

No. of Infor- mations.	Nature of Sample.	Nature of Offence.	RESULT OF LEGAL PROCEEDINGS.				
			No. of convic- tions.	Withdrawn on payment of costs.	Withdrawn and dismissed without costs.	Fines.	Costs.
15	Milk	Adulterated with water	14	1	—	£ s. d. 38 0 0	£ s. d. 22 11 6
16	„	Deficient in milk-fat	14	1	1	48 0 0	17 17 0
2	„	Deficient in milk-fat and adulterated with water.....	2	—	—	4 0 0	2 2 0
2	„	Coloured with Annatto	2	—	—	4 0 0	2 2 0
1	„	Coloured with aniline dye of the nature of methyl orange	—	1	—	—	1 1 0
36			32	3	1	£94 0 0	£45 13 6

Summary of Samples submitted for analysis from January 1st to December 31st, 1927,
and other statistical details.

INFORMAL SAMPLES.				Nature of Sample.	FORMAL SAMPLES.					
Number taken.	Number genuine.	Adulterated.			Number taken.	Number genuine.	Adulterated.		Number caught.	Informations.
		Sch'dule A.	Sch'dule B.				Sch'dule A.	Sch'dule B.		
1	1	—	—	Arrowroot.....	26	26	—	—	—	—
3	2	1	—	Barley	59	58	1	—	2	—
48	48	—	—	Beer and Stout	—	—	—	—	—	—
19	19	—	—	Bread	7	7	—	—	—	—
46	46	—	—	Butter	506	504	2	—	2	—
1	1	—	—	Cake flour	7	7	—	—	—	—
20	20	—	—	Cheese	18	18	—	—	—	—
—	—	—	—	Cocoa	57	57	—	—	—	—
29	28	1	—	Condensed milk	—	—	—	—	1	—
1	1	—	—	Coffee and mixtures	113	113	—	—	—	—
2	2	—	—	Corn flour	23	23	—	—	—	—
164	164	—	—	Confectionery	29	27	2	—	2	—

SUMMARY OF SAMPLES, &c.—Continued.

INFORMAL SAMPLES.				Nature of Sample.	FORMAL SAMPLES.					
Number taken.	Number genuine.	Adulterated.			Number taken.	Number genuine.	Adulterated.		Number cautions.	
		Sch'dule A.	Sch'dule B.				Sch'dule A.	Sch'dule B.		
44	43	1	—	Condiments and spices	189	177	6	6	7	—
—	—	—	—	Cream of tartar	41	39	2	—	2	—
32	29	3	—	Cream	—	—	—	—	3	—
11	11	—	—	Cream preserved	—	—	—	—	—	—
7	7	—	—	Custard powder	13	13	—	—	—	—
5	5	—	—	Dripping	3	3	—	—	—	—
57	55	2	—	Dried fruits	3	3	—	—	2	—
94	93	1	—	Drugs	8	8	—	—	1	—
1	1	—	—	Egg substitute powder	2	2	—	—	—	—
2	2	—	—	Flour.....	34	33	—	1	—	—
—	—	—	—	Ground almonds	30	30	—	—	—	—
19	19	—	—	Honey	—	—	—	—	—	—
42	42	—	—	Jam, jellies and marmalade	70	68	2	—	2	—

SUMMARY OF SAMPLES, &c—continued.

INFORMAL SAMPLES.				FORMAL SAMPLES.						Infor- mations.
Number taken.	Number genuine.	Adulterated.		Nature of Sample.	Number. taken.	Number genuine.	Adulterated		Number caut'nd.	
		Sch'dule A.	Sch'dule B.				Sch'dule A.	Sch'dule B.		
16	16	—	—	Lard	104	103	1	—	1	—
12	12	—	—	Lemon cheese	—	—	—	—	—	—
107	106	1	—	Margarine.....	34	33	1	—	2	—
850	816	24	10	Milk.....	2640	2425	154	61	122	36
—	—	—	—	Do. skimmed	2	2	—	—	—	—
—	—	—	—	Do. separated	5	5	—	—	—	—
—	—	—	—	Do. sterilised	35	35	—	—	—	—
—	—	—	—	Do. butter	2	2	—	—	—	—
2	2	—	—	Oatmeal and preparations.....	39	39	—	—	—	—
6	6	—	—	Preserved peas.....	—	—	—	—	—	—
4	3	—	1	Rice and ground rice	136	109	6	21	6	—
—	—	—	—	Self-raising flour	59	59	—	—	—	—
1	1	—	—	Sugar.....	56	56	—	—	—	—

SUMMARY OF SAMPLES, &c.—continued.

INFORMAL SAMPLES.				Nature of Sample.	FORMAL SAMPLES.					
Number taken.	Number genuine.	Adulterated.			Number taken.	Number genuine.	Adulterated.		Number caught.	Informations.
		Sch'dule A.	Sch'dule B.				Sch'dule A.	Sch'dule B.		
26	26	—	—	Syrup and treacle	2	2	—	—	—	—
1	1	—	—	Tapioca	52	52	—	—	—	—
2	1	1	—	Temperance beverages	45	43	2	—	2	—
19	18	—	1	Tinned and potted meats	6	6	—	—	—	—
27	24	1	2	Tinned and potted fish	2	2	—	—	1	—
12	12	—	—	Tinned fruits	—	—	—	—	—	—
5	5	—	—	Vinegar	3	3	—	—	—	—
7	7	—	—	Wines and spirits	41	41	—	—	—	—
76	74	2	—	Miscellaneous	202	197	4	1	4	—
1821	1769	38	14		4703	4430	183	90	162	36

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 :—

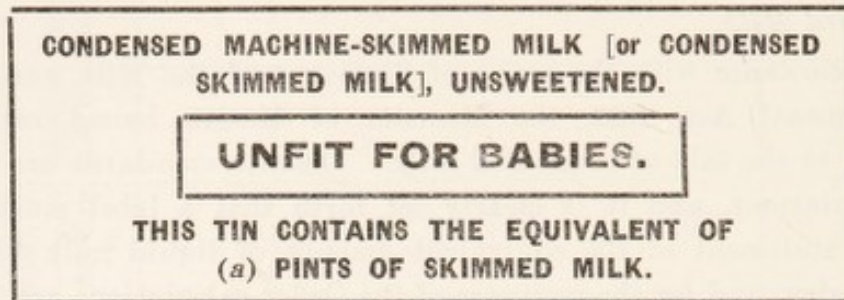
1. The label may not be as described.
2. The statement of equivalence may be incorrect.
3. The standard of composition may be infringed.

Labelling, etc.	Definition of " Milk " for purpose of Regulations.	Composition required under Regulations.																					
CONDENSED MILK.																							
<p>Any container to be labelled as condensed milk with name and address of manufacturer or dealer.</p> <p>The equivalent weight in pints of milk.</p> <p>Base of skimmed milk (in $\frac{1}{2}$ pint) " Unfit for Babies."</p> <p>Labelling as above not required if for export or in tin not exceeding 5 lbs. or in a refreshment room or restaurant for consumption on premises).</p> <p>Imports into England or Wales unless in conformity with above.</p>	<p>MILK—12·4% of milk solids, including not less than 3·6% of milk fat.</p> <p>SKIM MILK—Milk which contains not less than 9% of milk solids other than milk fat.</p>	<p>All condensed milk shall contain not less than the appropriate percentage of fat and milk solids as follows :—</p> <table> <tr> <td></td><td>% Fat.</td><td>% Milk Solids.</td></tr> <tr> <td>Full Cream—</td><td></td><td></td></tr> <tr> <td>Unsweetened</td><td>9·0</td><td>31·0</td></tr> <tr> <td>Sweetened</td><td>9·0</td><td>31·0</td></tr> <tr> <td>Skimmed Cream—</td><td></td><td></td></tr> <tr> <td>Unsweetened</td><td>—</td><td>20·0</td></tr> <tr> <td>Sweetened</td><td>—</td><td>26·0</td></tr> </table> <p>Samples may be obtained as under Food and Drugs Acts.</p>		% Fat.	% Milk Solids.	Full Cream—			Unsweetened	9·0	31·0	Sweetened	9·0	31·0	Skimmed Cream—			Unsweetened	—	20·0	Sweetened	—	26·0
	% Fat.	% Milk Solids.																					
Full Cream—																							
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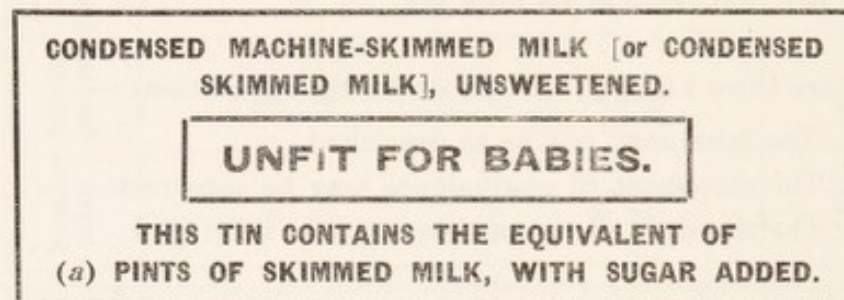
The Public Health (Condensed Milk) Amendment Regulations, 1927, dated November 14th, 1927, made by the Minister of Health.

They come into operation on the 1st day of September, 1928, and are designed as in the (Dried Milk) Amendment Regulations to give greater prominence to the words " unfit for babies " in the labelling of the tins :—

In the case of skimmed milk (unsweetened) :—



In the case of skimmed milk (sweetened) :—



(a) The prescribed declaration shall be printed in dark block type upon a light coloured ground.

(b) There shall be a surrounding line enclosing the declaration, and in the cases in which the words "unfit for babies" are required to be used there shall be another such line enclosing those words.

(c) The distance between any part of the words "unfit for babies" and the surrounding line enclosing those words shall be not less than one-sixteenth of an inch.

(d) No matter other than that hereinbefore prescribed shall be printed within either surrounding line.

(e) The type used for the declaration shall not in any part be less than one-eighth of an inch in height (or if the gross weight of the tin or other receptacle does not exceed twelve ounces, one-sixteenth of an inch in height) and the type used for the words "unfit for babies" shall not be less than twice the height of any other part of the declaration.

During the year, 29 samples of condensed milk were examined, one of which was below standard, and the vendor was 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>DRIED MILK.</p> <p>Receptacle to be properly labelled, being equivalent in pints of milk.</p> <p>A. Dried Full Cream— no further matter required.</p> <p>B. Dried $\frac{3}{4}$ Cream, and C. Dried $\frac{1}{2}$ Cream— partly skimmed milk containing 26%–26% milk fat. Label "Should not be used for babies except under medical advice."</p> <p>D. Dried $\frac{1}{4}$ Cream— dried skimmed milk containing less than 8% milk fat. Label, "Unfit for Babies."</p>	<table border="1"> <thead> <tr> <th></th><th>% Milk</th><th>% Milk</th></tr> </thead> <tbody> <tr> <td>Milk ...</td><td>3.6</td><td>12.4</td></tr> <tr> <td>$\frac{3}{4}$ Cream Milk ...</td><td>2.7</td><td>11.6</td></tr> <tr> <td>$\frac{1}{2}$ Cream Milk ...</td><td>1.8</td><td>10.8</td></tr> <tr> <td>$\frac{1}{4}$ Cream Milk ...</td><td>.9</td><td>9.9</td></tr> </tbody> </table> <p>"Skimmed milk" means milk which contains not less than 9% of milk solids other than milk fat.</p>		% Milk	% Milk	Milk ...	3.6	12.4	$\frac{3}{4}$ Cream Milk ...	2.7	11.6	$\frac{1}{2}$ Cream Milk ...	1.8	10.8	$\frac{1}{4}$ Cream Milk9	9.9	<p>Dried milk must contain not less than the following percentage of milk fat:—</p> <p>A. Milk, full cream ... 26%</p> <p>B. Milk, $\frac{3}{4}$ cream ... 20%</p> <p>C. Milk, $\frac{1}{2}$ cream ... 14%</p> <p>D. Milk, $\frac{1}{4}$ cream ... 8%</p> <p>Samples may be obtained as under Food & Drugs Acts.</p>
	% Milk	% Milk															
Milk ...	3.6	12.4															
$\frac{3}{4}$ Cream Milk ...	2.7	11.6															
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$\frac{1}{4}$ Cream Milk9	9.9															

The Public Health (Dried Milk) Amendment Regulations, 1927, dated November 14th, 1927, made by the Minister of Health, come into operation on the 1st day of September, 1928.

