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CITY OF LEEDS.

REPORT

ON THE

Health and Sanitary Administration

OF THE CITY

FOR THE YEAR 1928.

BY

J. JOHNSTONE JERVIS, M.D., D.P.H.,
Medical Officer of Health.

TABLE OF CONTENTS.

MATERNITY AND CHILD WELFARE.

PUBLIC HEALTH COMMITTEE.

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Mrs. G. HALBOT.

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PUBLIC HEALTH STAFF.

Medical Officer of Health and Chief Tuberculosis Officer.	J. Johnstone Jervis, M.D., Ch.B., D.P.H.
Chief Assistant Medical Officer of Health	Arthur Massey, M.D., Ch.B., D.P.H.
Assistant Medical Officer of Health for Maternity and Child Welfare and Medical Officer of Infants' Hospital	Gladys J. C. Russell, M.B., Ch.B., D.P.H.
Assistant Medical Officers for Maternity and Child Welfare	Sarah N. S. Barker, M.B., Ch.B. L.R.C.P., M.R.C.S. Maria L. Gaunt, M.B., Ch.B. Annie M. Forrest, M.B., Ch.B., D.P.H. Marion Knowles, M.B., Ch.B. Catherine M. Gray, M.B., Ch.B.
Consulting Clinical Tuberculosis Officer	H. de Carle Woodcock, M.D., M.R.C.S., F.R.C.P. (Edin.), D.P.H.
Chief Clinical Tuberculosis Officer ..	N. Tattersall, M.D., B.S., Ch.B.
Assistant Clinical Tuberculosis Officer	L. W. Hearn, M.B., B.S.
Assistant Clinical Tuberculosis Officer	Alexandrena M. Maclennan, M.D., Ch.B.
Dental Officer for Maternity and Child Welfare and Tuberculosis Work	W. L. Fleming, L.D.S.
Medical Superintendents—	
Infectious Disease Hospital (Seacroft).	J. S. Anderson, M.A., M.D., Ch.B., D.P.H.
Killingbeck Sanatorium	W. A. Todd, M.B., Ch.B.
Gateforth Sanatorium	H. E. Reburn, M.B., B.S., L.M.S.S.A.
Venereal Diseases Officer	J. P. Bibby, M.B., Ch.B., M.R.C.P.
Assistant Medical Officer for Venereal Disease	E. T. Ruston, M.B., Ch.B.
Do. do. ..	Dorothy Priestley, M.D., B.S.
City Bacteriologist	J. W. McLeod, M.B., Ch.B.
Chief Veterinary Officer	J. A. Dixon, M.R.C.V.S.
Assistant Veterinary Officer	E. F. McCleery, M.R.C.V.S., D.V.S.M.
City Analyst	C. H. Manley, M.A., F.I.C.
Assistant City Analyst	R. W. Sutton, B.Sc., F.I.C.
Divisional Sanitary Inspectors ..	E. Standish G. F. Marshall.
Removal Officer	D. Ferguson.
Chief Health Visitor and Inspector of Midwives	Mary E. Hughes.
Principal Clerks—	
Finance	J. W. Ridsdale.
Statistics	J. P. Moir.
Sanitary	A. Sparks.
Infectious Diseases	H. O. Peake.
Secretarial	P. A. Woodcock.
Food and Drugs	F. S. Kelly.

STAFF.

Special Inspectors including Smoke, Lodging-houses, Food and Drugs, Dairies, Meat, Housing and Workshops	16
Laboratory Assistant	1
Sanitary Inspectors	22
Female Sanitary Inspectors	2
Health Visitors	37
Chief Health Visitor and Inspector of Midwives	1
Tuberculosis Nurses	11
Dispensers	8
Masseuses	3
Clerical Staff	36
Removal and Disinfecting Staff	17
City Hospital, Seacroft (3 Assistant Medical Officers, 1 Matron, 2 Assistant Matrons, 1 Sister Tutor, 104 Nurses, 73 Female Servants, 48 Male Servants, including Engineers, Porters, etc., 1 Dispenser, 2 Clerks)	235
Killingbeck Sanatorium (1 Assistant Medical Officer, 1 Matron, 1 Assistant Matron, 1 Dispenser, 1 Clerk, 15 Porters, etc., 7 Sisters, 29 Nurses, 41 Maids, 2 Teachers, 1 Handicrafts Instructor) ..	100
Gateforth Sanatorium (1 Matron, 2 Assistant Nurses, 1 Cook, 7 Maids, 1 Working Foreman, 1 Handyman and 1 Gardener)	14
The Hollies Children's Sanatorium (1 Matron, 1 Sister, 3 Assistant Nurses, 2 Teachers, 1 Cook, 3 Maids, 1 Charwoman, 1 Handyman)	13
Infants' Hospital, Wyther (1 Matron, 1 Sister, 1 Masseuse, 4 Staff Nurses, 13 Probationer Nurses, 1 Cook, 5 Maids, 2 Laundresses, 1 Handyman, 1 Gardener)	30
Red House Day Nursery (1 Matron, 1 Sister, 10 Probationer Nurses)	12
Cobden Place Day Nursery and Blenheim Hostel (1 Matron, 1 Home Sister, 1 Staff Nurse, 10 Probationer Nurses, 2 Maids) ..	15
The Factory-in-the-Field (1 Manager, 1 Clerk). Firewood Department:—(1 Foreman, 16 Men, 3 Drivers, 7 Travellers). Brush Department:—(1 Foreman, 5 Brushmakers, 1 Traveller). Printing Department:—(1 Foreman, 3 Printers)	40

CITY OF LEEDS.

To the Chairman and Members of the Health Committee.

Gentlemen,

In presenting my Report on the health of the City for 1928 *I desire to draw your attention to one or two noteworthy features.*

The birth-rate continued to descend and reached what, up to the present, is low water mark, viz., 16.1.

The infantile mortality rate (79) *was the lowest on record, whilst the death rates from tuberculosis* (1.14) *and enteric fever* (0.002) *fell to figures never before reached in the city's history.*

As far as infectious diseases are concerned, the first half of the year was free from any serious epidemic, but scarlet fever broke out in the second half and developed into one of the most extensive outbreaks ever experienced in the city. The number of cases notified up to December 31*st was no fewer than* 3,515*—a figure never equalled in any previous year. Fortunately the disease was of a mild type and deaths were comparatively few, the death rate—*0.04*—being only slightly in excess of the average rate for the previous quinquennium.*

Pulmonary tuberculosis continued to give ground, the mortality rate for the year (0.95) *being the lowest on record.*

Notwithstanding the opening of a ward for advanced cases (30 *beds*) *at Seacroft Hospital, the institutional accommodation for this disease was taxed to the utmost. A new Sanatorium is urgently needed. A site for the purpose was obtained soon after the war in King Lane, and plans were prepared and approved by the City Council, but for financial reasons the scheme was dropped.*

I hope to be able to place before you during the current year a scheme for the boarding out of children living in contact with open cases of pulmonary tuberculosis—very often under the worst possible conditions —so as to diminish the incidence of the disease and reduce the possibility of spread from infected to non-infected members of the same household.

Plans will shortly be placed before you for the proposed new hospital at Elmet Hall to deal with orthopædics, surgical tuberculosis, and the diseases and disorders of infants. The need for the hospital is paramount, Leeds being one of the few large towns remaining in the Country which has not yet made this provision. I commend the

proposal to your very favourable consideration and venture to express a hope that you will agree to the project going forward without delay.

In other branches of the Department's activities the work has progressed as in previous years.

The housing problem remains unsolved, and I have once more to deplore the slow progress which is being made with slum clearance. Until the congested areas of the city are opened out and insanitary property demolished, the burden of sickness and death in the population must remain heavy.

The passage into law of the Local Government Act, 1929 marks a new epoch in the history of this Country. It is probably one of the greatest measures of social reform ever undertaken by any Parliament. The main features of the Act are the abolition of the Boards of Guardians and the unification and consolidation of the Public Medical Services. Leeds has suffered in the past from the disjointed nature of its public medical services and the passing of this Act presents a unique opportunity of making good this deficiency. I hope the opportunity will not be lost and that the fullest advantage will be taken of the new powers conferred on the Local Authority by the Act. In this connection I would once more point out the anomaly which has existed for many years, and still exists, of having the Public Health and School Medical Services entirely divorced from one another. These two services in aim, organization, and the functions they subserve are analogous, and there is no sound reason why they should remain separate. When the new proposals for the unification of the Public Health and Poor Law Services take permanent shape it will be a lamentable omission if the School Medical Service is left out of the Scheme.

I have once more to express my appreciation of the loyalty and devotion to duty of all the members of the staff. My particular thanks are due to the Medical Officers in charge of the various sub-departments by whose unremitting efforts the work of the Department has been maintained at a high standard and whose support throughout the year has been of the very greatest value.

To you, Sir, and your colleagues on the Health Committee, I offer my sincere thanks for the continued courtesy extended to me.

I am, Gentlemen,

Your obedient Servant,

J. JOHNSTONE JERVIS.

Public Health Department,
Leeds,
August, 1929.

SUMMARY, 1928.

LATITUDE 53°48′ North. LONGITUDE 1°32′ West.

AVERAGE HEIGHT ABOVE SEA LEVEL 250 feet.

AREA OF CITY	38,116 Acres.
POPULATION (Registrar-General's estimate)	476,500
POPULATION used for calculating Rates—to allow for change in Boundary	474,800
ESTIMATED NUMBER OF HOUSES	125,043
RATEABLE VALUE	£3,327,483
SUM REPRESENTED BY A PENNY RATE	£12,908

	1928.	Average. 1918-27.
BIRTH RATE (births per 1,000 living)	16·14	18·86
DEATH RATE (deaths per 1,000 living)	12·92	14·31
NATURAL INCREASE OF POPULATION (Excess of births over deaths in the year)	1,532	2,095
INFANT MORTALITY RATE (Deaths under 1 year per 1,000 births)	79	102
DEATH RATE from Pneumonia and Bronchitis	1·74	2·43
,, ,, Cancer	1·47	1·27
,, ,, Diarrhœa and Enteritis (under 2 years) per 1,000 births	13·70	15·05

	Cases.	Case-rate.	Deaths.	Death rate.
SCARLET FEVER	3,515	7·40	18	0·04
DIPHTHERIA	634	1·34	21	0·04
TYPHOID FEVER	6	0·01	1	0·00
MEASLES	3,679	7·75	21	0·04
PULMONARY TUBERCULOSIS ..	766	1·61	453	0·95
OTHER FORMS OF TUBERCULOSIS	158	0·33	89	0·19

City of Leeds.

Natural and Social Conditions.

Area.—During the year the area of the City was increased from 30,136¾ to 38,106 acres by the inclusion of Templenewsam, Alwoodley and Eccup Civil Parishes and a portion of Austhorpe Civil Parish. Eccup and Alwoodley are on the North boundary, Austhorpe and Templenewsam on the East and South-East respectively.

Population.—The population at the 1921 census was 458,232, adjusted later to 465,500. At the middle of the year 1928 the population as estimated by the Registrar General was 476,500, which is a decrease of 1,100 on the population for 1927 and an increase of 11,000 on the adjusted census population. The estimated population for the year relates to the area as existing at the end of the year, but as the change of boundary consequent upon the inclusion of Eccup, Alwoodley, Austhorpe and Templenewsam only took place on April 1st, the population requires to be adjusted for the purpose of calculating the birth and death-rates. The estimated population on which the rates have been calculated is 474,800.

The reduction in the estimate of the population of the City for 1928 need occasion no surprise. The rate of growth of Leeds as of other Northern cities has been slowing up for some years, due no doubt on the one hand to the falling birth-rate, and on the other, to the tendency of industry to move southward.

The following table shows the constitution of the population in age groups at the 1921 census :—

1921 Census Populations in Age Groups.

Sex.	Under 1	1 and under 5	5 and under 15	15 and under 25	25 and under 45	45 and under 65	65 and upwards	Total.
Males ..	4,645	13,419	41,533	38,348	63,219	44,198	10,125	215,487
Females ..	4,511	13,217	41,354	45,677	76,492	47,830	13,664	242,745
Total ..	9,156	26,636	82,887	84,025	139,711	92,028	23,789	458,232

Population in Wards.

Ward.	Census, April 2nd, 1911.	Census, June 19th, 1921.	Adjusted population, 1921.	Estimated population middle of 1928.
Central	14,503	12,528	12,727	12,583
North§	41,968	42,423	43,096	44,089
North-East ..	36,239	36,011	36,582	36,514
New Ward* ..	..	7,814	7,938	13,754
East	34,701	35,272	35,832	35,964
South	12,562	12,817	13,020	12,897
East Hunslet† ..	33,562	35,264	35,823	37,798
West Hunslet ..	35,766	36,129	36,702	36,293
Holbeck	29,679	29,441	29,908	29,568
Mill Hill	5,856	5,286	5,370	5,252
West	20,553	22,029	22,378	21,987
North-West ..	30,570	31,531	32,031	31,574
Brunswick ..	23,219	23,930	24,310	23,906
New Wortley ..	16,714	17,773	18,055	17,934
Armley & Wortley	37,419	36,762	37,345	37,351
Bramley	23,937	23,481	23,853	24,582
Headingley‡ ..	48,302	49,741	50,530	54,454
City	445,550	458,232	465,500	476,500

§ Including Alwoodley (1921 Census, 205) and portion of Eccup added to Leeds, April 1st, 1928.

* Roundhay, Seacroft, Shadwell and Cross Gates added to Leeds, November 1912 (1911 Census, 7,398), including Templenewsam (1921 Census, 3,393) and portion of Austhorpe (1921 Census, 71) added to Leeds, April 1st, 1928.

† Including Middleton added to Leeds, April 1st, 1920 (1911 Census, 1,207).

‡ Including portion of Adel added to Leeds, April 1st, 1926 (1921 Census, 987) and portion of Eccup added to Leeds, April 1st, 1928.

§‡ The 1921 Census population of Eccup which was divided between the North and Headingley Wards was 234.

The number of occupied houses at the 1921 census was 108,534 and unoccupied 2,737. The total number of families occupying these houses was 110,182. On June 30th, 1928 the number of occupied houses was estimated at 122,888 and unoccupied as 1,212.