The amendment regulations are primarily designed to secure that in labelling of dried skimmed milk greater prominence shall be given to the words "unfit for babies," and that those words shall also be printed on the outside of any paper or other wrapper in which tins of such milks may be enclosed.

In the case of partly skimmed milk, that is to say, dried milk containing not less than 8 per cent. but less than 26 per cent. of milk fat:—

DRIED PARTLY SKIMMED MILK
((b) CREAM).
SHOULD NOT BE USED FOR BABIES EXCEPT
UNDER MEDICAL ADVICE.
THIS TIN CONTAINS THE EQUIVALENT OF
(a) PINTS OF (b) CREAM MILK.

In the case of skimmed milk, that is to say, dried milk containing less than 8 per cent. of milk fat:—

DRIED MACHINE-SKIMMED MILK.
[OR DRIED SKIMMED MILK.]

UNFIT FOR BABIES.

THIS TIN CONTAINS THE EQUIVALENT OF
(a) PINTS OF SKIMMED MILK.

(a) The prescribed declaration shall be printed in dark block type upon a light coloured ground.

(b) There shall be a surrounding line enclosing the declaration and in the case in which the words "unfit for babies" are required to be used there shall be another such line enclosing those words.

(c) The distance between any part of the words "unfit for babies" and the surrounding line enclosing those words shall not be less than one-sixteenth of an inch.

(d) No matter other than that hereinbefore prescribed shall be printed within either surrounding line.

(e) The type used for the declaration shall not in any part be less than one-eighth of an inch in height (or if the gross weight of the tin or other receptacle does not exceed twelve ounces, one-sixteenth of an inch in height) and the type used for the words "unfit for babies" shall not be less than twice the height of any other part of the declaration.

During the year 10 samples of dried milk were examined, and all of them were correct.

ARSENIC IN IMPORTED APPLES.

The subject of the presence of arsenic deposit on imported apples still continues to engage the attention of the Food Department.

The United States authorities have now arranged a system of inspection and certification of consignments of apples intended for export to this country. Certificates (export form certificate) are withheld where the chemical examination of samples indicates that arsenic is present in excess of 1/100 grain per pound. This method has been introduced following on a new process of washing the fruit which has been instituted; this appears to have overcome the previous difficulty in removing the deposit. The analysis checks the efficiency of washing. The control at present exercised by the United States authorities applies to apples and pears from the Pacific Coast group of States, i.e., Colorado, Utah, Montana, Idaho, Washington, California, Oregon and New Mexico.

During the present season numerous samples of apples have been examined for the presence of arsenic from various consignments from the above States, and it is very exceptional to find the quantity to exceed 1/100 grain per pound.

An examination of samples of Australian apples imported into this port showed no evidence of the presence of residue from arsenic spray.

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 five years 1923 to 1927 :—

1923	...	...	...	...	...	...	13
1924	...	...	...	...	...	...	61
1925	...	...	...	...	...	...	30
1926	...	...	...	...	...	...	52
1927	...	...	...	...	...	...	45

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 came or 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, 1927.

During the year 1927, 33,654 specimens were examined for the Public Health, Port Sanitary, Water and Baths and Wash-houses departments, as compared with 31,439 for the year 1926. 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.

The following samples have been examined:—

MILK AND OTHER FOODSTUFFS.

(i) *Fresh Milks*—

City Hospitals and other Institutions ...	234
Maternity and Child Welfare Institutions ...	339
Milk Shops, Railway Stations, etc. ...	534
	— 1,107

(ii) *Tinned Milks* ... 15

(iii) *Other foodstuffs*.—Shell-fish, tinned and potted meats, etc. ... 44

1,166

(i) *Fresh Milks*.—City Hospitals: Of the 234 samples examined 46 shewed no evidence of *B. coli* in 1 c.c., 15 contained *B. enteritidis* sporogenes in 10 c.c., 7 contained streptococci, and *B. tuberculosis* was found in 13 samples. A bacterial count was also done in 31 of these samples.

Maternity and child welfare institutions: Of the 339 samples examined 65 shewed no evidence of *B. coli* in 1 c.c., 15 contained *B. Enteritidis* sporogenes in 10 c.c., and *B. tuberculosis* was found in 2 samples. A bacterial count was done in 217 samples.

Milk shops, Railway stations, etc.: Of the 534 samples examined 86 shewed no evidence of *B. Coli* in 1 c.c., 38 contained *B. Enteritidis*

sporogenes in 10 c.c., 2 contained streptococci, and *B. tuberculosis* was found in 26 samples. A bacterial count was also done in 75 of these samples.

Thus, in 1,107 samples of milk, 41 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 15 samples of tinned milks examined, 9 were sterile, and 6 shewed no organisms of the food-poisoning group.

(iii) *Other Foodstuffs*.—There were 44 samples of other foodstuffs examined as follows:—

(a) Tinned and potted meats	...	...	...	9
(b) Meat, and other, pies	...	...	...	26
(c) Shell-fish	...	...	...	8
(d) Margarine	...	...	...	1

Included in (a) was a portion of a tin of corned beef, which was proved to be putrefactive, but did not contain any organisms of the food-poisoning group. Some of the meat pies (b) gave very unsatisfactory results, organisms of the mesentericus group being found. None of the other specimens call for any special comment.

WATER.

There were 363 samples of water examined, viz. :—

For the Water Engineer—

Daily samples	305
---------------	-----	-----	-----	-----	-----	-----	-----

Monthly samples—

Prescot—Vyrnwy	12
----------------	-----	-----	-----	-----	----

Rivington	12
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George Holt well	10
------------------	-----	-----	-----	-----	----

John Holmes well	9
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Dudlow Lane	10
-------------	-----	-----	-----	-----	----

53

Special samples—

In connection with Withnell supply	5
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363

The water throughout the year, whether from the wells or from Prescott, was, from a bacterial standpoint, satisfactory.

RATS, &c.

During the year, 1,194 rats from warehouses, etc, 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... ..	805	7	8,092	8,904
Maternity and Child welfare institution	6	4	108	118
Private practitioners, etc. ...	347	6	1,672	2,025
	<hr/>	<hr/>	<hr/>	<hr/>
	1,158	17	9,872	11,047
	<hr/>	<hr/>	<hr/>	<hr/>

(b) Swabs from suspected cases of Vincent's Angina :—

	Posi- tive.	Nega- tive.	Total.
City hospitals	18	13	31
Private practitioners, etc. ...	19	20	39
	<hr/>	<hr/>	<hr/>
	37	33	70
	<hr/>	<hr/>	<hr/>

(c) Blood from suspected cases of typhoid fever :—

	Positive.	Negative.	Total.
City hospitals	59	73	132
Private practitioners, etc. ...	13	27	40
Maternity and child welfare institution	—	1	1
	<hr/>	<hr/>	<hr/>
	72	101	173
	<hr/>	<hr/>	<hr/>

(d) Urine and faeces from suspected cases of typhoid fever, etc. :—

	Posi- tive.	Doubt- ful.	Nega- tive.	Total.
City hospitals	38	6	278	322
Private practitioners, etc. ...	1	1	22	24
Maternity and child welfare institution	—	—	2	2
	<hr/>	<hr/>	<hr/>	<hr/>
	39	7	302	348
	<hr/>	<hr/>	<hr/>	<hr/>

(e) Sputa, etc., from suspected cases of tuberculosis :—

	Posi- tive.	Doubt- ful.	Nega- tive.	Total.
City hospitals and other institutions	15	1	109	125
Maternity and child welfare institutions	—	—	8	8
Private practitioners, etc. ...	269	1	1,259	1,529
	<hr/>	<hr/>	<hr/>	<hr/>
	284	2	1,376	1,662
	<hr/>	<hr/>	<hr/>	<hr/>

(f) Anthrax Infection : 30 specimens of tissues, swabs, etc., were examined, chiefly for the city hospitals, and *B. Anthracis* was found in 3 cases.

(g) Vaccines : 7 vaccines were prepared from specimens sent from the city hospitals and from maternity and child welfare institutions.

(h) Miscellaneous : 781 specimens of tissues, secretions, fluids, etc., were examined, chiefly for the city hospitals and maternity and child welfare institutions, etc.

VENEREAL DISEASES.

The following specimens have been examined from persons known, or suspected, to be suffering from venereal diseases :—

	Positive.	Doubtful.	Negative.	Total.
Clinics —				
Wassermann reactions	1,443	37	2,243	3,723
For Gonococci	56	3	552	611
	1,499	40	2,795	4,334
Hospitals, Private Practitioners, &c.				
Wassermann reactions	1,778	31	2,550	4,359
For Gonococci	104	40	583	727
For Spirochoetes	—	—	9	9
Still-born infants	12	2	283	297
For ophthalmia neonatorum ...	20	3	29	52
	1,914	76	3,454	5,444
	3,413	116	6,249	9,778

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 the still-born infants examined, those giving positive evidence of syphilis amount to over 4 per cent.

The cases of ophthalmic neonatorum shewing positive evidence of gonococci amount to over 38 per cent.

MATERIAL FROM ANIMALS WITH SUSPECTED INFECTION.

For Tuberculous infection:—Of the 36 specimens of tissues, etc., examined, 17 were tubercular, 3 very suspicious, and 16 shewed no evidence of infection.

For Anthrax infection:—There were 52 samples of shaving brushes, bristles, etc., and 9 specimens of tissues, etc., examined. All were negative.

Other specimens :—Two samples of baths water were examined for the Baths and Wash-houses department; neither of these samples call for any special comment.

COMPARATIVE SUMMARY OF EXAMINATIONS FOR 1926 AND 1927.

Description of specimens.	1926	1927
Milks and other food-stuffs	871	1,168
Waters	378	363
Rats, etc.	8,452	7,975
Material from infectious diseases in man:—		
Swabs for Diphtheria	9,851	11,047
Do. for Vincent's Angina	54	70
Blood for Typhoid fever	135	175
Urine and Faeces for Typhoid fever	178	348
Sputa, etc., for Tuberculosis	1,444	1,662
Anthrax infection	33	30
Vaccines	4	7
Miscellaneous	362	784
Venereal diseases	9,489	9,778
Material from animals with suspected infection:—		
Tissues, etc., for Tuberculous infection	17	36
Hair, shaving brushes, etc., for anthrax infection...	158	200
Tissues, etc., for anthrax infection	10	9
Other specimens	3	2
TOTALS ...	31,439	33,654

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 622 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 1927 the quantity of domestic and trade refuse collected and received was approximately 333,300 tons, and the quantity disposed of was approximately 393,800 tons, the latter figure including 45,700 tons of clinker residue and fluedust from destructors. The quantity dealt with per working day was 1,283 tons.

The whole of the 622 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 1927 street washing was carried out as follows:—

32 streets washed once a week;

1 street washed three times a week;

1 street washed daily; and

207 streets washed as occasion required.

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 1927 approximately 52,500 tons of street sweepings were collected and disposed of as manure and top dressing.

In connection with street watering upwards of $7\frac{1}{4}$ million gallons of water were distributed during the season, in addition to the large quantity used for street washing.

840,011 square yards of carriageway were treated with dust-laying compositions, of which 51,358 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, 1927, was 660.

There are 34 underground urinals with 317 stalls and 145 overground urinals with 553 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 1927 the number of bins in use of this type was 86,500, and the number of ashpits had been reduced from 65,000 to approximately 6,000. In addition, more than 77,000 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 1,386, which are emptied daily. Ashbins and ashpits at domestic premises are emptied approximately once weekly. The Bell-Cart service provides for the daily removal of domestic refuse from shops, business premises, and dwelling-houses, where no provision can conveniently be made for the storage of this description of refuse.