The distribution of the population throughout the 17 wards into which the City is divided, as far as it can be ascertained, is given in the table on page 12. The development of the new housing estates, and the consequent movement of population, makes it rather difficult to estimate the correct ward populations. The figures are therefore only approximately accurate.

Rateable Value.—The rateable value of the city was £3,327,483 and the estimated product of a penny rate £12,908. In 1927 the corresponding figures were £3,148,874 and £12,008. The figures for 1928 are arrived at after taking into account reductions under the Rating and Valuation Act, 1928, which had the effect of reducing the rateable value on which the rate is made by £58,774 and the estimated penny rate by £237.

Principal Industries.—The principal industries in the city remained as in previous years, namely, engineering, iron and steel, woollen, ready-made clothing, leather, boot and shoe, printing and dyeing. In addition Leeds is also an important commercial, shopping and railway centre. It possesses a modern university and medical school, a large well-equipped technical school, and is a well-known training centre for teachers.

The depression in the engineering, iron and steel, and woollen trades continued during the year and in consequence the amount of unemployment remained considerable.

Meteorological Conditions.—The hours of sunshine recorded in the city during the year increased from 1,177·0 in 1927 to 1,320·5 in 1928. The sunniest month was July (211·25 hours) and the darkest, December (12·00 hours). The rainfall was 30·51 inches as compared with 35·09 in 1927. The wettest month was January (5·23 inches) and the driest September (0·10 inches).

The month with the highest average temperature was July (65·65) and that with the lowest December (40·94).

The meteorological data for the twelve months of the year are set out in the table on page 53.

National Health Insurance Acts.—The total number of persons insured in the city under the National Health Insurance Acts on December 31st, 1928 was 214,425 as compared with 211,766 on January 1st. The number of doctors, including permanent assistants, on the panel at the end of the year was 238 and the number of prescriptions dispensed was 1,062,999.

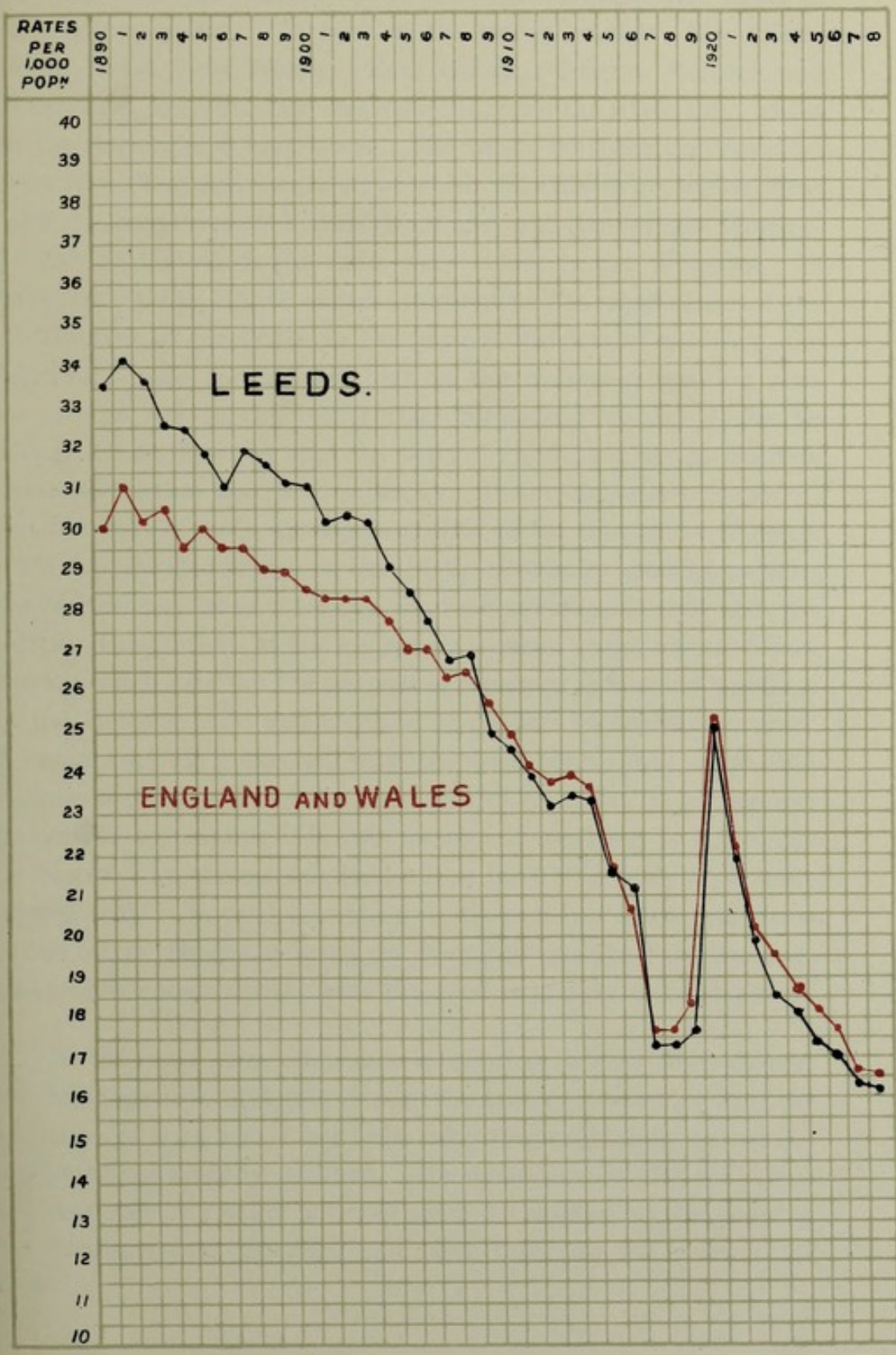
VITAL STATISTICS.

Marriages.—The number of marriages which took place in Leeds during the year was 3,927 corresponding to a marriage rate of 16·5 as compared with 16·7 for the previous year. The marriage rate of England and Wales for the year was 15·3 as compared with 15·7 for 1927. It should be noted that for the first time in the history of the City the areas of the registration districts corresponded with the area of the City as a whole. Marriages, births and deaths are now therefore computed on the same basis and henceforth the marriage rate will have a comparative value which in the past it has not had.

Births.—The number of births registered during the year was 7,978 comprising 4,113 males and 3,865 females. Of these 216 males and 191 females did not belong to the City and were transferred out, whilst 51 males and 43 females belonging to Leeds, though born outside, were transferred in, making a nett total of 7,665 comprising 3,948 males and 3,717 females. Compared with the figures for the previous year this is a decrease of 1 male and 124 females or a total decrease of 125.

The birth-rate was 16·1 as compared with 16·3 for the previous year and an average of 17·5 for the previous five years. This constitues a new record for the City, the rate being the lowest yet reached, though the difference between 1928 and 1927 was only the matter of 2 points. Compared with the 12 other large towns in England and Wales Leeds had the lowest rate with the exception of Bradford.

BIRTH RATE, 1890-1928.



The table on page 19 shows the distribution of the births in the various wards. In nine of the wards, namely, New, East, South, West, New Wortley, East Hunslet, Central, Holbeck and North East, the birth-rate was higher than for the whole City, whilst in the remainder it was lower. The wards with the highest rates were New, East and South, all of which were above 20, whilst those with the lowest were Mill Hill, Headingley and Armley and Wortley. In five of the wards the rates were below 14 per thousand. In previous reports I have called attention to the significance of the distribution of the births in the various districts of the City, the birth-rate being consistently high in the congested working class wards and low in the better class residential wards. It by no means follows however that the type of child born say in Holbeck is inferior to that born in Headingley. It may actually be superior, but the risks of early damage is greater in the case of the Holbeck child than the Headingley, so that by the time baby-hood is complete, the former may be at a serious disadvantage as compared with the latter. Illustrations of this are not uncommon at the infant welfare centres which exist for the purpose of trying to reduce the handicap of the Holbeck child and increase its chances of healthy survival. I am not at all impressed with the suggestion often made that because a child is born in a poor district of a City it is therefore necessarily a weakling. It may become a weakling owing to the influences of an evil environment but at birth it is often a perfectly normal child. Nevertheless the fact that such a large proportion of the future citizens of Leeds are born into these bad surroundings and so few comparatively into the good is greatly to be deplored.

In the same connection it is interesting to note that whereas the marriage rate in Leeds during the last 17 years has, with the exception of 1915 and a few years after the war, hardly varied the birth-rate has steadily declined. The significance of this is obvious and need not be further enlarged upon. I append a table showing the corresponding marriage and birth rates for the years 1911-1928.

MARRIAGE AND BIRTH-RATES 1911-1928.

Year.	No. of Marriages.	Marriage rate per 1,000 Population.	No. of Births.	Birth-rate per 1,000 Population.
1911	3,717	15·7	10,562	23·8
1912	3,801	16·0	10,309	23·1
1913	3,925	16·4	10,877	23·4
1914	4,008	16·6	10,652	23·3
1915	4,858	20·2	9,877	21·5
1916	3,701	15·5	9,432	21·1
1917	3,300	14·2	7,566	17·3
1918	3,710	15·5	7,392	17·3
1919	5,083	21·2	7,564	17·6
1920	5,620	23·5	11,229	25·0
1921	4,566	18·7	10,144	21·8
1922	4,183	17·2	9,253	19·8
1923	4,001	16·3	8,684	18·5
1924	4,023	16·3	8,558	18·1
1925	3,807	15·4	8,180	17·3
1926	3,644	14·8	8,065	17·0
1927	4,028	16·7	7,790	16·3
1928	3,927	16·5	7,665	16·1

Details respecting the notification and visitation of births are given on page 139.

Birth-rate in Quarters.—The highest rate was in the second quarter 17·6, and the lowest in the fourth, 14·9, whilst in the first and third it was 16·0 and 16·1 respectively.

Excess of Births over Deaths.—The excess of births over deaths or what is generally spoken of as the " natural increase of population" was 1,532 as compared with 1,592 for last year and an average of 2,095 for the previous ten years. This is the lowest natural increment of population recorded since 1919 when there was an unusually high death-rate owing to the prevalence of influenza.

As in the two previous years, enquiries were made as to the size of the families into which the children were born. The table

appended gives the results of those enquiries for the last three years. It will be noticed that in 1926, 71·4 per cent., of the births investigated were into families of two children and under, in 1927 the percentage was 72·0, and in the year under review it was 72·6. As regards the births occuring in families of more than six children, the percentages for the same years were 6·2, 5·3 and 5·4 respectively.

BIRTHS OCCURRING IN ORDER OF SIZE OF FAMILY.

	1926.		1927.		1928.	
	Births.	Percentage.	Births.	Percentage.	Births.	Percentage.
No children..	2,645	33·03	2,633	34·04	2,673	35·32
1 child ..	1,924	24·03	1,787	23·11	1,725	22·79
2 children..	1,152	14·39	1,148	14·84	1,100	14·53
3 ,, ..	771	9·63	759	9·81	694	9·17
4 ,, ..	498	6·22	482	6·23	466	6·16
5 ,, ..	325	4·06	314	4·06	313	4·14
6 ,, ..	196	2·45	198	2·56	191	2·52
7 ,, ..	166	2·07	144	1·86	137	1·81
8 ,, ..	122	1·52	88	1·14	103	1·36
9 ,, ..	86	1·07	68	0·88	53	0·70
10 ,, ..	54	0·67	47	0·61	59	0·78
11 ,, ..	35	0·44	29	0·37	27	0·36
12 ,, ..	20	0·25	20	0·26	15	0·20
13 ,, ..	3	0·04	6	0·08	8	0·11
14 ,, ..	4	0·05	4	0·05	3	0·04
15 ,, ..	4	0·05	4	0·05	1	0·01
16 ,, ..	3	0·04	1	0·01	1	0·01
17 ,, ..	..	..	2	0·03	..	..
Total births investigated	8,008	100	7,734	100	7,569	100

Illegitimate Births.—Of the 7,665 nett births registered 7,275 (3,749 males, 3,526 females) or 94·9 per cent., were legitimate and 390 (199 males, 191 females) or 5·1 per cent., were illegitimate. The ratio of illegitimate to legitimate was 1 to 19, last year it was 1 to 20.

Birth Rate.

Year.	No. of births.	Birth rate, LEEDS.	England and Wales.
1890-1894	62,270	**33·2**	30·5
1895-1899	63,873	**31·5**	29·6
1900-1904	64,791	**30·1**	28·4
1905-1909	59,117	**26·9**	26·7
1910-1914	53,267	**23·6**	24·2
1915	9,877	**21·5**	21·9
1916	9,432	**21·1**	20·9
1917	7,566	**17·3**	17·8
1918	7,392	**17·3**	17·7
1919	7,564	**17·6**	18·5
1920	11,229	**25·0**	25·5
1921	10,144	**21·8**	22·4
1922	9,253	**19·8**	20·4
1923	8,684	**18·5**	19·7
1924	8,558	**18 1**	18·8
1925	8,180	**17·3**	18·3
1926	8,065	**17.0**	17.8
1927	7,790	**16·3**	16·7
1928	7,665	**16·1**	16·7

Birth Rate in Quarters.

	I.	II.	III.	IV.	Year.
1918	17·4	16·8	17·8	17·1	17·3
1919	13·6	14·6	17·5	24·4	17·6
1920	30·1	25·6	23·7	20·8	25·0
1921	21·9	22·4	22·2	20·7	21·8
1922	21·2	20·7	19·5	17·9	19·8
1923	18·9	19·5	18·1	17·4	18·5
1924	18·7	18·4	18·7	16·8	18·1
1925	17·0	19·0	17·5	15·7	17·3
1926	17·0	18·5	17·2	15·5	17·0
1927	17·0	17·3	15·6	15·4	16·3
1928	16·0	17·6	16·1	14·9	16·1

Births and Birth Rate in Wards

Municipal Ward.	Estimated Population middle of 1928.	Nett births.	Birth-rate.	Illegitimate births.	Percentage of illegitimate births to total births.
Central	12,583	217	**17·25**	15	6·9
North*	43,839	662	**15·10**	37	5·6
North-East	36,514	591	**16·19**	31	5·2
New Ward* ..	12,337	280	**22·70**	12	4·3
East	35,964	757	**21·05**	29	3·8
South	12,897	266	**20·62**	20	7·5
East Hunslet ..	37,798	717	**18·97**	35	4·9
West Hunslet ..	36,293	514	**14·16**	13	2·5
Holbeck	29,568	486	**16·44**	18	3·7
Mill Hill	5,252	61	**11·61**	6	9·8
West	21,987	419	**19·06**	35	8·4
North-West	31,574	436	**13·81**	36	8·3
Brunswick	23,906	336	**14·06**	28	8·3
New Wortley ..	17,934	341	**19·01**	21	6·2
Armley and Wortley	37,351	507	**13·57**	13	2·6
Bramley	24,582	342	**13·91**	10	2·9
Headingley*.. ..	54,421	733	**13·47**	31	4·2
City*	474,800	7,665	**16·14**	390	5·1

* Population adjusted to allow for change in boundary during the year. The mid-year populations after the change are North, 44,089; New, 13,754; Headingley, 54,454; and City, 476,500.

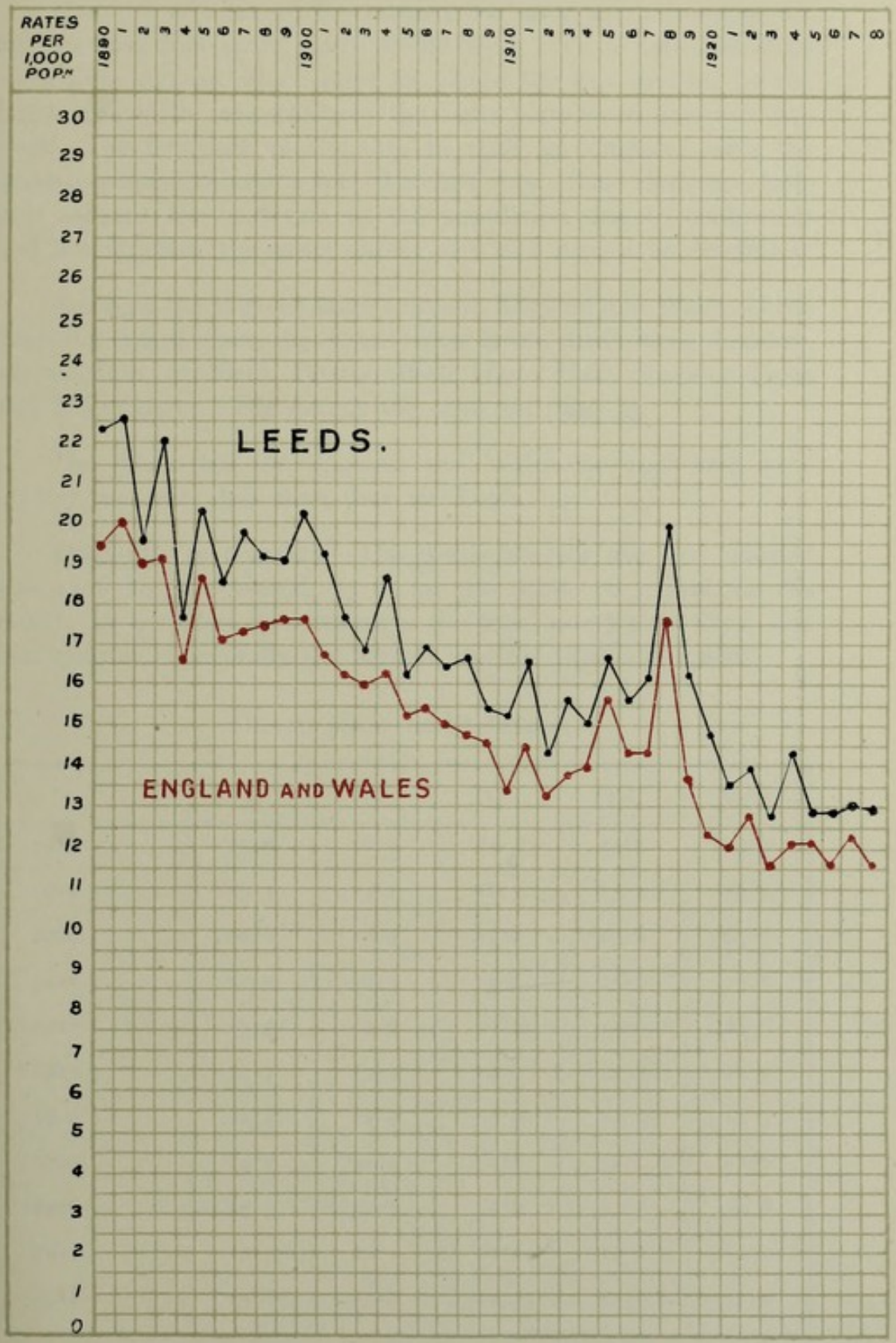
Illegitimate Births.

Year.	Illegitimate births.	Percentage of nett births registered.	Rate per 1,000 estimated population.
1918 ..	528	7·1%	1·23
1919 ..	567	7·5%	1·32
1920 ..	631	5·6%	1·41
1921 ..	565	5·6%	1·21
1922 ..	511	5·5%	1·09
1923 ..	438	5·0%	0·93
1924 ..	423	4·9%	0·90
1925 ..	422	5·2%	0·89
1926 ..	434	5·4%	0·92
1927 ..	371	4·8%	0·78
1928 ..	390	5·1%	0·82

Reference to the illegitimate death rate will be found on pages 125 and 126.

Deaths.—The number of deaths registered during the year was 6,419, comprising 3,423 males and 2,996 females. The inward transfers numbered 259, namely 142 males and 117 females, and the outward transfers 545, namely 310 males and 235 females, which after the necessary adjustment, leaves a nett total of 6,133 deaths debitable to the City, made up of 3,255 males and 2,878 females. The crude death rate for the year was 13·5 and the nett 12·9; the corresponding figures for the previous year being 13·5 and 13·0. The average death-rate for the previous five years was 13·1.

DEATH RATE, 1890 - 1928.



Had the rate for 1928 remained the same as the average for the previous five years, there would have been a nett loss of 95 more lives, against which must be placed the loss entailed by the fall in the birth rate which in the same period accounted for 620 lives. The nett loss to the City in 1928 as compared with the preceding quinquennium was therefore 525. This does not take into account the variation in the population due to emigration and immigration, the exact extent of which cannot be computed.

Amongst the thirteen large towns in England and Wales, Leeds occupied eighth place, the towns with lower rates being London, Birmingham, Sheffield, Bristol, West Ham, Hull, Stoke-on-Trent and Nottingham. For details see table on page 33.

The death-rate for England and Wales for 1928 was 11·7 or 9·3 per cent., less than that for Leeds.

Death-rate in Quarters.—The death-rate for the first quarter was 14·6, for the second, 13·0, for the third, 10·2, and for the fourth, 13·9. That distribution is the usual one for the City ; the first quarter is generally the highest and the third the lowest.

DEATH RATE IN QUARTERS.

	I.	II.	III.	IV.	Year.
1918	19·7	16·0	14·3	29·8	19·9
1919	25·5	13·1	11·3	15·2	16·2
1920	20·6	13·9	11·2	13·1	14·7
1921	14·5	12·5	11·3	15·8	13·5
1922	17·5	14·6	10·6	12·9	13·9
1923	14·7	13·4	10·6	12·4	12·7
1924	22·4	12·9	9·9	12·2	14·3
1925	14·8	11·4	10·8	14·1	12·8
1926	15·7	12·7	9·9	13·1	12·8
1927	17·5	12·2	10·1	12·2	13·0
1928	14·6	13·0	10·2	13·9	12·9

ANNUAL DEATHS AND DEATH RATE.

Year.	Population.	Nett deaths.	Death-rate LEEDS.	Death-rate England and Wales.
1901	429,383	8,204	**19·2**	16·9
1902	431,043	7,699	**17·6**	16·3
1903	432,703	7,263	**16·8**	15·5
1904	434,363	8,039	**18·6**	16·3
1905	436,023	7,047	**16·2**	15·3
1906	437,683	7,350	**16·9**	15·5
1907	439,343	7,167	**16·4**	15·1
1908	441,003	7,430	**16·6**	14·8
1909	442,663	6,806	**15·4**	14·6
1910	444,323	6,711	**15·2**	13·5
1911	445,983	7,331	**16·5**	14·6
1912	447,746	6,396	**14·3**	13·3
1913	457,295	7,237	**15·6**	13·8
1914	459,260	6,885	**15·0**	14·0
1915	459,260	7,609	**16·6**	15·7
1916	446,349	6,946	**15·6**	14·4
1917	438,254	7,052	**16·1**	14·4
1918	427,589	8,529	**19·9**	17·6
1919	430,834	6,992	**16·2**	13·7
1920	448,913	6,591	**14·7**	12·4
1921	465,500	6,285	**13·5**	12·1
1922	466,700	6,479	**13·9**	12·8
1923	469,900	5,986	**12·7**	11·6
1924	471,600	6,747	**14·3**	12·2
1925	472,900	6,037	**12·8**	12·2
1926	473,400	6,062	**12·8**	11·6
1927	477,600	6,198	**13·0**	12·3
1928	474,800*	6,133	**12·9**	11·7

* Population adjusted to allow for change in boundary during the year. The mid-year population after the change is 476,500.

Death-rates in Wards.—The wards with the highest death-rates were West, South and East, whilst those with the lowest were Headingley, North West and East Hunslet. The difference between the highest and the lowest, that is West and Headingley amounted to 4·84, or 43·2 per cent., whilst that between the highest and the City was 3·13, or 24·2 per cent. Once again, the West ward had the highest death-rate. During the last eleven years the West ward has had the highest death-rate on seven occasions and on the other four it occupied second place.

DEATHS AND DEATH RATE IN WARDS.

MUNICIPAL WARD	Area in Acres.	Estimated population middle of 1928.	Nett deaths.	Death-rate.
Central	209	12,583	178	**14·15**
North*	6,172¼	43,839	572	**13·05**
North-East	1,268	36,514	466	**12·76**
New Ward*	8,290½	12,337	164	**13·29**
East	1,650	35,964	513	**14·26**
South	343	12,897	198	**15·35**
East Hunslet	3,022¾	37,798	455	**12·04**
West Hunslet	1,414	36,293	504	**13·89**
Holbeck	507	29,568	371	**12·55**
Mill Hill	233	5,252	66	**12·57**
West	291	21,987	353	**16·05**
North-West	732	31,574	360	**11·40**
Brunswick	498	23,906	301	**12·59**
New Wortley	412	17,934	232	**12·94**
Armley and Wortley ..	1,604	37,351	491	**13·15**
Bramley	4,599	24,582	299	**12·16**
Headingley*	6,860½	54,421	610	**11·21**
City*	38,106	474,800	6,133	**12·92**

* Population adjusted to allow for change in boundary during the year. The mid-year populations after the change are North, 44,089; New, 13,754; Headingley, 54,454; and City, 476,500.

Principal Causes of Death.

Death rate.	Diseases.	No. of deaths in 1928 (nett.)	Increase or decrease compared with 1927.	Houses.	
				Through.	Back-to-back.
0·00	Enteric Fever	1	− 1	..	1
..	Small-pox	..	..	..	..
0·04	Measles	21	− 96	2	19
0·04	Scarlet Fever	18	+ 12	5	13
0·08	Whooping Cough	36	− 8	9	27
0·04	Diphtheria	21	− 7	10	11
0·21	Influenza	100	− 73	38	62
0·04	Erysipelas	19	+ 1	9	10
0·95	Pulmonary Tuberculosis ..	453	− 4	126	323
0·19	Other Tuberculous Diseases	89	− 12	29	60
1·47	Cancer, malignant disease	698	+ 49	290	405
0·09	Rheumatic Fever	44	+ 12	15	29
0·02	Meningitis	10	− 7	5	5
0·71	Cerebral Hæmorrhage ..	337	− 26	143	192
2·18	Organic Heart Disease ..	1,037	+ 42	416	617
0·89	Arterio-sclerosis	424	+ 66	161	253
0·72	Bronchitis	343	− 8	104	239
1·02	Pneumonia (all forms) ..	485	+ 8	161	320
0·10	Other diseases of respiratory organs	48	− 21	15	33
0·24	Diarrhœa and Enteritis ..	116	+ 11	18	98
0·05	Appendicitis and Typhlitis	26	− 12	11	15
0·05	Cirrhosis of Liver	22	+ 4	14	8
0·37	Nephritis and Bright's Disease	175	− 17	78	96
0·03	Puerperal Fever	14	− +	4	10
0·05	Other accidents and diseases of Pregnancy and Parturition	22	− 2	9	13
0·54	Congenital Debility and Malformation, including Premature Birth ..	257	+ 35	79	178
0·44	Violent Deaths, excluding Suicide	210	+ 26	78	126
0·12	Suicide	56	+ 18	23	32
2·20	Other Defined Diseases ..	1,045	− 58	431	609
0·01	Diseases ill-defined or unknown	6	+ 3	3	3
12·92	Totals	6,133	− 65	2,286	3,807

Of the 6,133 deaths, 40 had no home.

Causes of, and Ages at Death during the Calendar Year, 1928.