ASHPITS.

To assist in the abolition of ashpits within the city, the Health Committee applied for and obtained special powers under the Liverpool Corporation Act, 1927, Section 157, which are as follows:—

Section 467 (Regulation Dustbins) of the Act of 1921 is hereby repealed and the Corporation may by notice in writing require the

owner or occupier of any dwelling-house warehouse or shop to provide and maintain in proper order and condition galvanized iron dust-bins in lieu of ash-pits or ash-tubs or other portable receptacles for refuse and such bins shall be of such size and construction as may be approved by the Corporation and any owner or occupier who fails within fourteen days after notice given to him to comply with the requirements of the Corporation shall for every such offence be subject to a penalty not exceeding five shillings: Provided that in any case where the Corporation under this Section require a galvanized iron dust-bin to be provided in lieu of any ash-pit or ash-tub 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 galvanized iron dust-bin.

Several applications have already been received by owners who desire to take advantage of this section of the provisions.

Horse middens are emptied weekly, and oftener if required, and abattoir garbage is removed nightly, 4,561 tons of abattoir garbage being removed during 1927.

A All ashpit and ashbin refuse is emptied direct into the carts and motors, and all loaded carts and motors traversing the streets are covered.

T The refuse collected is disposed of by burning at four destructors, by disposing at sea, by sale to farmers, and by other channels for agricultural purposes. During the year 137,064 tons were burned at the destructors, 64,452 tons were deposited at sea by hopper barge, 25,782 tons were sold to farmers, and 128,089 tons were otherwise disposed of at tips and for agricultural purposes, etc. In addition, approximately 38,400 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 clabs, etc.

HOUSING.

REMOVAL OF INSANITARY PROPERTY.

The following summary indicates the number of houses which have been dealt with from the year 1865 to 1927 (inclusive) :—

Date	Powers	Approximate number of houses dealt with
1865 to 1904	The Liverpool Sanitary Amendment Act, 1864.	6,300
1905 to 1927	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 1927	(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 1927 (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, 1928 (including added areas) was as follows :—

Number of courts	253
Number of court houses	1,362
Approximate number of front houses contiguous to court houses	506

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.

Plans have been approved for the erection of 57 tenements on this site and 18 of the number have been completed.

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.

RATHBONE STREET AREA. (Confirming Order dated 1st August, 1913.)

At the present time all the property on this area in possession of the Corporation. The houses have been demolished with the exception of 23 houses, of which 16 are occupied, and 7 unoccupied and derelict.

SALTNEY STREET AND DUBLIN STREET AREAS. (Confirming Order dated 10th October, 1924.)

With regard to Saltney Street, all the houses are occupied, and the only change since the date of the Order is the demolition of eight houses which became in a dangerous condition.

With regard to Dublin Street, twelve houses have been purchased by the City Council and improved by the provision of through ventilation, yard space, bath, sanitary conveniences, and water supply. An arrangement has been made to acquire the remaining houses, and when the purchase is completed they may also be improved and rendered sanitary.

BLENHEIM STREET AREA. (Confirming Order dated 10th October, 1924.)

On this area the City Council has erected twenty-four tenements, but there still remains to be dealt with the property fronting St. Augustine Street and Silvester Street, a total of forty-eight houses. Of this number ten are in possession of the Corporation.

BURLINGTON STREET, HOPWOOD STREET, GT. RICHMOND STREET AND
RANKIN STREET AREAS.

BURLINGTON STREET AREA. (Confirming Order dated 11th January, 1924.)

Twenty-four tenements have been erected by the City Council on the site of the old school in Bond Street. There still remain to be dealt with 302 houses included in the scheme. Of this number sixteen are in possession of the Corporation.

GT. RICHMOND STREET, RANKIN STREET AND HOPWOOD STREET AREAS.

With the exception of eleven houses remaining to be purchased, the whole of the property on the Hopwood Street area has been acquired.

With regard to Gt. Richmond Street and Rankin Street areas all the properties have been acquired, and the question of erecting new tenements is under consideration.

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 was 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 were considered by the Committee, but up to the present no action has been taken in regard to the proposals submitted by the owners, mainly owing to the difficulty of providing accommodation for the dispossessed.

RE-HOUSING SCHEMES.

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 unsuitable for being dealt with as improvement schemes under Part 2 of the Housing Act, 1925. A report in respect to these areas has been submitted to the Housing Committee.

CENTRAL AREA HOUSING SCHEME.

In the Annual Report for 1926, reference was made to the Central Area Housing Scheme, indicating the number of houses, description, together with rentals, and other properties included in the area.

The first proceedings in regard to a proportion of this area now known as the Queen Anne Street Area, has been submitted in the form of an official representation which received the approval of the Council.

On 1st May, 1928, an Official Inquiry was held, and up to the present the decision of the Ministry of Health has not yet been received.

The following particulars were submitted by the Medical Officer of Health in regard to this unhealthy area :—

QUEEN ANNE STREET UNHEALTHY AREA.

During the past 20 years, 23 unhealthy areas have been dealt with under the Housing Acts, and approved by the Minister of Health, dealing with 2,966 unhealthy dwellings, and in addition, during the same period, 1,760 houses were dealt with under the Housing Acts, by closing order, and subsequently demolished, or rendered sanitary.

The type of house included in the areas dealt with during the past 20 years consisted of the true back-to-back court house, and contiguous back-to-back front house. There were also included in the unhealthy areas other front houses provided with small yards, separate water-closets, but generally speaking, they were in a bad state of repair and occupied as houses let-in-lodgings.

On January 19th, 1928, the following official representation was submitted to the Housing Committee in respect of the Queen Anne Street unhealthy area:—

THE HOUSING ACT, 1925.

QUEEN ANNE STREET UNHEALTHY AREA.

OFFICIAL REPRESENTATION OF THE MEDICAL OFFICER OF HEALTH.

*To the Urban Sanitary Authority
of the City of Liverpool.*

I, Arthur Augustus Mussen, Medical Officer of Health for the City of Liverpool, do hereby represent that in my opinion, within a certain area in the district of the Urban Sanitary Authority of the City of Liverpool, described in the Schedule hereto, there are (a) certain houses, courts and alleys which are unfit for human habitation, and that (b) the narrowness, closeness, and bad arrangements and bad conditions of the streets and houses and groups of houses within such area, and the want of light, air, ventilation, and proper conveniences and other sanitary defects, or one or more of such causes, are dangerous or injurious to the health of the inhabitants, either of the buildings in the said area or of the neighbouring buildings, and that the most satisfactory method of dealing with the evils connected with such houses, courts or alleys, and the sanitary defects in such area, is an improvement scheme for the re-arrangement and reconstruction of the streets and houses, within such area, or of some of such streets and houses.

QUEEN ANNE STREET UNHEALTHY AREA.

SCHEDULE.

1. An area situated on the west side of Soho Street commencing at the south-east corner and including No. 17, Soho Street, thence running in a northwardly direction to Travers Street, including No. 19, Soho Street, thence turning and running in a westwardly direction to and including Nos. 4 and 6, Travers Street, thence turning and running in a southwardly direction to and including No. 15, Springfield, thence turning and running in an eastwardly direction to and including No. 47, Springfield, thence turning and running in a northwardly direction along the gable wall of No. 47, Springfield, thence turning and running in an eastwardly direction in a broken line to and including No. 17, Soho Street, aforesaid.
2. Also commencing at and including No. 21, Soho Street, and running in a northwardly direction to Gomer Street to and including No. 29, Soho Street, thence turning and running in a westwardly direction to and including No. 10, Harker Street, thence turning and running in a southwardly direction to and including No. 2, Harker Street, thence turning and running in an eastwardly direction to and including No. 45, Travers Street, and continuing in a straight line to No. 21, Soho Street, aforesaid.
3. Also commencing at and including No. 33, Soho Street, and running in a northwardly direction to Queen Anne Street to and including No. 43, Soho Street, thence turning and running in a westwardly direction to and including Nos. 22 and 22a, Queen Anne Street, thence turning and running in a southwardly direction to Harker Place, thence turning and running in a westwardly direction along the north side of Harker Place, thence turning and running in a southwardly direction along the gable wall of No. 1, Gomer Street, to the front of No. 1, Gomer Street, thence turning and running in an eastwardly direction to and including No. 45, Gomer Street, thence turning and running in a northwardly direction to the rear wall of the premises No. 45, Gomer Street, thence turning and running in an eastwardly direction to No. 33, Soho Street, aforesaid, also No. 18, Queen Anne Street.
4. Also commencing at and including No. 47, Soho Street, and running in a northwardly direction to and including No. 49, Soho Street, thence turning and running in a westwardly direction to the east wall of the houses in No. 3 Court, Queen Anne Street, thence turning and running in a northwardly direction to Back Queen Anne Street, thence turning and running in a westwardly direction along the rear wall of the property No. 3 Court, Queen Anne Street, then turning and running in a southwardly direction to and including No. 37, Queen Anne Street, thence turning and running in an eastwardly direction to and including No. 43, Queen Anne Street, thence turning and running in a northwardly direction to the rear wall of No. 43, Queen Anne Street, thence turning and running in an eastwardly direction to and including No. 47, Soho Street, aforesaid.

5. Also commencing and including No. 33, Queen Anne Street, and running in a northwardly direction to the rear yard wall of No. 33, Queen Anne Street, and thence turning and running in a westwardly direction to and including No. 31, Queen Anne Street, thence turning and running in a southwardly direction to the yard wall of No. 29, Queen Anne Street, thence turning and running in a westwardly direction in a broken line to and including No. 27, Queen Anne Street, thence turning and running in a southwardly direction to and including No. 27, Queen Anne Street, thence turning and running in an eastwardly direction to No. 33, Queen Ann Street, aforesaid.

Also commencing at the east side of the passage adjoining No. 18, Back Queen Anne Street, and running across the passage in a westwardly direction to and including No. 18, Back Queen Anne Street, and continuing to and including No. 4, Back Queen Anne Street, thence turning and running in a southwardly direction to and including No. 15, Queen Anne Street, thence turning and running in an eastwardly direction to and including Nos. 21 and 23, Queen Anne Street, thence turning and running in a northwardly direction to the rear wall of Nos. 21 and 23, Queen Anne Street, thence turning and running along the rear wall of the premises No. 25, Queen Anne Street, thence turning and running in a northwardly direction to Back Queen Anne Street aforesaid.

6. Also commencing and including No. 53, Soho Street, and running in a northwardly direction to Torbock Street to and including No. 59, Soho Street, thence turning and running in a westwardly direction to and including No. 6, Torbock Street, thence turning and running in a southwardly direction to the south side of passage at the rear of No. 6, Torbock Street, thence turning and running eastwardly along the said passage to the gable wall of No. 11, Back Queen Anne Street, thence turning and running in a southwardly direction to Back Queen Anne Street to and including No. 11, Back Queen Anne Street, thence turning and running along in an eastwardly direction in a broken line to and including No. 23, Back Queen Anne Street, thence turning and running in a northwardly direction to the rear yard wall of No. 28, Torbock Street, thence turning and running in an eastwardly direction along the rear of the yard wall of the premises No. 28, Torbock Street, to the gable wall of No. 30, Torbock Street, thence turning and running in a southwardly direction to and including No. 25, Back Queen Anne Street, thence turning and running in a eastwardly direction to No. 53, Soho Street, aforesaid.

7. Also commencing and including No. 63, Soho Street, and running in a northwardly direction to and including No. 71, Soho Street, thence turning and running in a westwardly direction to Johnson Place, thence turning and running in a southwardly direction along the front of No. 10, Johnson Place, thence turning and running in an eastwardly direction to the gable wall of the houses in Dickson Terrace, thence turning and running in a southwardly direction to the southern boundary of the houses in Dickson Terrace, thence turning and

running in an eastwardly direction to the rear wall of No. 65, Soho Street, thence turning and running in a southwardly direction to the rear wall of No. 37, Torbock Street, thence turning and running in a westwardly direction to Johnson Place to and including No. 2, Johnson Place, thence turning and running in a southwardly direction to and including No. 31, Torbock Street, thence turning and running in an eastwardly direction to and including No. 39, Torbock Street, thence turning and running northwardly to the rear wall of No. 39, Torbock Street, thence turning and running in an eastwardly direction to No. 63, Soho Street, aforesaid.