Causes of Death.	Nett Deaths at the subjoined ages of "Residents" whether occurring within or without the District.									Total Deaths whether of "Residents" or "Non-Residents" in Institutions in the District.
	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. Enteric Fever	1	..	..	..	..	..	..	1	..	..
2. Small-pox	..	..	..	..	..	..	..	..	..	..
3. Measles	21	3	6	10	2	..	..	..	..	8
4. Scarlet Fever	18	2	..	6	8	2	..	..	..	12
5. Whooping Cough	36	19	15	2	..	..	..	..	..	16
6. Diphtheria	21	1	2	8	8	..	1	1	..	19
7. Influenza	100	5	1	2	..	9	19	31	33	9
8. Erysipelas	19	..	..	..	1	1	2	10	5	16
9. Pulmonary Tuberculosis	453	1	2	4	8	75	197	141	25	179
10. Other Tuberculous Diseases	89	10	11	17	24	10	9	8	..	78
11. Cancer, malignant disease	698	..	..	..	..	6	63	338	291	288
12. Rheumatic Fever	44	..	..	..	12	11	13	4	4	13
13. Meningitis	10	5	1	1	2	..	..	1	..	6
14. Cerebral Hæmorrhage, &c.	337	..	..	..	..	1	12	112	212	88
15. Organic Heart Disease	1,037	..	..	..	8	9	64	329	627	320
16. Arterio-sclerosis	424	..	..	..	..	..	1	75	348	181
17. Bronchitis	343	14	2	2	2	2	23	82	216	24
18. Pneumonia (all forms)	485	80	49	36	16	14	72	142	76	189
19. Other diseases of respiratory organs	48	..	1	..	1	2	7	17	20	11
20. Diarrhœa and Enteritis	116	89	16	..	1	..	5	2	3	92
21. Appendicitis and Typhlitis	26	..	..	1	6	6	3	7	3	40
22. Cirrhosis of Liver	22	..	..	..	1	..	4	15	2	12
23. Nephritis and Bright's Disease	175	1	..	..	..	7	25	76	66	79
24. Puerperal Fever	14	..	..	..	..	3	11	..	..	15
25. Other accidents and diseases of Pregnancy and Parturition	22	..	..	..	..	6	16	..	..	27
26. Congenital Debility and Malformation, including Premature Birth	257	249	2	3	3	..	..	..	..	160
27. Violent Deaths, excluding Suicide	210	16	4	7	18	18	45	44	58	160
28. Suicide	56	..	..	..	..	3	7	34	12	13
29. Other Defined Diseases	1,045	110	10	14	34	45	126	318	388	552
30. Diseases ill-defined or unknown	6	1	..	..	.	..	..	4	1	5
Totals	6,133	606	122	113	155	230	725	1,792	2,390	2,612

Causes of Death.—The principal causes of death were in order of numerical importance, organic heart disease, cancer, pneumonia, pulmonary tuberculosis and arterio-sclerosis, which together accounted for 50·5 per cent. of the total deaths.

Diseases of the respiratory system including pneumonia, bronchitis and influenza, but excluding pulmonary tuberculosis, accounted for 976 or 15·9 per cent. of the total deaths from all causes. Last year this group of diseases was responsible for 17·3 per cent. of the total deaths. As is well known young children are especially susceptible to lung complaints and in consequence one expects a high mortality from these causes in the early age groups. The number of children under five years of age who died from respiratory diseases in 1928 was 192 or 22·8 per cent. of the total deaths under five, as compared with 246 deaths and 24·8 per cent. for the previous year. In previous reports I have pointed out that at least as far as young people are concerned diseases of the respiratory system are largely preventable. Parents can do much in this direction by ensuring that their children live under the healthiest conditions possible and that they are not exposed to unnecessary risks.

Street Accidents.—The number of street accidents having a fatal termination during the year was 58 of which 53, or 91·4 per cent., were due to motor vehicles. Last year the number was 57, of which 52, or 91·2 per cent., were due to motor vehicles.

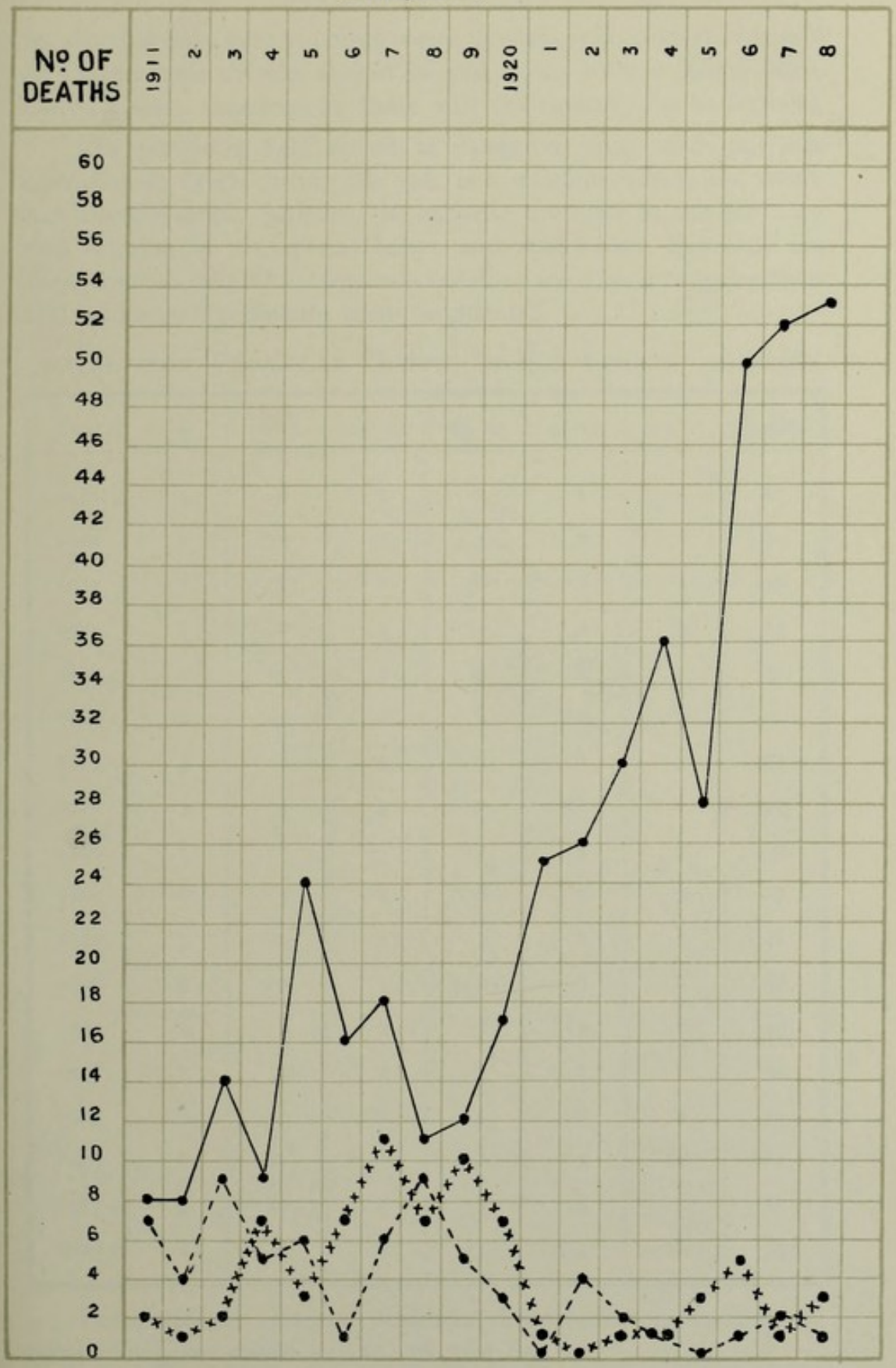
An examination of the table on page 27 reveals the fact that there were 24 deaths amongst children under 15 years and adults over 65 and 34 in the age groups between 15 and 65. Comparing these figures with the figures for the previous year it will be noticed that there was a decrease of five in the number of deaths amongst children and adults over 65 and an increase of six in the age groups between 15 and 65.

The impression that a considerable number of the deaths resulting from street accidents is avoidable is probably well founded and points to the desirability of adopting measures which with the minimum interference to traffic will ensure a definite margin of safety alike to passenger, pedestrian and driver. The ever increasing volume of fast moving traffic makes control increasingly difficult, and as far as the pedestrian is concerned adds to the terrors of the open street and highway. At the same time it also imposes an obligation on the traffic authority to see that those who must perforce use the streets, and who by reason of age or infirmity are unable to secure their own safety, are provided with reasonable facilities

LEEDS.

DEATHS FROM VEHICULAR TRAFFIC.

— 1911 - 1928. —



for crossing especially at points where the danger is greatest. Careless or incompetent driving should be put down with a strong hand. Only by such measures as these will the casualty list be reduced.

The system of light signals at dangerous cross roads put into operation in Leeds during the year is a welcome innovation which has already amply justified the expense involved in the purchase and erection of the special lamps and standards. Not only are these controls helpful to motorists but they are a boon to pedestrians and undoubtedly obviate many accidents.

DEATHS FROM VEHICULAR TRAFFIC IN AGE GROUPS, 1911–1928.

Year.	–5	5–15	15–25	25–45	45–65	65+	Totals.
1911	4	6	2	2	1	2	17
1912	2	3	2	3	2	2	14
1913	1	5	2	6	9	5	28
1914	1	2	4	4	7	7	25
1915	1	11	2	5	8	7	34
1916	2	4	2	3	10	6	27
1917	4	8	3	7	8	7	37
1918	3	4	3	2	11	6	29
1919	1	8	—	1	13	7	30
1920	—	3	6	8	5	5	27
1921	3	9	3	3	1	7	26
1922	3	10	2	5	8	2	30
1923	2	6	7	7	12	6	40
1924	5	9	6	5	7	7	39
1925	5	7	6	5	6	5	34
1926	6	12	7	8	17	12	62
1927	4	20	9	6	13	5	57
1928	2	10	6	14	14	12	58

For notes on infantile diarrhœa, bronchitis, pneumonia and tuberculosis, see pages 52, 55, 56 and 85.

Housing and Death.—Of the total number of deaths which occurred in Leeds during the year, 3,807, or 62·1 per cent., occurred in back-to-back houses, 2,286, or 37·3 per cent., in throughs, whilst 40, or 0·6 per cent., had no fixed domicile. The ratio of through houses to back-to-backs is 1 to 1·7.

Deaths in Age Groups.—The table on page 29 sets out the deaths according to age groups. The age group showing the greatest decrease was 1-2 and the one with the greatest increase, 45-65. The number of deaths of children in the age groups 0-1, 1-2, and 2-5 was 841, or 13·7 per cent. of the total deaths, as compared with 993 deaths and 16·0 per cent. for the previous year and 1,144 deaths and 18·8 per cent. for the year 1926. Last year I called attention to the drop in the number of deaths of children under five years and it is very pleasing to have to record a further decline in year under review. A further analysis of the table will show that the the deaths of persons under 45 years numbered 1,951, or 31·8 per cent. of the total deaths, as compared with 2,136 deaths and 34·5 per cent. for the year 1927.

The postponement of death is the object of all sanitary reform, and that the efforts already made in this direction are bearing fruit is amply demonstrated by the decrease in the number of deaths in the early age groups and the corresponding increase in the later.

COMPARISON OF PERCENTAGES OF DEATHS IN THE VARIOUS AGE GROUPS OF 1928, AS COMPARED WITH THE PREVIOUS DECENNIUM.

Period.	–1	1–2	2–5	5–15	15–25	25–45	45–65	65+
1918—1927 ..	13·5	3·9	3·8	3·6	4·8	12·4	25·8	32·2
Year 1928 ..	9·9	2·0	1·8	2·5	3·8	11·8	29·2	39·0
Decrease –	–3·6	–1·9	–2·0	–1·1	–1·0	–0·6	—	—
Increase +	—	—	—	—	—	—	+3·4	+6·8

Infant Mortality.—The number of deaths of children under one year numbered 606 or 9·9 per cent. of the total deaths. The infant mortality rate corresponding was 79 per thousand births or 2 less than for the previous year (81).

This subject is dealt with in detail on page 118.

Deaths in Age Groups (Nett), 1918-28.

Together with the percentage of the total deaths, represented by each group (in italics).

Year.	Under 1	1–2	2–5	5–15	15–25	25–45	45–65	65+	Total.
1918	984 *11·5%*	474 *5·6%*	743 *8·7%*	514 *6·0%*	579 *6·8%*	1,214 *14·2%*	2,007 *23·5%*	2,014 *23·6%*	**8,529**
1919	899 *12·9%*	239 *3·3%*	298 *4·3%*	299 *4·3%*	344 *4·9%*	957 *13·7%*	1,780 *25·4%*	2,176 *31·2%*	**6,992**
1920	1,232 *18·7%*	255 *3·9%*	283 *4·3%*	283 *4·3%*	291 *4·4%*	844 *12·8%*	1,572 *23·9%*	1,831 *27·8%*	**6,591**
1921	997 *15·9%*	278 *4·4%*	130 *2·1%*	202 *3·2%*	297 *4·7%*	765 *12·2%*	1,562 *24·9%*	2,054 *32·7%*	**6,285**
1922	935 *14·4%*	283 *4·4%*	211 *3·3%*	198 *3·1%*	282 *4·4%*	766 *11·8%*	1,661 *25·6%*	2,143 *33·1%*	**6,479**
1923	773 *12·9%*	189 *3·2%*	153 *2·6%*	166 *2·8%*	277 *4·6%*	751 *12·5%*	1,620 *27·1%*	2,057 *34·4%*	**5,986**
1924	921 *13·7%*	270 *4·0%*	202 *3·0%*	173 *2·6%*	275 *4·1%*	786 *11·6%*	1,804 *26·7%*	2,316 *34·3%*	**6,747**
1925	748 *12·4%*	177 *2·9%*	161 *2·7%*	159 *2·6%*	297 *4·9%*	709 *11·7%*	1,657 *27·4%*	2,129 *35·3%*	**6,037**
1926	748 *12·3%*	206 *3·4%*	190 *3·1%*	158 *2·6%*	251 *4·1%*	676 *11·2%*	1,658 *27·4%*	2,175 *35·9%*	**6,062**
1927	629 *10·1%*	204 *3·3%*	160 *2·6%*	183 *3·0%*	246 *4·0%*	714 *11·5%*	1,711 *27·6%*	2,351 *37·9%*	**6,198**
1928	606 *9·9%*	122 *2·0%*	113 *1·8%*	155 *2·5%*	230 *3·8%*	725 *11·8%*	1,792 *29·2%*	2,390 *39·0%*	**6,133**

Cremation.—Out of a total of 6,133 deaths which occurred in the City during 1928 the number of bodies disposed of by cremation was only 31 or 0·51 per cent. This is practically the same as for the previous year. Progress in this very desirable sanitary reform is disappointingly slow and were it not that one appreciates the conservative attitude which has always been the characteristic of the people of these Islands, especially in matters relating to the disposal of the dead, one might almost despair of cremation ever becoming popular. I have demonstrated in previous reports the advantages, both from a hygienic and an economic point of view, of incineration over all other methods of disposal available to the inhabitants of an inland community and it is not necessary for me to reiterate them now. I would, however, appeal to the younger generation to consider whether it is in the best interests of succeeding generations that large areas of valuable land within the confines of the City, often in close proximity to inhabited houses, should be devoted to a purpose which though sentimentally excusable is from every other point of view indefensible.

There is a proposal afoot for the erection of a crematorium in connection with the new cemetery shortly to be opened in Holbeck. If the proposal matures, the facilities for cremation in the City will practically be doubled and as the intention is to make the charge extremely moderate one of the objections constantly advanced against cremation at the present time—that of cost—will be removed.

Hospital Accommodation.—The building operations in connection with the extension of the Maternity Hospital mentioned in my last report are now nearing completion and it is hoped that the new portion will be ready for occupation some time during the current year. When completed the enlarged hospital will accommodate 100 cases, which should prove a very valuable addition to the existing lying-in accommodation in the City. The new wards have been designed on the most modern principles and will afford unrivalled facilities for the treatment of abnormal or difficult cases of childbirth as well as for the teaching of medical students and pupil midwives.

I regret to say that progress in connection with the proposed new hospital for orthopædics, surgical tuberculosis, and the diseases of infants on the Elmet Hall estate has been very slow, and at the time of writing the plans which have been in existence for some

Cremations in Leeds, 1905-1928.

Year.	No. of Leeds people cremated.	Nett total deaths in City.	Percentage of cremations on nett deaths (Leeds people cremated).
1905	7	7,047	0·10
1906	10	7,350	0·14
1907	12	7,167	0·17
1908	16	7,430	0·22
1909	9	6,806	0·13
1910	5	6,711	0·07
1911	7	7,331	0·10
1912	14	6,396	0·22
1913	7	7,237	0·10
1914	18	6,885	0·26
1915	13	7,609	0·17
1916	9	6,946	0·13
1917	10	7,052	0·14
1918	23	8,529	0·27
1919	18	6,992	0·26
1920	13	6,591	0·20
1921	9	6,285	0·14
1922	17	6,479	0·26
1923	11	5,985	0·18
1924	24	6,747	0·36
1925	26	6,037	0·43
1926	14	6,062	0·23
1927	32	6,198	0·52
1928	31	6,133	0·51
Total	355	164,006	0·22

months have not yet received the approval of the City Council. The cause of the delay is purely financial and is due to a desire to keep the cost within reasonable limits. Hospital construction, even for a small number of cases, is a costly business and necessarily involves an expenditure which relatively appears excessive. But, whatever the cost, there can be no question about the need which has been, and still is, very urgent. I hope the difficulties will soon be surmounted and that a start with the actual building will be made before the end of the current year.

The Local Government Act of 1929, transfers the functions of the Guardians of the Poor to County and County Borough Councils. This will mean in effect that the accommodation in the Poor Law Hospitals of this City will as from the appointed day April 1st, 1930, become available for the treatment of all classes of the community and not merely as in the past for those in receipt of poor law relief or in a position to pay for services rendered. Nothing has depressed me more than to read, year after year, of the very large list of cases awaiting treatment at the Leeds General Infirmary. Now it will be possible with a judicious re-distribution of the beds to wipe out that list or at least to reduce it to small dimensions ; at any rate the augmentation of the number of beds available for the treatment of urgent cases ought to make it possible to provide immediate accommodation for those in need of it.

Co-ordination of the Medical Services.—The transference of the Poor Law Hospitals in this City to the City Council affords a unique opportunity, which I trust will not be missed, of co-ordinating the health services of the City. The lack of this co-ordination has been a source of great weakness in the past and has undoubtedly led to overlapping, inefficiency, and waste of both money and effort. But any scheme of co-ordination to be complete should comprehend all the medical services (including the School Medical Service), except of course those which are purely voluntary.

As regards the voluntary hospitals the Act makes special provision for consultation with the Voluntary Hospitals before adopting any scheme for the re-distribution of hospital beds. This should have the effect of preventing waste of accommodation and duplication of services.

Comparative Statistics of the larger English Cities, 1928.

	Rate per 1,000 Population.					Death Rate per 1,000 Births.	
	Population.	Birth Rate.	Death Rate.	Phthisis. Death Rate.	Other Tuber-culosis. Rate.	Deaths under One Year.	Diarr-hœa and Enter-itis under 2.
London ..	4,458,200	16·2	12·1	0·89	0·14	67	10·3
Birmingham ..	976,500	17·6	10·9	0·86	0·13	65	9·35
Liverpool ..	866,000	22·1	13·2	1·18	0·20	94	18·1
Manchester ..	767,530	16·8	12·9	1·10	0·19	91	15·3
Sheffield ..	515,400	16·4	11·8	0·75	0·19	73	7·9
Leeds	**474,800 ***	**16·1**	**12·9**	**0·95**	**0·19**	**79**	**13·7**
Bristol	390,700 390,400	16·3	11·5	0·88	0·14	59	4·7
West Ham ..	306,900	19·2	10·8	0·94	0·17	64	7·6
Hull	297,600	20·5	12·8	1·0	0·2	79	11·8
Bradford ..	288,500	15·3	13·6	0·82	0·18	69	8·2
Newcastle ..	281,500	19·2	13·1	1·05	0·27	82	14·9
Stoke-on-Trent	279,700	19·6	11·7	0·93	0·22	87	14·0
Nottingham ..	266,600	17·7	12·8	0·95	0·15	85	16·6

*Population adjusted to allow for change in boundary during the year. The mid-year population after the change is 476,500.

Infectious and Other Diseases.

BY

ARTHUR MASSEY, M.D., Ch.B., D.P.H., *Chief Assistant Medical Officer of Health.*

A complete summary of all cases of notifiable infectious diseases notified to this department during the year under review will be found in the Appendix (Table II.).

During the last four months of the year, the city was involved in an epidemic of scarlet fever on a scale never before experienced in its history. Fortunately the type was mild and the mortality low. Full details are given on page 40.

There were 53 cases of smallpox notified during the year ; this incidence was made up of several sporadic outbreaks all of which were promptly quashed. It is satisfactory to report a marked drop in measles incidence and mortality during 1928. Although the mortality from whooping cough was low in 1927, yet a further decline can be recorded for the year under review. There was an increased incidence of diphtheria during the year but happily the mortality therefrom was lower than for some years past. Typhoid fever cases reported during the year constituted a record in paucity —a testimony to the improved sanitary circumstances. Cancer stands defiant with an increased mortality for the year. Such are the most arresting facts emerging from the detailed report hereunder.

Smallpox.—There were 53 cases of smallpox reported in Leeds during 1928 as compared with 59 in 1927. They occurred in sporadic fashion in various parts of the City, and showed a preference for the first half of the year. Clinically the cases were mild and conformed to the type known variously as modified smallpox, variola minor, and alastrim. There were no deaths. The various outbreaks were successfully circumscribed, and at no time during the year did the incidence assume epidemic proportions. Having regard to its size and natural communications and to the considerable prevalence of smallpox in nearby areas, Leeds escaped lightly.

The year's cases were distributed in respect of age, sex and vaccinal condition as in the accompanying table.

Under 5 years.				5–10 years.				11–15 years.				16–20 years.				21–30 years.				31–40 years.				41–50 years.				51–60 years.				Over 60 years.			
M.		F.		M.		F.		M.		F.		M.		F.		M.		F.		M.		F.		M.		F.		M.		F.		M.		F.	
Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.
–	–	–	–	–	4	–	1	–	4	2	5	2	3	–	2	–	4	1	6	–	2	–	–	1	2	2	–	7	–	2	–	1	–	1	1	

Distribution of Cases in Wards.

Central	1
North	11
North East	4
East	13
West Hunslet	4
Holbeck	2
Mill Hill	1
West	5
North West	5
Armley and Wortley	1
Bramley	5
Headingley	1
Total	53

Seasonal Incidence.

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
2	9	13	8	1	8	1	5	2	1	–	3

Vaccination.—Of the 53 cases under review, 34, or 64·2 per cent., were unvaccinated and 19, or 35·8 per cent., were vaccinated. In no case where re-vaccination had been performed prior to exposure

to infection did smallpox occur. Of the 19 vaccinated cases, 14 or 73·7 per cent. were over 40 years of age, whilst the remaining five were between 14 and 25. They had all been vaccinated in infancy but the original immunity had become impaired or lost by reason of the lapse of time. Successful vaccination in infancy is likely to protect during the first seven or perhaps even ten years of life, no matter what the number of vaccination marks. To obtain the maximum advantage from infantile vaccination it must have been not only successful but adequate, that is to say three or four good marks must remain as evidence. Lifelong protection is only possible when in addition to successful and adequate infant vaccination, re-vaccination is undergone at or about school-leaving age and again at twenty-one or thereabouts. A doubt has been expressed in some quarters as to whether modified smallpox is worth preventing by vaccination. Except in the degree of severity of the symptons, classical and modified smallpox are identical, respond to the same tests, and yield to the same treatment. They both seem to breed true to type, at least they have done so up to the present. But there is nothing to justify the assumption that they will continue to do so. In any case the benign type can be severe enough to cause great discomfort and even in some cases disfigurement, as has been observed in one or two of the cases mentioned in the above series. But whether the type be mild or severe, it is the duty of the Public Health Authority to keep it in check and, if possible, entirely eradicate it. That involves heavy expenditure in establishing and maintaining a defensive organization, including hospital isolation, disinfection, and the following up and vaccination of contacts. To adopt a *laissez faire* attitude, as some would have us do, would be suicidal and a negation of the best interests of preventive medicine.

In connection with the cases which occurred in Leeds during 1928, 837 contacts or possible contacts were vaccinated or re-vaccinated. This work was done by the Public Vaccinators of the various districts in which the cases occurred and the need did not arise for any primary vaccinations or re-vaccinations to be done by the staff of the Public Health Department under the Public Health (Smallpox Prevention) Regulations, 1917.

The number of routine primary vaccinations of infants by Public Vaccinators during the year was 2,970 or 38·7 per cent. of the nett births registered.

Isolation or Observation of Contacts.—The isolation cottages at Seacroft were utilized as circumstances demanded and during the year 110 contacts were sent into them for observation during the quarantine period; of these, three contracted the disease and had to be removed to the Smallpox Hospital. In addition to those sent to the quarantine cottages, 1,183 contacts were kept under observation in their own homes; these included 125 Leeds persons who had been in contact with smallpox in other towns.

The inspectors paid 5,716 visits to contacts, or suspected contacts, in the various wards of the City.

Epidemiological Trees.—The epidemiological trees on pages 38 and 39 are intended to show, as far as ascertained, the source and spread of the infection. The cases are divided into two groups, according to the origin of the infection.

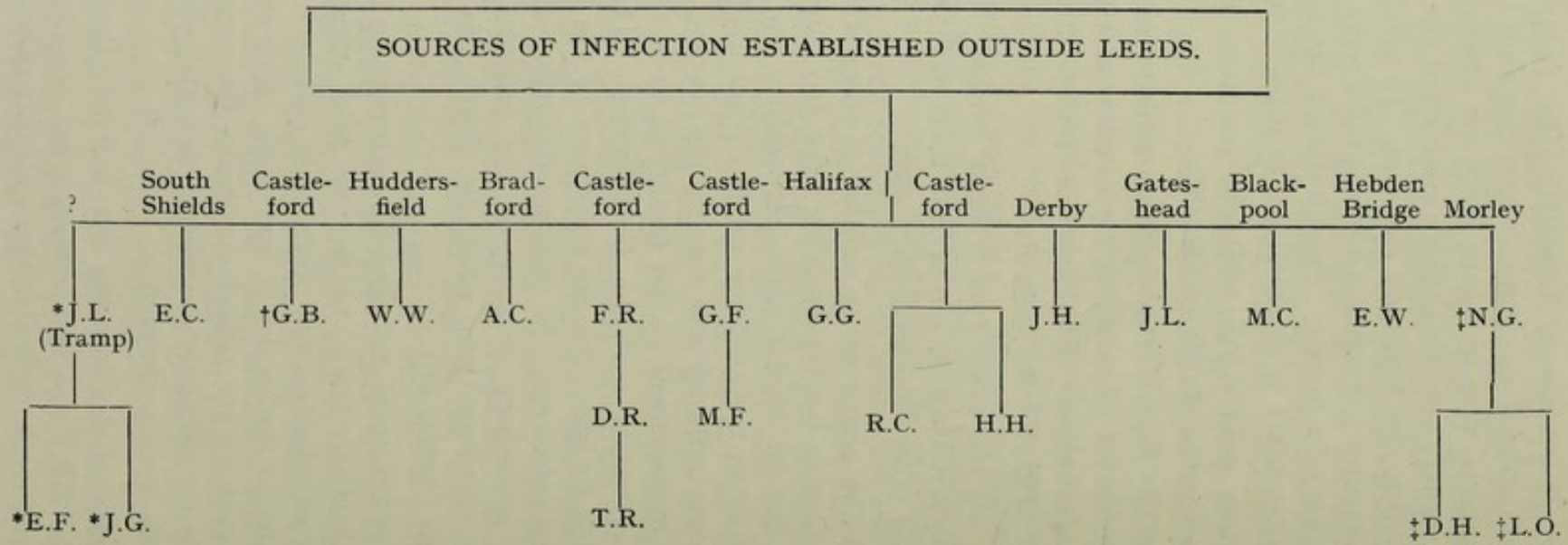
In tree A., all the cases sprang from outside the City. No secondary case occurred in nine, but in three there were two secondary cases, and in the other, one secondary case.

Included in the above are a number of cases which occurred in a clothing factory in Leeds employing some 500 hands. "N.G." contracted infection at Morley and subsequently worked for two days in the factory in the eruptive stage. What might well have been a troublesome outbreak was successfully checked, and in this connection the management of the factory is to be congratulated on its ready co-operation with the Department. The secondary cases were limited to two. All the employees of the factory were examined on two occasions; 80 of them (including all those who worked in the immediate vicinity of the primary case) were vaccinated or re-vaccinated and wholesale disinfection of premises and material was carried out.

Tree B. shows thirteen independent outbreaks, in five of which the origin was definitely traced to previous mild, unreported cases. A similar source of infection was probable in each of the remaining eight which included outbreaks in two large elementary schools. Fortunately in each of the school outbreaks the secondary cases were limited to two. In connection with these some 550 vaccinations or re-vaccinations were performed.

Two outbreaks of considerable size will be observed on tree B. In the first, "I.P." was the primary case; he had had smallpox but had failed to seek medical advice. He was a small shopkeeper

Epidemiological Tree A.