Also commencing and including No. 29, Torbock Street, and running in a northwardly direction to the rear wall of No. 30, Mansfield Street, thence turning and running in a westwardly direction to the gable wall of No. 28, Mansfield Street, thence turning and running in a northwardly direction to and including No. 28, Mansfield Street, thence turning and running in a westwardly direction to and including No. 24, Wakefield Street, thence turning and running in a southwardly direction in a broken line to and including No. 1, Torbock Street, thence turning and running in an eastwardly direction to No. 29, Torbock Street, aforesaid, NOT including the workshop situated at the rear of No. 9, Torbock Street.

8. Also commencing and including No. 77, Soho Street, and running in a northwardly direction to and including No. 91, Soho Street, thence turning and running in a westwardly direction to the east gable wall of No. 78, Birkett Street, thence turning and running northwardly to and including No. 78, Birkett Street, thence turning and running in a westwardly direction to and including No. 76, Birkett Street, thence turning and running in a southwardly direction to and along the front of No. 14, Atkinson Street, and continuing in a straight line across No. 6 Court, Atkinson Street, thence turning and running in an eastwardly direction along the boundary wall of No. 6 Court, Atkinson Street, to the rear yard wall of No. 87, Soho Street, thence turning and running in a southwardly direction along the rear yard wall of No. 87, Soho Street, to the rear wall of No. 2 in 4 Court, Atkinson Street, thence turning and running in a westwardly direction to and including No. 10, Atkinson Street, thence turning and running in a southwardly direction to and including No. 2, Atkinson Street, thence turning and running in an eastwardly direction to and including No. 57, Mansfield Street, thence turning and running in a northwardly direction in a broken line to the boundary wall of No. 4 Court, Atkinson Street, thence turning and running in an eastwardly direction to the yard wall of No. 85, Soho Street, thence turning and running in a southwardly direction to and including No. 77, Soho Street, thence turning and running in an eastwardly direction to No. 77, Soho Street, aforesaid.

Also commencing at and including No. 1, Atkinson Street, and running in a northwardly direction to and including No. 74, Birkett Street, thence turning and running in a westwardly direction to and

including No. 58, Birkett Street, thence turning and running in a southwardly direction to and including No. 43, Mansfield Street, thence turning and running in an eastwardly direction to No. 1, Atkinson Street, aforesaid, but NOT including the stable and yard Nos. 4 and 6, Tessera Place.

Resolution of Housing Committee in respect to Official Representation, dated 19th January, 1928 :—

Resolved—

That it be recommended to the Council that the Council, having taken into consideration the Official Representation of the Medical Officer of Health, dated the 18th day of January, 1928, and being satisfied of the truth thereof and of the sufficiency of their resources, declare that the area described in such Representation is an unhealthy area, and that an improvement scheme ought to be made in respect of such area.

Also Resolved—

That it be recommended to the Council that the Town Clerk be instructed to prepare a draft scheme, and take all other requisite steps to carry into effect under, and in accordance with the provisions of Part II of the Housing Act, 1925, and that the Land Steward and Surveyor and the Acting Director of Housing prepare the necessary plans, particulars and estimates.

Resolution of City Council in respect to Official Representation dated 1st February, 1928 :—

QUEEN ANNE STREET UNHEALTHY AREA.

Resolved—

That the Council, having taken into consideration the Official Representation of the Medical Officer of Health, dated the 18th day of January, 1928, and being satisfied of the truth thereof, and of the sufficiency of their resources, declare that the area described in such Representation is an unhealthy area, and that an improvement scheme ought to be made in respect of such area.

Also Resolved—

That the Town Clerk be instructed to prepare a draft scheme, and take all other requisite steps to carry the same into effect under, and in accordance with, the provisions of Part II of the Housing Act, 1925, and that the Land Steward and Surveyor and the Acting Director of Housing prepare the necessary plans, particulars and estimates.

THE HOUSING ACT, 1925.

LIVERPOOL (QUEEN ANNE STREET) IMPROVEMENT SCHEME, 1928.

REPORT OF THE MEDICAL OFFICER OF HEALTH.

This area contains approximately 5·6 acres (excluding streets), and is part of the Central Area Housing Scheme, which for some time has

been under consideration of the Housing Committee. It is situated in a thickly-populated and congested district, the average death rate for the six years 1922 to 1927 being 22.36.

There are approximately 434 houses in the area, 125 being situated in courts or contiguous to courts, the remaining being sub-let, and in bad repair.

A house-to-house census was taken in July, 1927, when the total population was 2,876 persons.

THE HOUSING ACT, 1925.

LIVERPOOL (QUEEN ANNE STREET) IMPROVEMENT SCHEME, 1928.

REPORT OF THE ACTING DIRECTOR OF HOUSING.

Pursuant to the Resolution of the Housing Committee of the 19th January, 1928, which was confirmed by the City Council on the 1st February, 1928, the Acting Director of Housing reports that he has prepared a draft scheme, details of which are set out hereunder, and which is illustrated by the sketch plans.

Plan No. 1 shews the Queen Anne Street Area referred to in the Official Representation of the Medical Officer of Health, dated 18th January, 1928, the insanitary property being coloured in red.

On this plan the Acting Director has indicated in blue the land and buildings which, in his opinion, it is essential to include for the efficiency of the scheme.

In addition to the land and buildings included in the area officially represented by the Medical Officer, a further area fronting to Holly Street has also been included in the scheme in order to provide a site on which building could be proceeded with at an early date. The inclusion of this area is considered essential in order to find accommodation for those to be dispossessed prior to the commencement of the demolition of the first portion of the property in the Queen Anne Street Area. This area is also coloured blue on the plan.

Plan No. 2 shews coloured in yellow the area in the scheme which will be cleared and re-developed for re-housing purposes.

The suggested position of new dwellings is indicated on this plan in a slightly deeper tint.

From this plan it will be seen that, with the exception of Harker Street, Wakefield Street, Birkett Street, Soho Street and Springfield, which form the boundaries of the area, only Queen Anne Street and Mansfield Street will be retained in the re-developed area, the other existing streets being closed from time to time during the progress of the scheme.

[NOTE.—Plan No. 2, together with Plan No. 1, will accompany the particulars to be forwarded to the Minister of Health in connection with the Official Representation of the Scheme.]

Plan No. 3 shews in clearer form the lay-out proposed for the re-development of the area. The erection of the large blocks of dwellings which will front the main thoroughfares can only be made possible by the acquisition of the lands coloured blue on Plan No. 1 and the closing of several of the existing narrow roads and passages.

To attempt a re-planning of an area of this size without the acquisition of the several small sites coloured blue on Plan No. 1 would imperil the success of the scheme and result in the piecemeal development of an area essentially demanding treatment on bold lines.

Plan No. 4 shews the existing buildings on the area coloured black, and is only submitted for comparison with Plan No. 3 as shewing the contrast between the present condition of the area, with the narrow streets and passages and lack of air space, with the advantages which will result from the proper redistribution of buildings and open spaces on the completion of the improvement scheme.

Plan No. 5. This plan shews in sketch only the principal elevations of the proposed new buildings. With the exception of certain of the dwellings at the north and south ends of courtyards which will be reduced in height to admit sunlight to the courtyard, the buildings will be four floors in height, those fronting to Soho Street being superimposed over ground floor shopping accommodation.

It is considered advisable to provide shopping accommodation on this frontage to replace that already existing within the area, and to enable alternative accommodation to be given to existing shopkeepers.

The Soho Street frontages will be treated on the broad lines considered necessary in view of the fact that these blocks will front on

to a commercial thoroughfare. The remaining frontages will be relieved by bays and other architectural features in order to give a more domestic character to the elevations.

It is suggested that the open space between Blocks B and C should be laid out and planted with trees, the courtyard of Block A being reserved as a playground for the use of all tenants of the dwellings included in the scheme.

The sketch elevations which are now shewn are suggestive proposals only, more detailed plans of which will be prepared and submitted for the approval of the Committee in due course.

The following summary gives the general outline of the proposals:—

The total contents of the area to be acquired in order to carry out the proposed scheme is 27,430 square yards.

The total number of persons who will be displaced by the scheme is 2,876.

Basing the accommodation on two persons per bedroom per dwelling, the accommodation under the scheme will provide for approximately 2,146 persons.

This accommodation will be provided in five blocks of dwellings, marked "A," "B," "C," "D," and "E" on the Plan No. 3, which will contain the following dwellings:—

	Approximate No.			
One bedroom dwellings...	28
Two bedroom dwellings...	95
Three bedroom dwellings	285

or a total of 408 dwellings, which will be built to replace 432 existing dwellings on the area.

In addition to the dwellings mentioned it is anticipated that it will be possible to provide 38 shops, to be let either as lock-up shops or in conjunction with one of the dwellings.

The cost of the buildings, lay-out of the necessary playgrounds and open spaces, street and sewer works, street lighting and tree planting, etc., is estimated at £261,500.

The Acting-Director is of the opinion that it is desirable that the whole of the property included in the scheme should be purchased and conveyed to the Corporation as early as possible after the making of the order.

The Acting-Director, therefore, requests the approval of the Committee to the general proposals now submitted, so that such information as is necessary may be obtained from the details of the proposed scheme for submission by the Town Clerk to the Minister of Health, preparatory to the holding of the Official Inquiry, and also to enable the Acting-Director to proceed with further details of the scheme, thus reducing delay in commencing operations.

THE HOUSING ACT, 1925.

LIVERPOOL (QUEEN ANNE STREET) IMPROVEMENT SCHEME, 1928.

REPORT OF THE LAND STEWARD AND SURVEYOR.

In accordance with the resolution of the Housing Committee of the 19th January, 1928, the Land Steward and Surveyor begs to report that the estimated cost of acquiring the land and buildings, as shewn upon the deposited plan, and coloured pink and blue, in accordance with the provisions of Section 46 of the Housing Act, 1925, is £70,000, this amount providing for compensation for disturbance and costs.

REPORT OF TOWN CLERK, DATED 15TH FEBRUARY, 1928.

To the Housing Committee.

The Town Clerk begs to report that he has considered the areas mentioned in the report of the Medical Officer of Health, the Land Steward and Surveyor, and the Acting Director of Housing, and is of opinion that the area mentioned in the Official Representation of the Medical Officer of Health may be conveniently dealt with by an improvement scheme under Part 2 of the Housing Act, 1925.

THE HOUSING ACT, 1925.

LIVERPOOL (QUEEN ANNE STREET) IMPROVEMENT SCHEME, 1928.

Scheme made by the Lord Mayor, Aldermen and Citizens of the City of Liverpool, acting by the Council as the Local Authority under Part II of the Housing Act, 1925, for the Improvement of an Unhealthy Area within the City of Liverpool.

1. This scheme may be cited as the Liverpool (Queen Anne Street) Improvement Scheme, 1928.

2. In this scheme the "City" means the County Borough of Liverpool, the "Corporation" means the Lord Mayor, Aldermen, and Citizens of the City, the "Town Clerk," "Medical Officer of Health," "Land Steward and Surveyor," and the "Acting Director of Housing" mean respectively the Town Clerk, Medical Officer of Health, Land Steward and Surveyor, and Acting Director of Housing of the City for the time being, and the plans referred to as "the plans" mean the plans which accompany this scheme.

3. The area included in this scheme comprises 27,430 square yards or thereabouts, and is as follows :—

An area commencing at the junction of Springfield and Soho Street, and running northwardly along Soho Street to Birkett Street, thence turning and running westwardly along Birkett Street to Scarlett Street, thence turning and running southwardly along Scarlett Street to Mansfield Street, thence turning and running westwardly along Mansfield Street to Wakefield Street, thence turning and running southwardly along Wakefield Street and continuing through the premises No. 18, Queen Anne Street, and along Harker Street to Springfield, thence turning and running eastwardly to the junction of Springfield and Soho Street aforesaid.

Also an area commencing at the junction of St. Anne Street and Holly Street, thence running westwardly along Holly Street to the gable wall of a Public House, No. 86, Christian Street, thence turning and running southwardly in a broken line to the gable wall of No. 84, Christian Street, thence turning and running westwardly to Christian Street, thence turning and running southwardly along Christian Street to a passage leading to Myrtle View, thence turning and running eastwardly in a broken line to St. Anne Street, thence turning and running northwardly to the junction of Holly Street and St. Anne Street aforesaid.

4. The Corporation may enter upon and take compulsorily and deal with for the purpose of this scheme all or any of the lands referred to in this scheme and coloured pink and blue on the said plan.

5. After obtaining possession of the land authorised to be taken by this scheme the Corporation may remove the whole of the buildings standing thereon, and may make and widen streets and approaches in such lines and situations as the Corporation may prescribe, and may stop up or deviate any street or streets included in any of the areas, and the Corporation shall appropriate other parts of the said land to the erection of dwelling-houses for the accommodation of such number of persons of the working class as, in the opinion of the Corporation, may require such accommodation, and any lands not required for the purposes aforesaid may be appropriated to such public purposes as the Corporation may direct, or be sold, leased, or otherwise disposed of, as the Corporation may think fit.

ESTIMATE OF EXPENSE.

1. The estimated cost of acquiring the lands and buildings shewn upon the deposited plan and coloured pink and blue, in accordance with Section 46 of the Housing Act, 1925, including the cost of and incidental to the making and confirmation of the scheme, is the sum of £70,000.

2. The estimated cost of laying out and the construction of new streets and the erection of new buildings is the sum of £261,500.

3. No surplus land.

4. No recoupments.

Given under our Common Seal this Seventh day of March, 1928.

The Common Seal of the said Lord Mayor, Aldermen, and Citizens was hereunto affixed in the presence of

MARGARET BEAVAN,
Lord Mayor.

WALTER MOON,
Town Clerk.

L.S.

PARTICULARS AND STATEMENTS.

In pursuance of the instructions of the Ministry of Health, dated October, 1919, as to Applications by Urban Sanitary Authorities for the confirmation of Improvement Schemes.

(The paragraphs are numbered to correspond with the instructions of the Ministry of Health.)

(i) The area affected by the scheme comprises 27,430 square yards or thereabouts.

(ii) The number of persons of the working class who will be displaced is, as nearly as can be ascertained, including lodgers, 2,876 persons. The approximate rents paid by such persons are from 5s. to 15s. per week, free of rates and taxes.

(iii) It is intended to provide accommodation for such number of those persons of the working class who will be displaced in the area affected by the scheme in such place or places either within or without the limits of the said area as the Ministry of Health, being the confirming authority within the meaning of the above Act, may require.

(iv) After obtaining possession of the land the Corporation propose to remove the buildings standing thereon and afterwards to appropriate the land for the erection of suitable dwellings or for any other purpose that they may think desirable, or to dispose of the site by a sale in fee simple or by building leases, as they may deem to be most advantageous.

(v) The area included in the Official Representation of the Medical Officer of Health is coloured pink on the plans.

The area included in the improvement scheme is the same as that included in the Official Representation which is coloured pink on the plans, together with the lands coloured blue thereon, which are included for the purpose of making the scheme efficient, under Section 38 (1) (a) of the Housing Act, 1925.

A Book of Reference to the deposited plans, in duplicate, accompanies this scheme.

Particulars of the area included in the scheme are given in the Book of Reference and the plans.

No lands comprised in the area in respect of which the Official Representation was made have been excluded from the area of the improvement scheme by the Corporation.

All the lands included in the areas of the improvement scheme are intended to be taken compulsorily and are coloured pink and blue on the plans.

THE HOUSING ACT, 1925.

IMPROVEMENT SCHEME (QUEEN ANNE STREET AREA).

At a meeting of the Housing Committee held on Thursday, the 16th day of February, 1928, the Town Clerk submitted the Reports, Improvement Scheme, and Particulars and Statements :—

Resolved—

That the Reports be approved.

Also Resolved—

That it be recommended to the Council that the improvement scheme under Part II of the Housing Act, 1925, now submitted, for the improvement of the Queen Anne Street unhealthy area, together with the plans, particulars and estimates relating to the said scheme, be, and the same are, hereby made and adopted, and that all necessary steps be taken to obtain confirmation thereof.

LIVERPOOL (QUEEN ANNE STREET) IMPROVEMENT SCHEME, 1928.

The City Council at a meeting on March 7th, 1928, unanimously passed the following resolution :—

That the improvement scheme under Part 2 of the Housing Act, 1925, now submitted, for the improvement of the Queen Anne Street unhealthy area, together with plans, particulars and estimates relating to the said scheme, be, and the same are, hereby made and adopted, and that all the necessary steps be taken to obtain confirmation thereof.

The Queen Anne Street unhealthy area is part of what is officially known as the Central Area Housing Scheme, comprising approximately 86 acres, in respect of which the Medical Officer submitted a joint report to the Housing Committee in June, 1926. This report summarises the position as regards the central area as follows :—

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 arrangements of the streets and houses unsatisfactory, the majority of the houses are old and worn, and, with a few exceptions, the dwelling houses on the area do not comply with modern sanitary requirements.

This statement in regard to the central area applies with equal force to the Queen Anne Street area.

A comparative statement of the vital statistics in connection with this unhealthy area for a period of seven years (1921 to 1927), and similar statistics for the same period for the city as a whole, and also the Corporation tenements, were submitted as follows:—

QUEEN ANNE STREET AREA.

Vital statistics in respect to the whole city, the central area, and the Corporation tenements for the seven years, 1921 to 1927:—

	Entire City.	Queen Anne Street Area.	Corporation Tenements.
POPULATION	826,502	2,876	13,754
Average annual death rate (per 1,000)	13·9	22·25	17·90
Average annual phthisis death rate (per 1,000)	1·25	2·13	1·87
Average annual infant mortality rate (per 1,000 births)	100·2	158·86	131·11
Average annual birth rate (per 1,000)	24·4	37·64	35·56

The death rate from zymotic diseases is far higher in the Queen Anne Street unhealthy area than in the whole of the city. The average annual death rate from the seven principal zymotic diseases during the seven years, 1921 to 1927, were shown to be as follows, viz.:—Queen Anne Street unhealthy area, 3·57, as against ·86 in the entire city.

UNOCCUPIED HOUSES.

In 1927, a return was submitted to the Health Committee of the number of unoccupied houses within the city. No further return has been submitted since this date.

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 :—

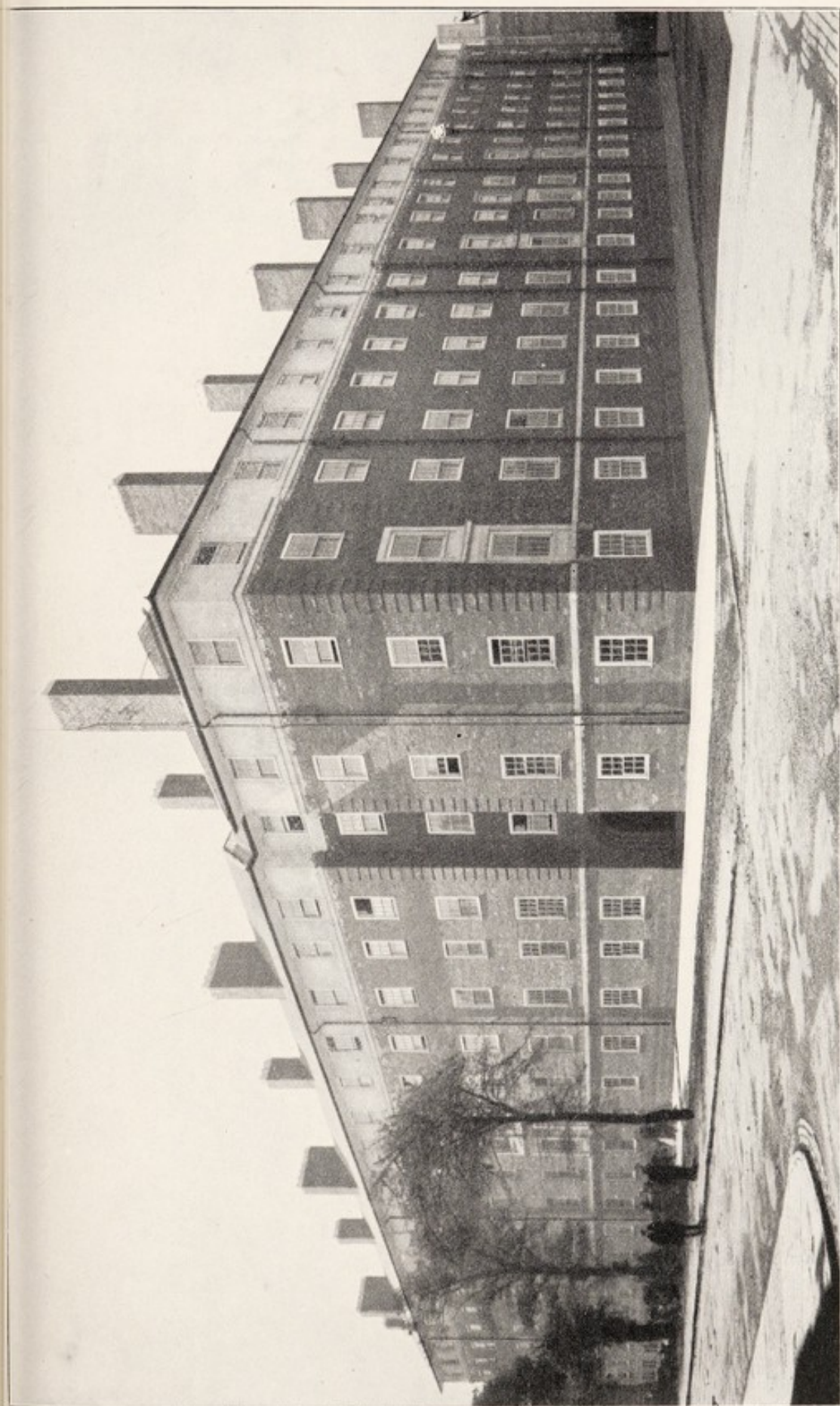
Number of cellars found occupied as separate dwellings,						
December, 1912	...	...	...	...	...	1,614