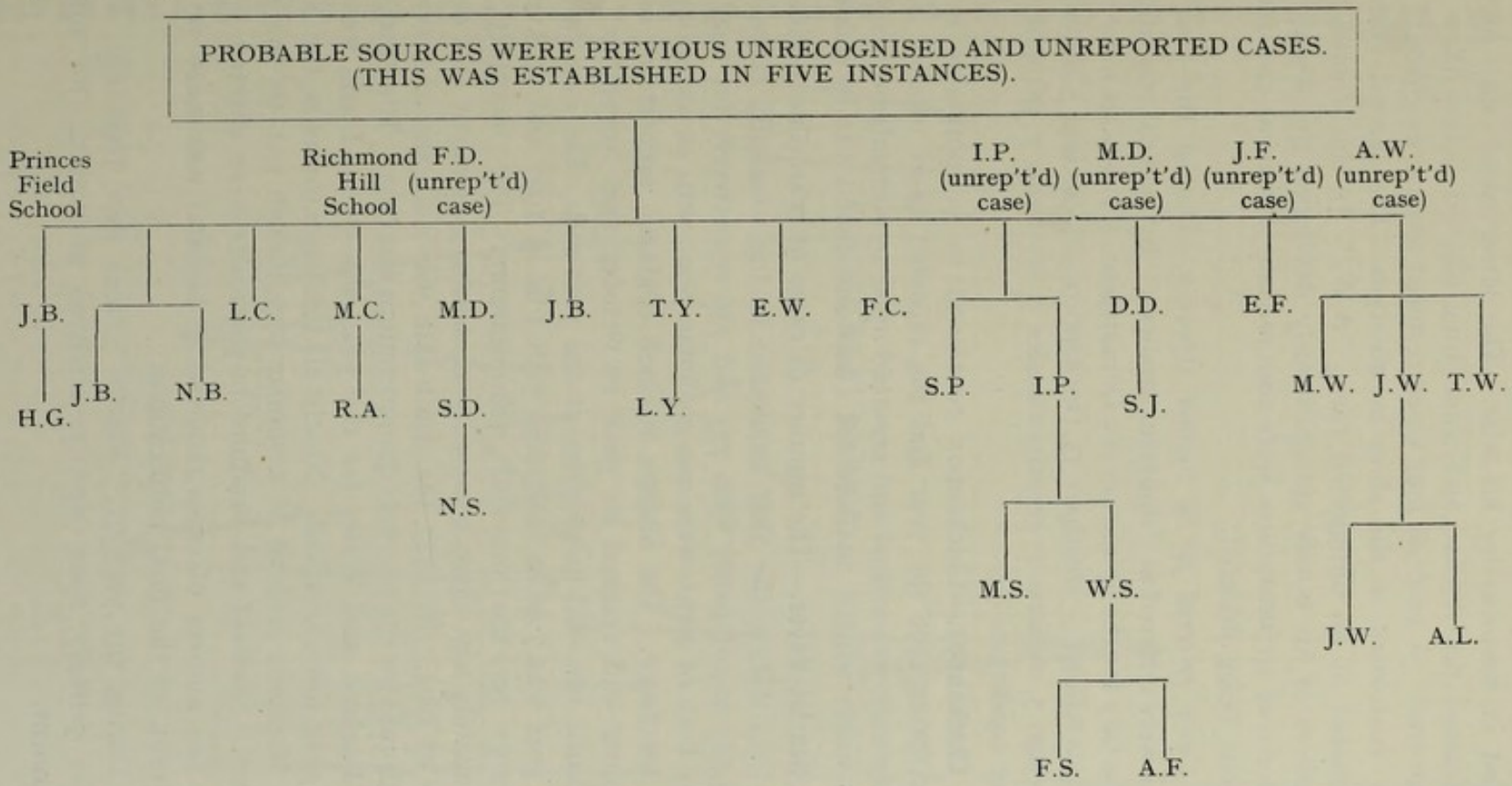


* From St. James' Hospital.

† Admitted from Castleford to Leeds General Infirmary during prodromal period as ? acute appendix.

‡ Employees of same clothing factory.

Epidemiological Tree B.



In addition case J.S., early in the year, was from E.B., a pupil of Brownhill School included in last year's (1927) series.

helped in business by his wife. The latter along with her son contracted the disease and some time elapsed before they were discovered. A crop of four cases resulted among neighbours who were customers at the shop in question. The second outbreak originated in an unreported case, " A.W." In due course three members of his family simultaneously developed the disease and by force of circumstances were seen too late to prevent two further persons being infected.

Cases referred for a Second Opinion.—During the year 121 cases were referred as " doubtful smallpox " by medical practitioners in the City for the opinion of the Department. The cases were found to be as follows :—smallpox 33, chickenpox 37, vaccinia 5, syphilis 3, impetigo 5, miliaria 2, german measles 1, erythema 2, pemphigus 1, other conditions 32.

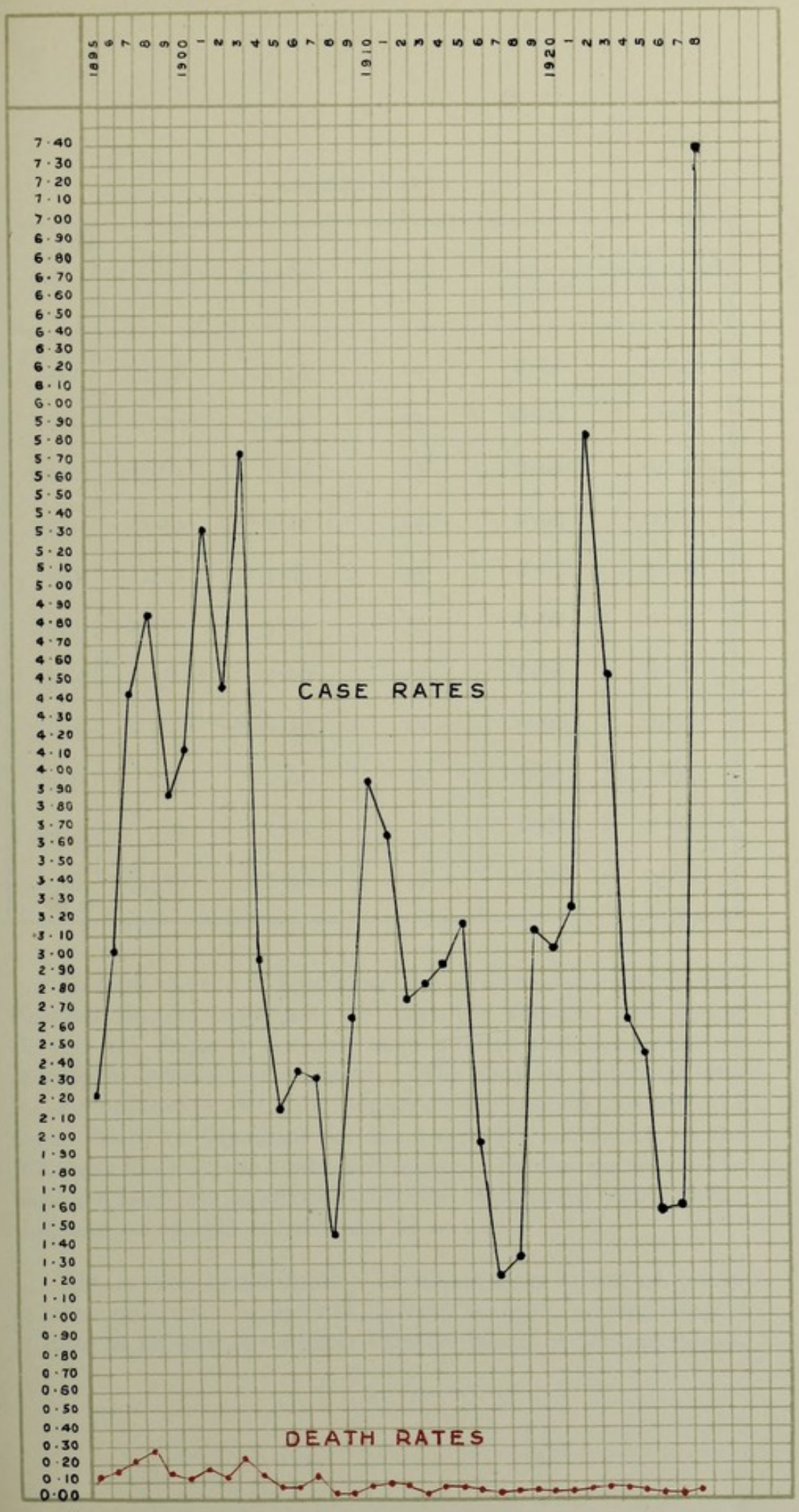
Chickenpox.—Chickenpox continued to be notifiable in the City throughout the year and the reported cases totalled 1,717. Every case was visited and reported upon by a member of the staff. The writer visited 104 selected cases and found 8 to be smallpox.

Scarlet Fever.—The number of cases of scarlatina notified in the City during the year amounted to the unusually large total of 3,515 as compared with 773 and 756 respectively for 1927 and 1926, both of which were non-epidemic years with an exceptionally low incidence. The disease attained epidemic proportions in the Autumn and reached its peak in October and November. The epidemic was still in progress at the year-end. The case rate for the year was 7·40 as compared with 1·62 in 1927 and an average of 2·57 for the previous quinquennium. The mortality was fortunately low, there being only 18 deaths, equivalent to a death-rate of 0·04. In 1927 the death-rate was 0·01 and the average death-rate for the previous quinquennium was 0·03. The death-rate for England and Wales for the year was 0·01. Leeds was not the only town attacked. Nearly all the large towns in the North and Midlands suffered in a similar way though not to the same extent. Sheffield and Bradford in particular were affected.

The number of cases removed to hospital was 2,226 or 63·3 per cent. of the total notifications.

During the year 61 " Return " cases were reported. Three of the primary cases were re-admitted to hospital for further treatment.

SCARLET FEVER CASE AND DEATH RATES 1895 - 1928.



Scarlet Fever.

Year.	Cases notified.	Case-rate.	Deaths.	Death-rate. LEEDS.	Death-rate England and Wales.
1918	570	1·33	19	**0·04**	0·03
1919	1,340	3·11	23	**0·05**	0·03
1920	1,363	3·04	17	**0·04**	0·04
1921	1,526	3·28	14	**0·03**	0·03
1922	2,722	5·83	33	**0·07**	0·04
1923	2,134	4·54	31	**0·07**	0·03
1924	1,256	2·66	20	**0·04**	0·02
1925	1,166	2·47	15	**0·03**	0·03
1926	756	1·60	5	**0·01**	0·02
1927	773	1·62	6	**0·01**	0·01
1928	3,515	7·40	18	**0·04**	0·01

Towards the end of September, the accommodation at Seacroft Hospital became inadequate to meet the demand, and during October the disparity between cases notified and cases removed to hospital increased progressively. The need for additional beds became imperative and an arrangement was entered into with the Leeds Board of Guardians for the temporary occupation of the Infirmary block at the Holbeck Workhouse for this purpose. The block (80 beds) was commissioned by the Department on November 2nd, and occupation entered into at once.

The routine hospitalization of scarlet fever is out of favour in many quarters. In times of epidemic however, prompt removal of cases to hospital is the most valuable means of limiting spread.

The extent of the Leeds epidemic was in some measure due to the unavoidable inadequacy of hospital accommodation—and this despite the prompt provision of the additional beds at Holbeck. A considerable proportion of cases had to be nursed at home—and home isolation too often means no isolation. The accommodation in working-class homes rarely permits of a separate room, or perhaps even a separate bed, for the patient, and moreover the difficulties of a mother who has all the house-work to perform in addition to nursing an infectious case, are insuperable. The economic factor too is important. The proper nursing of a patient with an acute infectious complaint not only disorganizes the household but it imposes a financial burden which its resources in very many cases cannot carry without interfering with the comfort and welfare of the other members of the family.

The distribution of the cases was general throughout the city, although a preponderance occurred in the congested areas south of the river. The table on page 43 shows how the various wards were affected.

The epidemic is probably explained by the fact that for years —the last epidemic of any size was in 1922–1923—the City has been relatively free from the disease. In the intervening period there has been a gradual accumulation of susceptible persons with a corresponding weakening of the defences of the population. The material was there and only required a spark to show how inflammable it was. The rapidity and extent of the spread were probably due to mild cases which escaped detection in the early part of the outbreak. This is acknowledged to be the root cause of most epidemics, not of scarlet fever only, but of many other diseases. It is a cause difficult to control because so many factors are involved. There is the parent on the one hand who fails to procure medical advice when the child first becomes ill, and on the other hand, there is the doctor who when he is called in fails to diagnose the complaint. Then outside and apart from both of these, there are the school, the playground, and the street where children associate intimately and interchange infections just as they do marbles. These unrecognised cases were doubtless responsible for the general dissemination of infection in the beginning which subsequently developed into a widespread epidemic.

Scarlet Fever Incidence in Wards. 1928.

Ward.	Population of Ward.	Population per acre.	Number of Scarlet Cases.	Cases per 1,000 of population.
Central ..	12,583	60·2	56	4·45
North* ..	43,839	7·1	218	4·97
North-East ..	36,514	28·8	151	4·14
New*	12,337	1·7	91	7·38
East	35,964	21·8	215	5·98
South	12,897	37·6	229	17·76
East Hunslet	37,798	12·5	432	11·43
West Hunslet	36,293	25·7	380	10·47
Holbeck ..	29,568	58·3	300	10·15
Mill Hill ..	5,252	22·5	62	11·81
West	21,987	75·6	123	5·59
North West ..	31,574	43·1	107	3·39
Brunswick ..	23,906	48·0	127	5·31
New Wortley..	17,934	43·5	247	13·77
Armley & Wortley	37,351	23·3	303	8·11
Bramley ..	24,582	5·3	121	4·92
Headingley* ..	54,421	7·9	353	6·49
CITY* ..	474,800	12·5	3,515	7·40

*Population adjusted to allow for change in boundary during the year. The mid-year populations after the change are North, 44,089; New, 13,754; Headingley, 54,454; and City, 476,500.

As already stated the type was mild as is demonstrated by the fact that of the 3,515 cases which occurred up to December 31st, only 18 died.

INCIDENCE AND DEATHS IN AGE GROUPS.

1928.	Under 1	1–5	5–15	15–25	25–45	45+	Total.
Cases	22	660	2,202	451	170	10	3,515
Deaths	2	6	8	2	—	—	18

But death is not the only outcome of the disease; many who escape death suffer damage to health which may or may not be permanent. Deafness, blindness, kidney disease, and heart disease are amongst the possible sequels. Treatment in hospital may, probably does, reduce the risks of such occurrences, but there is always a residue of cases where they are inevitable. Unfortunately the information necessary to enable me to form an estimate of the number of such cases is wanting.

Those attacked were chiefly children of school age and practically every school at some time or other during the year shared in the outbreak. It is not surprising that during the period when the shortage of beds was most acute and the number of home-nursed cases was at its maximum the proportion of adults contracting the disease increased.

Despite the large number of infected households, timely disinfection was performed in all cases. A system was put into operation whereby terminal disinfection was performed after the expiry of six weeks from the notification of the case, in each home wherein a case had been nursed. In the case of those removed to hospital, terminal disinfection was of course performed as usual immediately on removal.

On December 31st, there were 432 cases under treatment at Seacroft and the Holbeck Infirmary. The highest number under treatment at any one time up to the end of the year was 483, a number never before exceeded in the history of the Department. The table on page 41 shows a comparison of the 1928 incidence with that of previous years.

SCARLET FEVER NOTIFIED MONTH BY MONTH. 1928.

	Cases Notified.	Removed to Hospital.	Percentage removed to Hospital.	Deaths.
January ..	84	78	92·9	—
February ..	109	99	90·8	—
March	107	102	95·3	2
April	59	53	89·8	1
May	87	84	96·6	—
June	128	120	93·8	—
July	184	177	96·2	1
August	170	166	97·6	1
September ..	434	326	75·1	1
October ..	669	268	40·1	5
November ..	747	360	48·2	2
December ..	737	393	53·3	5
YEAR.. ..	3,515	2,226	63·3	18

December saw the commencement of a decline in the epidemic which terminated in March of the current year. The Holbeck Infirmary block was vacated and handed back to the Board of Guardians on March 4th, 1929 there being then no further need for it.

Measles.—Measles is a disease which always justifies concern for it can initiate serious respiratory complications such as pneumonia and may be an antecedent of tuberculosis. It is a matter for congratulation that the record of the disease for 1928 was the lowest

MEASLES.

Year.	Cases notified.	Case-rate.	Deaths.	Death-rate. LEEDS.	Death-rate England and Wales.
1918	6,719	15·71	417	**0·98**	0·29
1919	2,605	6·05	48	**0·11**	0·10
1920	5,523	12·30	148	**0·33**	0·19
1921	240	0·52	5	**0·01**	0·06
1922	10,078	21·59	152	**0·33**	0·15
1923	5,224	11·12	50	**0·11**	0·14
1924	7,037	14·92	46	**0·10**	0·12
1925	5,301	11·21	39	**0·08**	0·14
1926	7,702	16·27	20	**0·04**	0·09
1927	8,664	18·14	117	**0·24**	0·09
1928	3,679	7·75	21	**0·04**	0·11

AGES AT DEATH FROM MEASLES.

1928	*0–1*	*1–2*	*2–3*	*3–4*	*4–5*	*5–10*	*10–15*	Total.
No. of Deaths	3	6	5	4	1	1	1	21

for some years as regards both incidence and mortality. The total number of cases notified was 3,679 and the deaths registered 21, as compared with 8,664 cases and 117 deaths in 1927. From the table above it will be seen that the disease tends to wax and wane in alternate years, but the year 1927 broke the usual sequence, it being a high instead of a low year.

Whooping Cough.—The mortality from whooping cough during 1928 was low ; there being 36 deaths, 34 of which occurred in children under two years of age. Whooping cough like measles shows a

WHOOPING COUGH.

Year.	Deaths.	Death-rate. LEEDS.	Death-rate England and Wales.
1918	130	**0·30**	0·30
1919	66	**0·15**	0·07
1920	100	**0·22**	0·12
1921	72	**0·15**	0·12
1922	115	**0·25**	0·17
1923	32	**0·07**	0·11
1924	87	**0·18**	0·10
1925	47	**0·10**	0·16
1926	119	**0·25**	0·11
927	44	**0·09**	0·09
1928	36	**0·08**	0·07

AGES AT DEATH FROM WHOOPING COUGH.

1928	*0–1*	*1–2*	*2–3*	*3–4*	*4–5*	*5–10*	*10–15*	Total.
No. of deaths	19	15	2	..	..	..	..	36

tendency to rise and fall in alternate years ; 1927 was a year of low mortality and it is therefore especially satisfactory that 1928 showed a further fall.

Diphtheria.—The number of cases notified during 1928 was 634 with a case rate of 1·34. There were 21 deaths equivalent to a death-rate of 0·04. Thus although the incidence showed an increase on recent years, the mortality remained low. Of the total cases notified 94·8 per cent. were treated in hospital.

DIPHTHERIA AND MEMBRANOUS CROUP.

Year.	Cases notified.	Case-rate.	Deaths.	Death-rate. LEEDS.	Death-rate England and Wales.
1918	542	1·27	47	**0·11**	0·14
1919	811	1·88	43	**0·10**	0·13
1920	885	1·97	64	**0·14**	0·15
1921	665	1·43	38	**0·08**	0·13
1922	470	1·01	28	**0·06**	0·11
1923	368	0·78	20	**0·04**	0·07
1924	289	0·61	27	**0·06**	0·06
1925	422	0·89	39	**0·08**	0·07
1926	374	0·79	26	**0·05**	0·08
1927	439	0·92	28	**0·06**	0·07
1928	634	1·34	21	**0·04**	0·06

Immunization against Diphtheria.—Since July 1st, 1928, facilities for the immunization of young children against diphtheria by the Schick method have been available at the Central Welfare Clinic in Calverley Street. Parents have, however, been very slow to recognise the advantages of immunization for their children, only 65 children having been immunized during the year. Still it is a beginning, and, doubtless, as the benefits of the scheme become more widely known an increasing number of requests for immunization will result.

Erysipelas.—During 1928, 361 cases were notified as compared with 320 in 1927 and there were 19 deaths as against 18 in 1927. Of the 361 cases, 158 were treated in hospital.

INCIDENCE OF ERYSIPELAS MONTH BY MONTH.

Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
35	33	31	24	23	27	18	22	33	35	36	44	361

The incidence was greatest during the latter part of the year, that is during the period when scarlet fever was abnormally prevalent. The concurrent prevalence of the two diseases is not unnatural seeing that the agent in both cases belongs to the same group of micro-organisms.

Puerperal Fever and Puerperal Pyrexia.—The figures for the year are as follows :—

Disease.	Cases notified.	Case-rate per 1,000 pop.	Deaths.	Death-rate per 1,000 pop.
Puerperal Fever..	47	0·10	14	0·03
Puerperal Pyrexia	119	0·25	..	..

Of the 47 cases of puerperal fever 13 (or 27·7 per cent.) occurred in institutions, 18 (or 38·3 per cent.) in the practices of doctors, and 16 (or 34·0 per cent.) in the practices of midwives. Twenty-six cases (55·3 per cent. of the total) were removed to the City Hospital for treatment.

The cases of puerperal pyrexia were distributed thus :— 77 (or 64·7 per cent.) in institutions, 25 (or 21·0 per cent.) in doctors' practices and 17 (or 14·3 per cent.) in midwives' practices. (This subject is further referred to on page 130).

Encephalitis Lethargica.—There were 10 cases notified during the year, equivalent to a case-rate of 0·02. The number of deaths certified as due to the disease was 15 giving a death-rate of 0·03. During 1927 there were eight cases notified and six deaths certified.

From 1920 to 1928 (inclusive) 123 cases of encephalitis were notified in the city, distributed as follows :—

1920	1921	1922	1923	1924	1925	1926	1927	1928
8	13	3	10	41	20	10	8	10

Difficulties arise from time to time in regard to the after-care of cases of encephalitis lethargica. Hospital treatment can be provided for a limited period only, subsequent to which the parents or relatives concerned not infrequently find themselves saddled with the home-care of patients whose mental and physical condition occasions much anxiety and distress. Such cases are rarely suitable for the mental hospital but there is no special institution available for them in Yorkshire apart from these hospitals or the colonies for mental defectives.

Acute Anterior Poliomyelitis.—During the year three cases were notified (case-rate 0·01) and four deaths (death-rate 0·01) were certified as due to this disease. In 1927 there were 17 notifications and three deaths. There was no evidence in any of the cases to indicate the source of infection.

Typhoid or Enteric Fever.—During the year under review six cases of this disease were reported (case-rate 0·01) and one death occurred. This is the lowest incidence ever recorded in the city. Each case was of a sporadic nature. The incidence of typhoid fever is an important consideration in assessing the standard of general sanitation in a community, and it may well be that, among other sanitary improvements, the abolition during 1928 of over 2,000 trough-closets in Leeds is not unconnected with the very small number of typhoid cases.

Cerebro-Spinal Meningitis.—There were three cases of this disease notified during the year and eight deaths were registered as being due to it. The death-rate was 0·02.

Malaria, Dysentery and Trench Fever.—Six cases of malaria were notified during 1928 and there was one death. There were three notifications of dysentery and one death. Trench fever ceased to be notifiable on January 1st, 1928, in pursuance of the Public Health (Infectious Diseases) Regulations, 1927.

Ophthalmia Neonatorum.—During the year under review 66 cases of ophthalmia neonatorum were notified as compared with 86 in 1927. The notifications of 1928 are strictly comparable with those of 1927 but not with those of previous years, for it was only on October 1st, 1926, that the responsibility for notification of this disease was removed from midwife to doctor (Public Health Ophthalmia Neonatorum Regulations, 1926)—an arrangement which doubtless

ENTERIC FEVER.

Year.	Cases notified.	Case-rate.	Deaths.	Death-rate. LEEDS.	Death-rate England and Wales.
1918	42	0·10	5	**0·01**	0·03
1919	33	0·08	8	**0·02**	0·02
1920	29	0·06	4	**0·01**	0·01
1921	24	0·05	2	**0·00**	0·02
1922	14	0·03	7	**0·01**	0·01
1923	9	0·02	1	**0·00**	0·01
1924	25	0·05	6	**0·01**	0·01
1925	9	0·02	3	**0·01**	0·01
1926	9	0·02	1	**0·00**	0·01
1927	14	0·03	2	**0·00**	0·01
1928	6	0·01	1	**0·00**	0·01

CASES OF ENTERIC FEVER MONTH BY MONTH.

Jan.	Feb.	March	April	May.	June.	July.	Aug.	Sept.	Oct	Nov.	Dec.
–	–	1	2	–	1	–	–	–	–	1	1

makes for greater accuracy of notification. It is satisfactory to note the lower incidence during 1928 due largely to the instruction and treatment given at the special clinics in connection with the Infant Welfare Centres to mothers and expectant women suffering from venereal disease. These special clinics are of great value as they remove the reluctance which many pregnant women have of attending the Venereal Diseases Centre at the Leeds General Infirmary.

It is interesting to note that whilst the number of cases of ophthalmia neonatorum has diminished, there was an actual increase in the incidence of gonorrhoea amongst females (*vide* Venereal Diseases Report on page 81).

Of the 66 cases notified during 1928, 36 cases were treated at home, and 30 in hospital, viz. :—17 in the Maternity Hospital, seven in the Leeds General Infirmary, five in the St. Faith's Home, and one in a Maternity Home. Twenty-one cases, or 31·8 per cent., occurred in institutions, 24 cases, or 36·4 per cent., in the practices of doctors, and 21 cases, or 31·8 per cent., in midwives' practices.

DAY OF ONSET FROM BIRTH.

1928.	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	10th-15th	15th-20th	20th-25th
No. of Cases	1	2	2	2	3	4	4	5	10	7	18	6	2

The results of treatment were as follows :—

Recovery apparently perfect	64
Recovery not perfect	1
Sight of both eyes affected	—
Still under treatment	—
Result not known (out of Leeds)	1

Diarrhoea and Enteritis (Summer Diarrhoea).—The summer and autumn of 1928 were warm and dry, seasonal influences favourable to epidemic or summer diarrhœa. In view of this, the 105 deaths from this disease which occurred during the year compare not unfavourably with the record (88 deaths) of 1927 when the season was the reverse of warm and dry. The summer and autumn of 1928 more closely resembled those of 1926 when the deaths from summer diarrhœa numbered 147. The death-rates from the disease in respect of children under two years of age per thousand births in 1928, 1927 and 1926 were 13·7, 11·3 and 18·2 respectively.

The mortality in Leeds from infantile diarrhœa and enteritis has always been well in excess of the corresponding figure for England and Wales. The only way to reduce this discrepancy is by greater attention to personal and domestic cleanliness, to the milk supply, to the breast feeding of infants, and to more enlightened mothercraft. The remedy is largely in the hands of parents themselves. Clean milk they can have if they care to buy it, and the Infant Welfare Centres are open to all mothers who desire advice or help in the rearing of their children.

Diarrhœa and Enteritis Deaths under Two Years with Rates per 1,000 Births.

Year.	Deaths.	Rate per 1,000 Births.	
		Leeds.	England and Wales.
1918	146	**19·8**	11·7
1919	140	**18·5**	10·2
1920	140	**12·5**	8·9
1921	184	**18·1**	16·1
1922	92	9·9	6·6
1923	118	**13·6**	8·1
1924	103	**12·0**	7·6
1925	149	**18·2**	8·8
1926	147	**18·2**	9·2
1927	88	**11·3**	6·7
1928	105	**13·7**	7·0

Deaths and Meteorological Conditions in each Month of the Year.