The present position in regard to these cellars is as follows :—

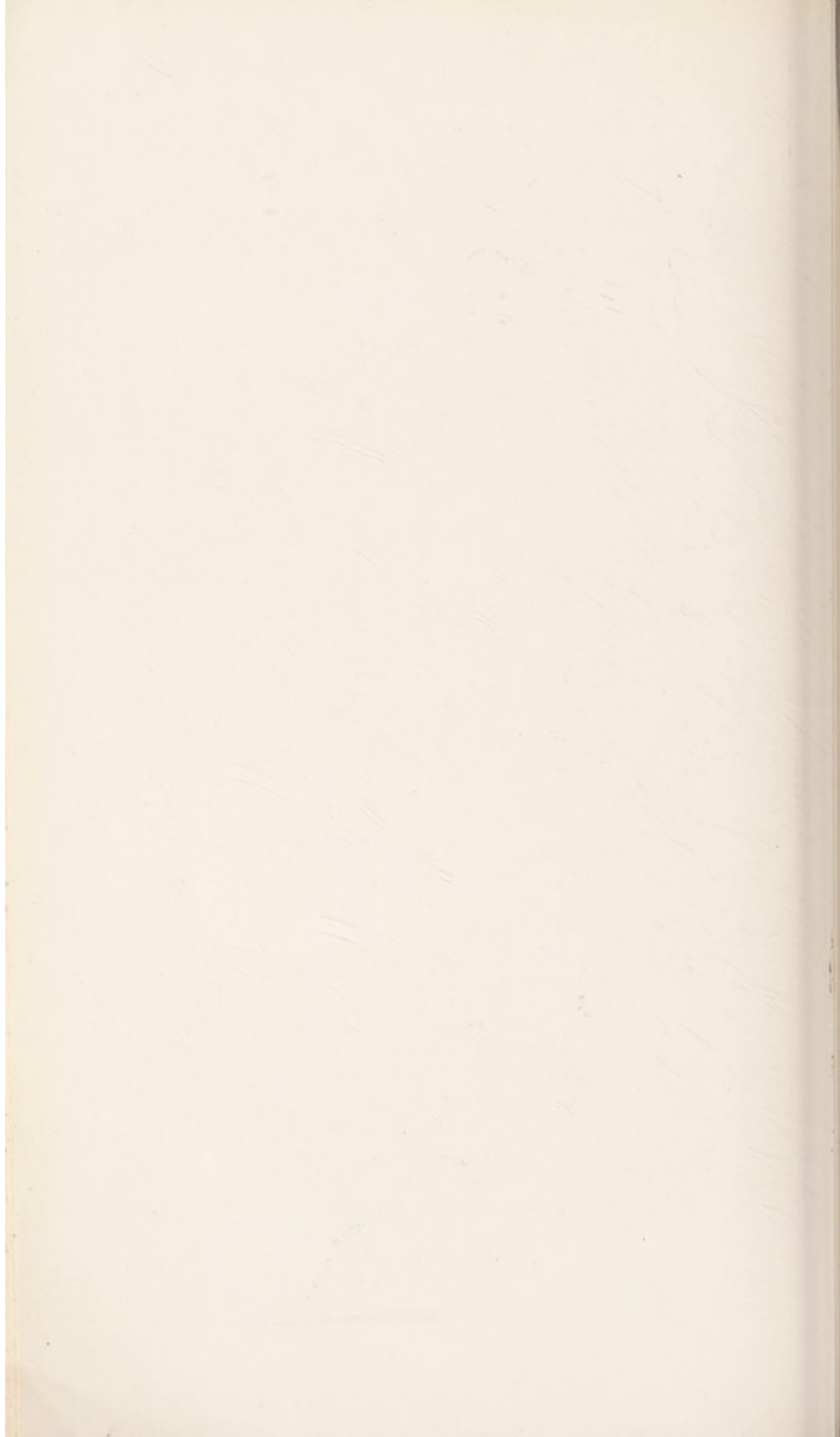
Number at present unoccupied	...	...	...	606
Number occupied as kitchen or wash-cellars	...	...	...	472
Number occupied as a kitchen and separately let with the front parlour	...	...	...	115
Number permanently closed	...	...	...	273
Number demolished	...	...	...	9
Number of cellars occupied as separate dwellings,				
31st December, 1927	...	...	...	139

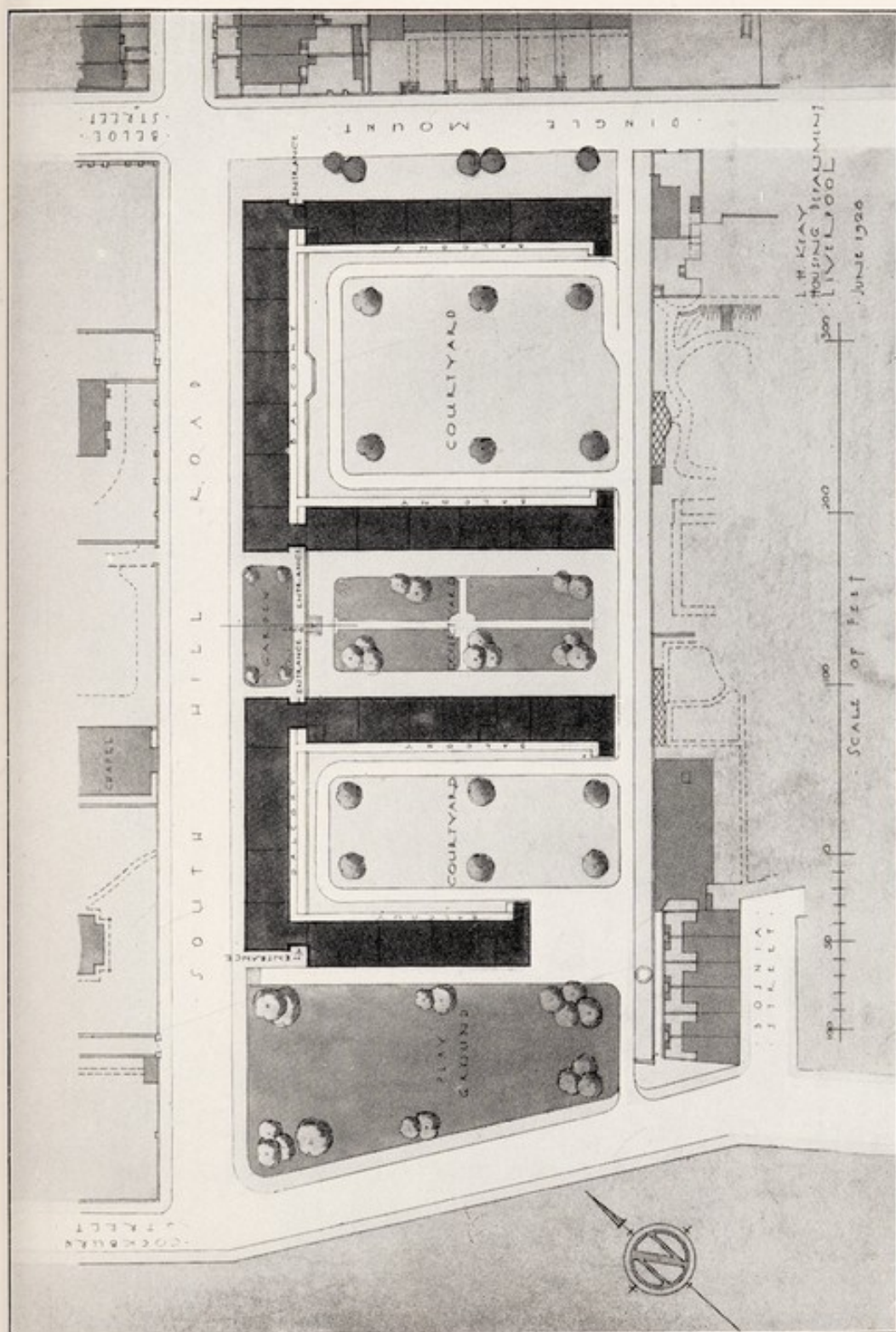
PROVISION OF DWELLINGS.

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.

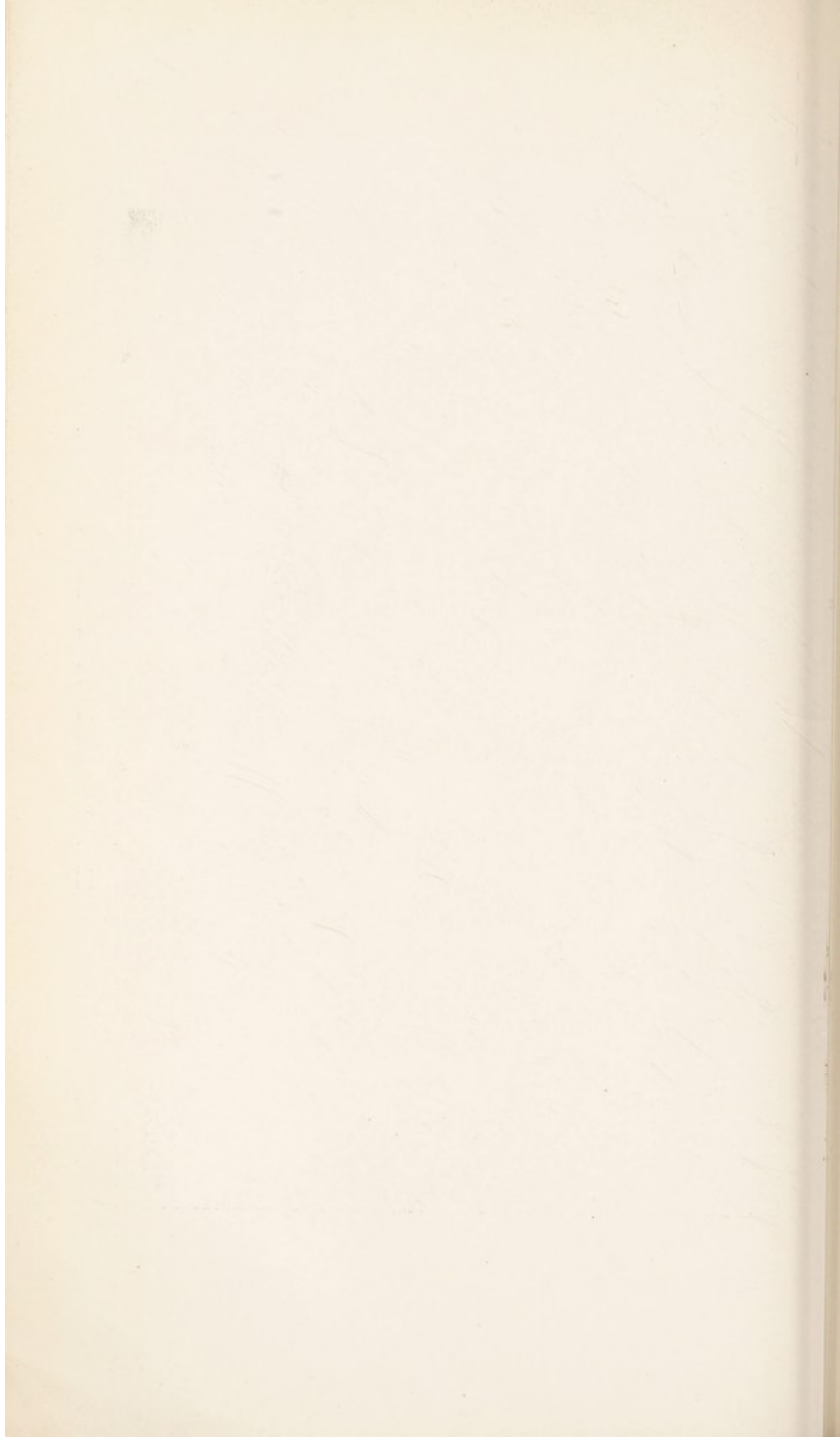


South Hill Road Tenements.





Plan of South Hill Road Estate.



NEW DWELLINGS IN SUBURBS.

In the year 1919 the Housing Committee commenced to erect houses in the suburbs, and up to the present 15,748 houses and 169 flats have been completed, and 1,257 houses are in progress of erection.

During the same period 5,526 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, Dingle.

These tenements are in course of erection and those at South Hill Road, Dingle, are completed.

The Housing Committee has erected the following dwelling-houses since 1919 on the outskirts of the city :—

		" A "	" B "	
		(Non-parlour)	(Parlour)	Totals
Elms House Estate ...	...	252	—	252
Larkhill Estate ...	...	476	1,730	2,206
Fazakerley Estate ...	...	318	269	587
Edge Lane Drive Estate ...	...	560	311	871
Walton-Clubmoor Estate ...	...	1,439	1,501	2,940
Springwood ...	...	224	1,149	1,373
Partly developed Estates ...	...	—	554	554
Woolton ...	...	48	—	48
Knotty Ash ...	...	122	89	211
Highfield Estate ...	...	—	618	618
Pinehurst Road Estate ...	...	281	375	656
King Street, etc., Garston ...	...	76	—	76
Ronald Street ...	...	78	—	78
Norris Green Estate ...	...	3,251	1,973	5,224
		<u>7,125</u>	<u>8,569</u>	<u>15,694</u>

All these dwellings are completed and occupied.

At Larkhill and Springwood Estates 120 and 49 flats, respectively, have also been erected.

RE-HOUSING IN OLD CITY AREA.

The number of dwellings provided by the Corporation up to the present is 3,061; 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 1902/3 }	46
Gildart's Gardens	{ 1897 1904 }	229
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 1906/7 }	454
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
Pitt Street	1928	18
Total	—	3,061

DESCRIPTION OF TENEMENTS.

Number of 1-roomed dwellings	193
Number of 2-roomed dwellings	1,372
Number of 3-roomed dwellings	1,178
Number of 4-roomed dwellings	318
	<hr/> 3,061
Number of self-contained dwellings (included in above)	133
Number of lock-up shops	15

RENTALS.

The rentals of the tenements vary from 2s. 8½d. to 12s. 6d., and those of the self-contained cottages from 8s. 11½d. to 10s. 7½d. per week.

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 1923 to 1927 :—

Year	Birth Rate per 1,000 of population.	Infantile Mortality. Deaths under 1 year per 1,000 births.
1923.....	34·90	126·3
1924.....	32·66	131·1
1925	34·52	128·15
1926.....	35·49	147·63
1927.....	30·82	125·84

ALL DWELLINGS.

Average Birth Rate for the 5 years 1923 to 1927	...	...	33·67
Average Death Rate for the 5 years 1923 to 1927	...	...	17·73
Average Infantile Mortality Rate (under 1 year) 1923 to 1927	...	...	132·11
Average Phthisis Death Rate for the 5 years 1923 to 1927	...	...	1·83

RETURN REQUIRED BY MINISTRY OF HEALTH,
YEAR ENDED 31ST DECEMBER, 1927.

GENERAL STATISTICS.

Area (acres)	21,219
Population	856,266
Number of inhabited houses	178,900
Number of families, or separate occupiers (1921 Census)	173,823
Rateable value	£7,099,140
Sum represented by a Penny Rate	£25,029

HOUSING.

Number of New Houses erected during the year :—

(a) Total	7,295
(b) With State Assistance under the Housing Act, 1924 :—	
(i) By the Local Authority	5,728
(ii) By other bodies or persons	1,381

1. UNFIT DWELLING-HOUSES.

Inspection—

(1) Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts)	131,588
(2) Number of dwelling-houses which were inspected and recorded under the Housing (Inspection of District) Regulations, 1910	131,588
(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.

Proceedings have been commenced under this section, the returns will be included in the Annual Report for 1928.

B.—*Proceedings under Public Health Acts.*

(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied	41,969
(2) Number of dwelling-houses in which defects were remedied—	
(a) by owners	41,969
(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, 1923-1927.

NUMBER OF ROOMS, (Exclusive of Bathrooms, Sculleries, &c.)	1923	1924	1925	1926	1927
4 Rooms or less	5	14	13	3	1
5 or 6 Rooms	763	479	1,298	4,599	7,115
7 or 8 Rooms	937	265	333	225	173
9 or 10 Rooms	4	10	3	11	6
More than 10 Rooms	—	—	—	—	—
Totals	1,709	768	1,647	4,838	7,295

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 five years, are :—

1923 = 1,548.

1924 = 88.

1925 = 491.

1926 = 3,102.

1927 = 5,728.

RESIDENTIAL FLATS.—During 1927, 15 houses have been altered into 46 *self-contained* residential flats, giving a nett increase of 31 “houses” not included in the above table.

NUMBER OF HOUSES ERECTED AND TAKEN DOWN
DURING THE YEAR ENDING DECEMBER, 1927.

DISTRICTS.						Number Erected.	Number Taken Down.
Exchange	...	...	...	...	...	—	7
Abercromby	...	...	...	...	...	18	11
Everton	...	...	...	...	...	—	6
Kirkdale...	...	...	...	...	...	—	1
Edge Hill	...	...	...	...	...	—	3
Toxteth	...	...	...	...	...	—	12
Walton	...	...	...	...	...	608	3
West Derby	...	...	...	...	...	440	13
Wavertree	...	...	...	...	...	1,349	1
Toxteth (East)	...	...	...	...	...	—	—
Fazakerley	...	...	...	...	...	356	—
Woolton	...	...	...	...	...	29	1
Norris Green	...	...	...	...	...	4,495	—
Totals ...						7,295	58

Of the 7,295 dwelling-houses erected during 1927, 5,728 were built under the direction of the Housing Department, these forming parts of Government-assisted schemes.

METEOROLOGY.

The late Mr. W. E. Plummer, M.A., F.R.A.S., Astronomer to the Mersey Docks and Harbour Board, 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.

1927.	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	29·695	41·3	3·304	24	87
February	29·980	40·1	1·201	10	87
March	29·652	44·7	2·608	17	76
April	29·914	46·5	1·089	18	72
May	30·089	52·4	1·292	10	72
June	29·882	54·0	3·798	16	73
July	29·860	60·5	4·140	18	81
August	29·805	60·5	6·129	21	81
September	29·759	54·8	5·296	20	80
October	29·995	51·6	2·404	18	83
November	29·869	44·1	3·790	16	84
December	29·931	35·7	1·126	8	87

DIFFERENCE FROM THE AVERAGE QUANTITIES OBSERVED DURING THE
LAST 60 YEARS.

1927.	BAROMETER.		TEMPERATURE.		RAINFALL.	
	Above Average.	Below Average.	Above Average.	Below Average.	Above Average.	Below Average.
	Inches.	Inches	Degrees.	Degrees.	Inches.	Inches.
January .....	...	0.237	2.5	...	1.143	...
February	0.066	...	...	0.3	...	0.568
March .....	...	0.233	2.6	...	0.772	...
April	0.013	...	...	0.2	...	0.556
May	0.125	...	0.2	...	...	0.829
June .....	...	0.113	...	3.4	1.801	...
July .....	...	0.087	0.1	...	1.408	...
August .....	...	0.111	0.6	...	2.998	...
September .....	...	0.204	...	1.4	2.470	...
October.....	0.111	...	1.9	...	...	0.910
November .....	...	0.026	0.4	...	1.267	...
December.....	0.080	...	...	4.9	...	1.584

OBSERVATIONS OF VELOCITY OF WIND.

1927.	Average Hourly Velocity for Month.	Maximum Hourly Velocity.	Date.	Minimum Hourly Velocity.	Date.
	Miles.	Miles		Miles.	
January	21.4	62	Jan. 29	0	January 11, 17.
February....	13.7	38	Feb. 3	0	February 1, 15, 16, 17.
March.....	17.9	61	Mar. 2	2	March 17.
April	19.7	58	April 25	1	April 18, 30.
May	13.4	45	May 21	1	May 1, 15, 28, 29.
June	17.3	53	June 26	0	June 11, 16.
July	11.6	33	July 30	0	July 16.
August	13.0	35	Aug. 22	0	August 8, 16, 28.
September..	15.8	41	Sept. 9	0	Sept. 1, 2, 3, 5, 6.
October.....	15.9	75	Oct. 29	0	October 3, 7.
November...	16.1	43	Nov. 5	0	Nov. 6, 8, 22.
December...	14.5	40	Dec. 21	0	December 22, 23, 31,

The Corporation of Liverpool makes yearly donations to the Royal Society for the Prevention of Cruelty to Animals, Liverpool Branch, and to the Liverpool Dogs' Home on account of work done by those institutions, and the following brief extracts from their reports are, therefore, of interest.

LIVERPOOL CATS' SHELTERS.

(Three depots, namely, 41, Russell Street; 90, Smith Street, Kirkdale; 171, Mill Street, Toxteth.)

During the year 1927, the total number of animals lethalised was 25,244, a slight decrease upon the figures for the previous year. The van visits private houses on receipt of a postcard addressed to the Caretaker, 41, Russell Street, Liverpool, to remove unwanted animals for lethalisation. It should always be borne in mind that with very rare exceptions every animal received is actually handed over with the express intention of being so dealt with. Of the number received last year over 10,000 were in a state of disease, and there is no doubt that the general health and good order of the community benefit very considerably by the removal of so large a number of surplus animals. Included in the above total are 234 cats, which were received as boarders, for temporary periods, and afterwards returned to their owners.

LIVERPOOL HORSES' REST, BROAD GREEN.

During 1927, 68 animals were grazed for varying periods. In a few cases, a loan animal is provided to take the place of one which is convalescent. The Horses' Rest is remarkably successful in recovering jaded and unfit animals to normal health and strength, and thus affords a most valuable service to the humblest class of horse owners in the city. A keeper resides on the premises.

LIVERPOOL ANIMALS' HOSPITAL, LARCH LEA.

This institution is regarded as the Animals' War Memorial for Liverpool, and during 1927 2,866 attendances were recorded, all the animals belonging to those who could not afford to pay veterinary fees. The society is deeply indebted to the veterinary practitioners of the city for attending at the hospital in rotation throughout the week at fixed

hours. An experienced attendant lives on the premises, and is not infrequently called upon in accident cases, and other matters of a similar nature.

All the above institutions are conducted by the R.S.P.C.A., Liverpool Branch, 3, Crosshall Street, Liverpool. Telephone : Central, 645.

LIVERPOOL DOGS' HOME, EDGE LANE.

During 1927 the total number of dogs received at the home from various sources was 10,446. From the opening of these new premises in 1904 up to 1927 the total number of animals dealt with is one short of 145,000; unwanted animals are collected from owners' houses (fee within the city, 1s.) for humane lethaling at the home. A post-card requesting this service should be addressed to the Keeper, The Liverpool Dogs' Home, Edge Lane, Liverpool. Telephone : Old Swan, 1340. During 1927 the number of animals received at the home direct from their owners exceeded in number those which were picked up on the streets, so that the home is able to claim that, largely through this cheap collecting scheme, it has halved the "stray" population of the city. Late in the year a second motor van was purchased so that the animals likely to be claimed or sold to new owners should be as far as possible kept separate from animals sent in expressly to be destroyed.

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 1927 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.			
		Uncorrected Number.	Nett.		Number.	Rate.	of Non-residents registered in the District.	of Residents registered in the District.	Under 1 year of age.		At all ages.	
			Number.	Rate.					Number.	Rate per 1000 Nett Births.	Number.	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
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
1927.....	856266	19175	19020	22.2	12443	14.4	975	406	1781	94	11874	13.9

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
of
Total Families or separate occupiers ...173,823 } 1921

TABLE II.
CITY OF LIVERPOOL.

Cases of Infectious Disease notified during the Year 1927.

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 ... ..	...	...	...	...	...	...	...	...
Scarlet fever ... ..	...	...	...	...	...	...	...	...
Diphtheria (and Croup)... ..	1664	23	414	859	227	118	22	1
Epidemic typhus	611	16	14	44	94	175	205	63
Epidemic typhus	1640	21	483	940	143	48	5	...
Epidemic typhus ... ..	...	...	...	...	...	...	...	...
Epidemic typhus	67	...	6	21	19	18	3	...
Epidemic typhus	51	...	...	...	13	38	...	...
Epidemic typhus	116	...	...	...	36	80	...	...
Epidemic typhus	25	12	6	3	3	1	...	...
Epidemic typhus	15	2	6	5	2	...	...	...
Epidemic typhus	636	636	...	...	...	...	...	...
Epidemic typhus	2304	12	93	431	472	791	443	62
Epidemic typhus	588	24	126	219	108	82	21	8
Epidemic typhus	9	...	...	...	1	4	4	...
Epidemic typhus	10606	721	3677	6066	142	...	...	...
Epidemic typhus	2394	204	693	354	276	455	277	135
Epidemic typhus	64	...	...	...	19	32	11	2
Epidemic typhus ... ..	...	...	...	...	...	...	...	...
Epidemic typhus	8	...	...	1	1	3	3	...
Epidemic typhus	69	1	3	9	18	20	17	1
Totals	20867	1672	5521	8952	1574	1865	1011	272

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 1927.
(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)	11809	1762	739	467	371	548	1380	2965	3577	6121
Uncertified	65	19	—	—	—	2	3	11	30	2
1. Enteric Fever	10	—	—	—	1	4	3	2	—	10
2. Small-pox	—	—	—	—	—	—	—	—	—	—
3. Measles	345	86	177	71	11	—	—	—	—	172
4. Scarlet Fever	12	—	1	3	7	—	—	1	—	12
5. Whooping Cough	125	47	43	32	3	—	—	—	—	75
6. Diphtheria and Croup	90	8	24	31	24	2	—	1	—	87
7. Influenza	268	11	5	6	3	9	36	99	99	43
8. Erysipelas	24	4	—	—	—	—	7	10	3	25
9. Phthisis (Pulmonary Tuberculosis) ...	975	4	18	14	29	214	370	291	36	567
10. Tuberculous Meningitis	84	13	15	20	23	7	4	2	—	73
11. Other Tuberculous Diseases	120	7	13	15	22	25	14	21	3	76
12. Cancer, malignant disease.	977	2	—	4	2	13	89	487	380	554
13. Rheumatic Fever	73	—	—	1	22	17	17	14	2	41
14. Meningitis (See note (d))	73	33	11	9	10	6	2	2	—	50
15. Organic Heart Disease	949	—	—	1	13	40	113	334	448	361
16. Bronchitis	1091	121	30	13	6	6	45	268	602	327
17. Pneumonia (all forms)	1560	370	269	160	59	47	156	270	229	738
18. Other diseases of Respiratory organs	164	4	4	5	5	7	24	66	49	44
19. Diarrhoea and Enteritis. (See note (e))	350	283	67	—	—	—	—	—	—	242
20. Appendicitis and Typhlitis	45	—	—	—	7	9	12	14	3	60
21. Cirrhosis of Liver	26	—	—	—	—	1	2	17	6	8
21a. Alcoholism	5	—	—	—	—	—	1	3	1	1
22. Nephritis and Bright's Disease	369	1	—	1	7	8	52	167	133	231
23. Puerperal Fever	25	—	—	—	—	5	28	—	—	28
24. Other accidents and diseases of Pregnancy and Parturition	50	—	—	—	—	6	53	1	—	54
25. Congenital Debility and Malformation, including Premature Birth	553	536	5	3	2	5	2	—	—	263
26. Violent Deaths, excluding Suicide ...	318	22	23	31	43	28	62	59	50	212
27. Suicide	72	—	—	—	—	5	25	31	11	20
28. Other Defined Diseases	3090	227	34	47	72	86	272	810	1542	1748
29. Diseases, ill-defined or unknown	21	2	—	—	—	—	2	6	11	1
Totals	11874	1781	739	467	371	550	1383	2976	3607	6123
Sub-Entries included in above figures—										
Cerebro-Spinal Meningitis	21	10	3	4	1	2	1	—	—	20
Poliomyelitis & Polioencephalitis	2	—	—	—	2	—	—	—	—	2
*Encephalitis Lethargica	25	—	—	1	2	4	6	11	1	17
*Pneumonia	647	68	44	30	27	41	116	196	125	289

* 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.

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 1927.

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	...	...	...	...	...	407	71	58	47	583	252	336	301	290	1762
	Uncertified	...	...	...	...	...	13	—	—	—	13	3	2	1	—	19
Small-pox	...	...	...	...	...	...	—	—	—	—	—	—	—	—	—	—
Chicken-pox	...	...	...	...	...	...	—	—	—	—	—	—	1	1	—	2
Measles	...	...	...	...	...	...	—	—	—	—	—	3	10	26	47	86
Scarlet Fever	...	...	...	...	...	...	—	—	—	—	—	—	—	—	—	—
Whooping Cough	...	...	...	...	...	...	—	—	1	—	1	7	6	15	18	47
Diphtheria and Croup	...	...	...	...	...	...	—	—	—	1	1	—	1	1	5	8
Influenza	...	...	...	...	...	...	—	—	—	—	—	2	6	1	2	11
Erysipelas	...	...	...	...	...	...	—	—	1	—	1	2	1	—	—	4
Tuberculous Meningitis	...	...	...	...	...	...	—	—	—	—	—	1	2	5	5	13
Abdominal Tuberculosis (b)	...	...	...	...	...	...	—	—	—	—	—	—	1	—	—	1
Other Tuberculous Diseases	...	...	...	...	...	...	—	—	—	—	—	—	2	2	6	10
Meningitis (not Tuberculous)	...	...	...	...	...	...	3	1	1	—	5	2	7	2	7	23
Convulsions	...	...	...	...	...	...	16	9	2	2	29	11	5	—	3	48
Laryngitis	...	...	...	...	...	...	—	—	—	—	—	1	—	1	—	2
Bronchitis	...	...	...	...	...	...	—	—	2	1	3	26	35	33	24	121
Pneumonia (all forms)	...	...	...	...	...	...	11	2	2	6	21	53	77	112	107	370
Diarrhoea	...	...	...	...	...	...	—	—	—	4	4	21	36	23	15	99
Enteritis	...	...	...	...	...	...	2	2	7	7	18	32	72	38	23	183
Gastritis	...	...	...	...	...	...	1	—	—	1	2	3	1	1	—	7
Syphilis	...	...	...	...	...	...	1	2	1	—	4	8	2	—	—	14
Rickets	...	...	...	...	...	...	—	—	2	—	2	2	1	2	4	11
Suffocation, overlying	...	...	...	...	...	...	10	—	1	—	11	2	1	—	—	14
Injury at Birth	...	...	...	...	...	...	21	2	2	—	25	—	1	—	—	26
Atelectasis	...	...	...	...	...	...	39	2	—	—	41	—	—	—	—	41
Congenital Malformations (c)	...	...	...	...	...	...	25	9	4	7	45	8	10	6	3	72
Premature Birth	...	...	...	...	...	...	248	30	19	12	309	29	5	1	1	345
Atrophy, Debility and Marasmus...	...	...	...	...	...	...	26	7	6	3	42	24	35	11	7	119
Other Causes	...	...	...	...	...	...	17	5	7	3	32	18	20	21	13	104
							420	71	58	47	596	255	338	302	290	1781

Nett Births in the year { Legitimate ... 18,185
Illegitimate ... 835

Nett Deaths in the year of { Legitimate Infants 1,609
Illegitimate Infants 172

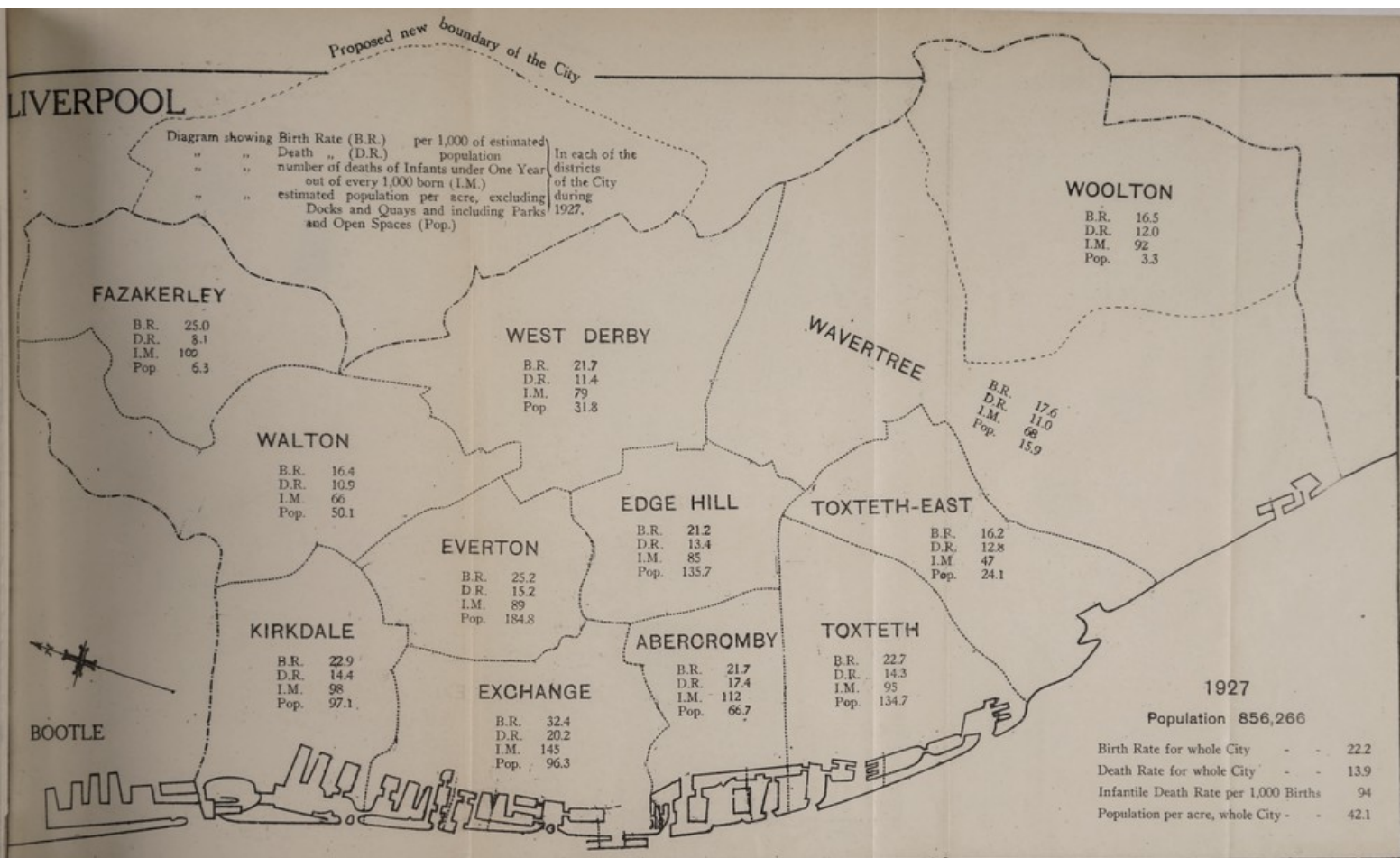
NOTES TO TABLE IV.

- (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.

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.



Proposed new
City and Town

ERPOOL

Diagram showing Birth Rate (B.R.)
Deaths (D.R.)
number of Deaths of Infants and
out of every 1,000 born (I.M.)
estimated population per acre
Docks and Quays and incl
and Open Spaces (Pop.)

FAZAKERLEY

B.R. 32.0
D.R. 8.1
I.M. 100
Pop. 6.3

WEST DERBY

B.R. 21.2
D.R. 14.4
I.M. 79
Pop. 8.12

WALTON

B.R. 16.4
D.R. 10.9
I.M. 66
Pop. 20.1

EDGE HILL

B.R. 21.2
D.R. 13.4
I.M. 85
Pop. 135.7

NO EVI

B.R. 25.2
D.R. 15.2
I.M. 89
Pop. 8.481

KIRKDALE

B.R. 25.9
D.R. 14.4
I.M. 98
Pop. 27.1

ABERRODMBY

B.R. 21.7
D.R. 17.4
I.M. 112
Pop. 66.7

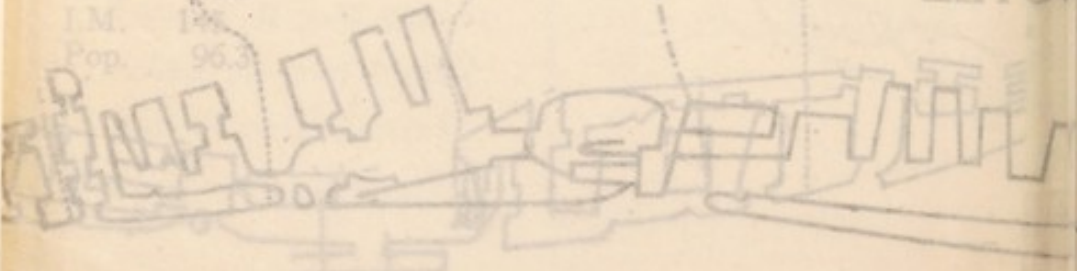
EXCHANGE

B.R. 32.4
D.R. 20.2
I.M. 141
Pop. 96.3

TOXT

B.R. 21.7
D.R. 17.4
I.M. 112
Pop. 66.7

TOXT



DEATHS REGISTERED IN THE CITY OF LIVERPOOL, DURING THE YEAR 1927.

CAUSE OF DEATH	SEX	AGE-BELOW																			CAUSES										PERMANENT CAUSES										Total	Rate per 1,000																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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		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	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	121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