1928.	Jan.	Feb.	Mar.	April	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Deaths	4	4	9	3	7	9	6	7	24	13	7	12	105
Barom. (inches) ..	29.65	29.84	29.63	29.67	29.85	29.73	29.95	29.79	30.00	29.68	29.56	29.87	29.77
Attached Ther.°F. ..	56.17	56.54	58.56	59.35	61.63	62.44	67.40	66.40	63.81	61.71	59.29	53.33	60.64
Dry Bulb	44.27	44.51	45.08	50.82	54.25	57.35	65.65	62.40	58.48	51.91	48.73	40.94	52.15
Wet Bulb	42.85	43.08	42.65	46.14	49.48	52.56	59.37	57.68	53.88	49.08	46.48	39.25	48.66
Humidity	89.33	89.15	82.17	71.37	72.40	70.00	68.44	73.97	74.40	81.82	84.44	86.49	78.72
Mn. of highest reading	48.11	49.51	50.43	56.93	60.83	63.50	71.50	69.40	64.75	56.57	52.32	45.18	57.55
„ lowest „	37.93	38.71	38.47	40.72	44.77	47.82	55.04	53.37	49.46	45.60	41.96	35.07	44.20
„ daily range ..	10.18	10.80	11.96	16.21	16.06	15.68	16.46	16.03	15.29	10.97	10.36	10.11	13.35
Total rainfall (inches)..	5.23	2.93	1.88	0.40	2.11	4.11	0.15	4.06	0.10	4.39	3.91	1.24	30.51
Sunshine (hours) ..	42.42	71.00	74.92	153.42	122.08	166.75	211.25	179.92	148.42	94.17	44.17	12.00	1320.50

The meteorological data are compiled from returns sent us by the Curator of the Museum. They are uncorrected readings, made at 10 a.m. and 4 p.m.

Influenza.—The number of deaths during 1928 from influenza was 100 or 73 less than for the previous year, and 92 less than the average for the previous five years. The death-rate was 0·21, as compared with 0·36 for the previous year and 0·41 the average for the previous quinquennium. Of the deaths, 83 per cent. occurred in persons over 25 years, 64 per cent. in those over 45, and 33 per cent. in those over 65.

INFLUENZA.

Year.	Deaths.	Death-Rate. LEEDS.	Death-Rate England and Wales.
1918	1,401	3·28	3·13
1919	623	1·45	1·22
1920	170	0·38	0·28
1921	164	0·35	0·24
1922	169	0·36	0·56
1923	122	0·26	0·22
1924	404	0·86	0·49
1925	159	0·34	0·33
1926	100	0·21	0·23
1927	173	0·36	0·57
1928	100	0·21	0·19

AGES AT DEATH FROM INFLUENZA.

1928	*0–1*	*1–2*	*2–5*	*5–15*	*15–25*	*25–45*	*45–65*	*65+*	Total.
No. of Deaths	5	1	2	..	9	19	31	33	100

Bronchitis.—The year 1928 saw another fall in the number of deaths from bronchitis. The figure has declined progressively during the last quinquennium. There were 343 deaths equivalent to a rate of 0·72, as compared with 351 deaths and a rate of 0·73 for the previous year and an average of 493 deaths with a rate of 1·04 for the previous five years.

BRONCHITIS.

Year.	Deaths.	Death-Rate. LEEDS.	Death-Rate England and Wales.
1918	653	**1·53**	1·23
1919	741	**1·72**	1·24
1920	625	**1·39**	1·01
1921	556	**1·19**	0·89
1922	596	**1·28**	1·07
1923	518	**1·10**	0·85
1924	643	**1·36**	0·97
1925	513	**1·08**	0·91
1926	439	**0·93**	0·77
1927	351	**0·73**	0·84
1928	343	**0·72**	

AGES AT DEATH FROM BRONCHITIS.

1928	*0–1*	*1–2*	*2–5*	*5–15*	*15–25*	*25–45*	*45–65*	*65+*	Total.
No. of Deaths	14	2	2	2	2	23	82	216	343

Pneumonia.—During the year under review there were 485 deaths (death-rate 1·02) as compared with 477 (death-rate 1·00) for 1927. The death-rate from pneumonia in Leeds still remains somewhat in excess of that for the country as a whole, although the difference of late years has been less marked. The record for 1928 shows a decrease in the mortality from this cause of persons below 25 years of age and an increase in those over that age.

PNEUMONIA (ALL FORMS).

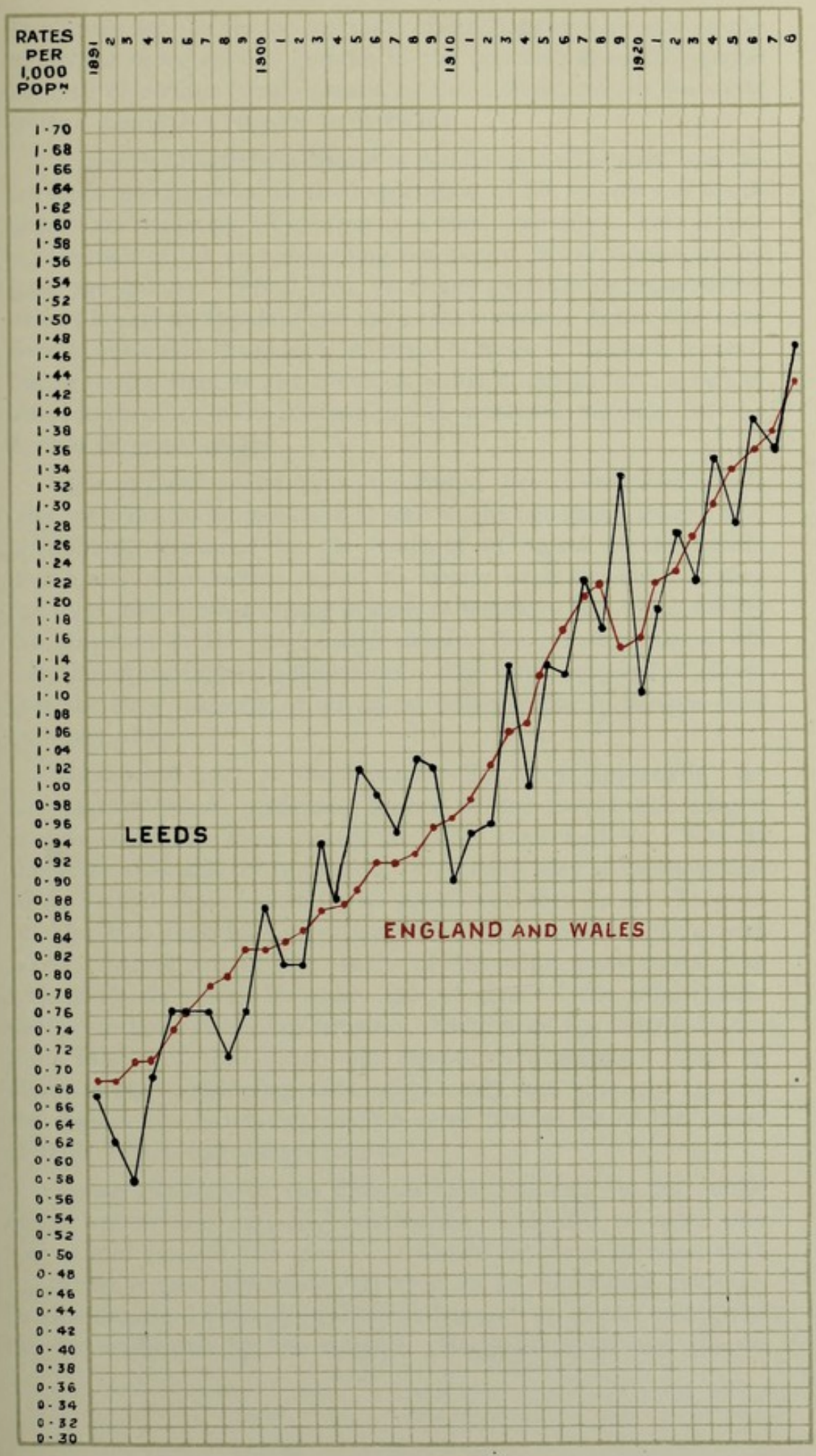
Year.	Deaths.	Death-Rate. LEEDS.	Death-Rate England and Wales.
1918	768	**1·80**	1·65
1919	560	**1·30**	1·06
1920	622	**1·39**	0·99
1921	562	**1·21**	0·92
1922	502	**1·08**	1·07
1923	440	**0·94**	0·87
1924	619	**1·31**	1·00
1925	503	**1·06**	0·95
1926	484	**1·02**	0·83
1927	477	**1·00**	0·95
1928	485	**1·02**	

AGES AT DEATH FROM PNEUMONIA.

1928	*0–1*	*1–2*	*2–5*	*5–15*	*15–25*	*25–45*	*45–65*	*65+*	Total
No. of Deaths	80	49	36	16	14	72	142	76	485

Cancer.—There were 698 deaths from cancer in the city during the year, equivalent to a death-rate of 1·47, as compared with 649 deaths in 1927 and a death-rate of 1·36. Of the total deaths, 330 or 47·3 per cent. were males and 368 or 52·7 per cent. females.

CANCER DEATH RATE.— 1891 - 1928.



It is usual for the female mortality to exceed the male due to the numerical superiority of females in the population, to the special liability of certain female organs to the disease, and to the more general survival of women to later life.

Cancer is essentially a disease of middle age and beyond, and the tendency nowadays is for the expectation of life to rise and hence people are attaining to greater ages than formerly. This is one explanation of the ever increasing number of cancer victims in the later age groups. But if it is, it means that the increase of the disease is only an apparent and not a real increase. Again, one must bear in mind that the general standard of medical diagnosis is much higher to-day than at any previous period in our history, a fact of some importance when discussing the increased incidence of the disease in recent years.

Ages at Death.—The most pronounced preponderence of female over male deaths from cancer is seen in the age-group 25-45 ; this is probably explained by the tendency of cancer of the female breast and reproductive organs to appear at a somewhat earlier age than that of other organs in male or female, a fact which affects the statistics in the way stated despite the prolongation of life resulting from surgical interference. The table on page 58 shows how the large majority of all cancer deaths occur in persons over 45 years of age.

Anatomical sites of the Disease.—(See Chart appended). As is generally found, malignant disease of the mouth and tongue accounted for far more deaths in males than females. Why it should be so is difficult to explain. Bad teeth may have something to do with it though there is no proof that they have. Tobacco smoking is a doubtful cause though one still mentioned in the text books. Cancer of various parts of the alimentary tract was responsible for a high mortality (50 per cent. of the total cancer deaths) in both males and females. There were 154 female deaths from cancer of the breast and reproductive organs. That is disappointing considering that taken early and properly treated the disease can be eradicated in a large percentage of the cases of both breast and uterine cancer.

Cancer-Phobia.—Of the diseases most dreaded by the public cancer comes first and any information calculated to allay this fear should certainly be given. It should be borne in mind that (1) cancer is not hereditary, (2) there is no convincing evidence to substantiate the theory of " cancer houses," (3) cancer seen early can be eradicated by the surgeon. Early diagnosis and proper

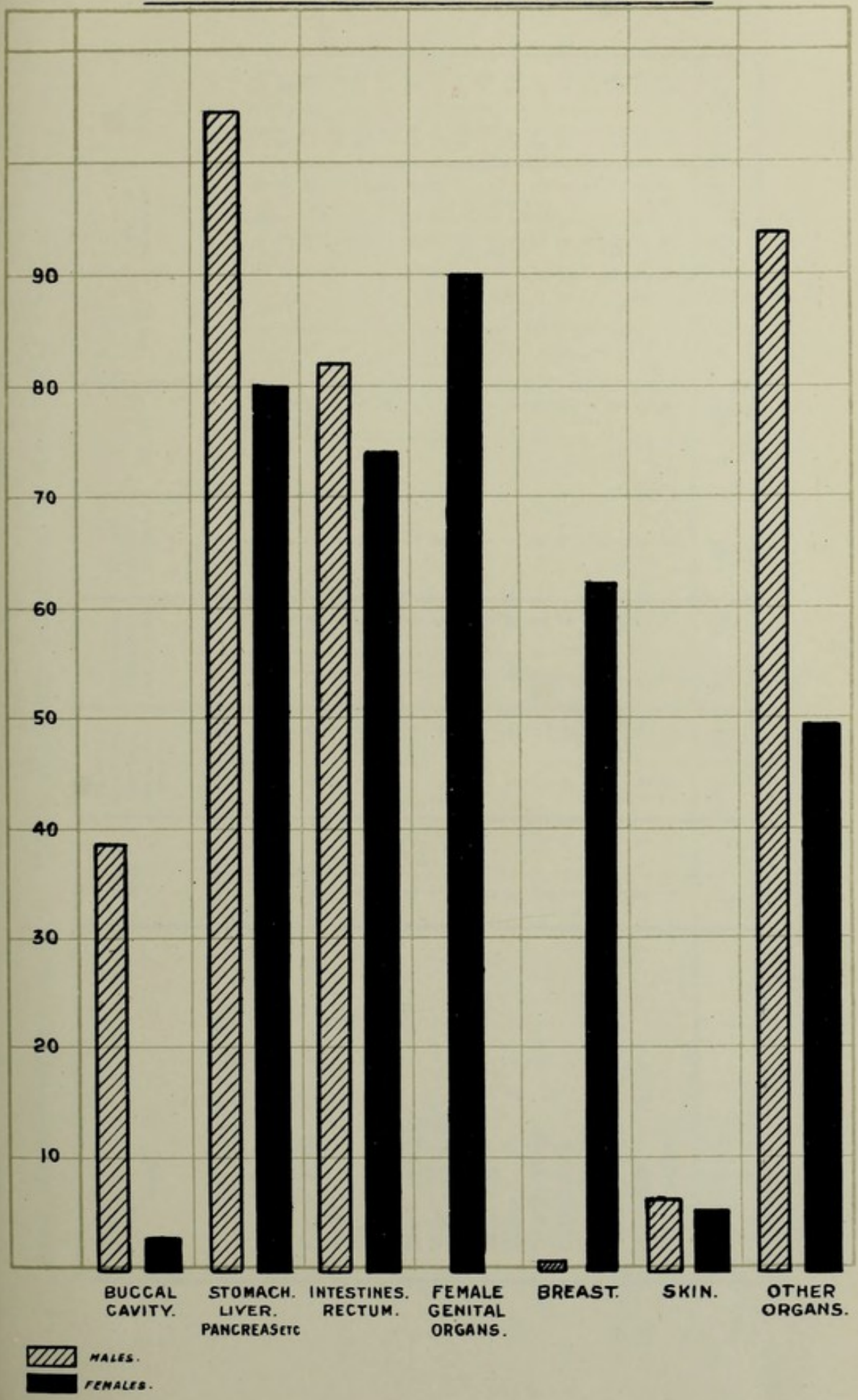
Cancer.

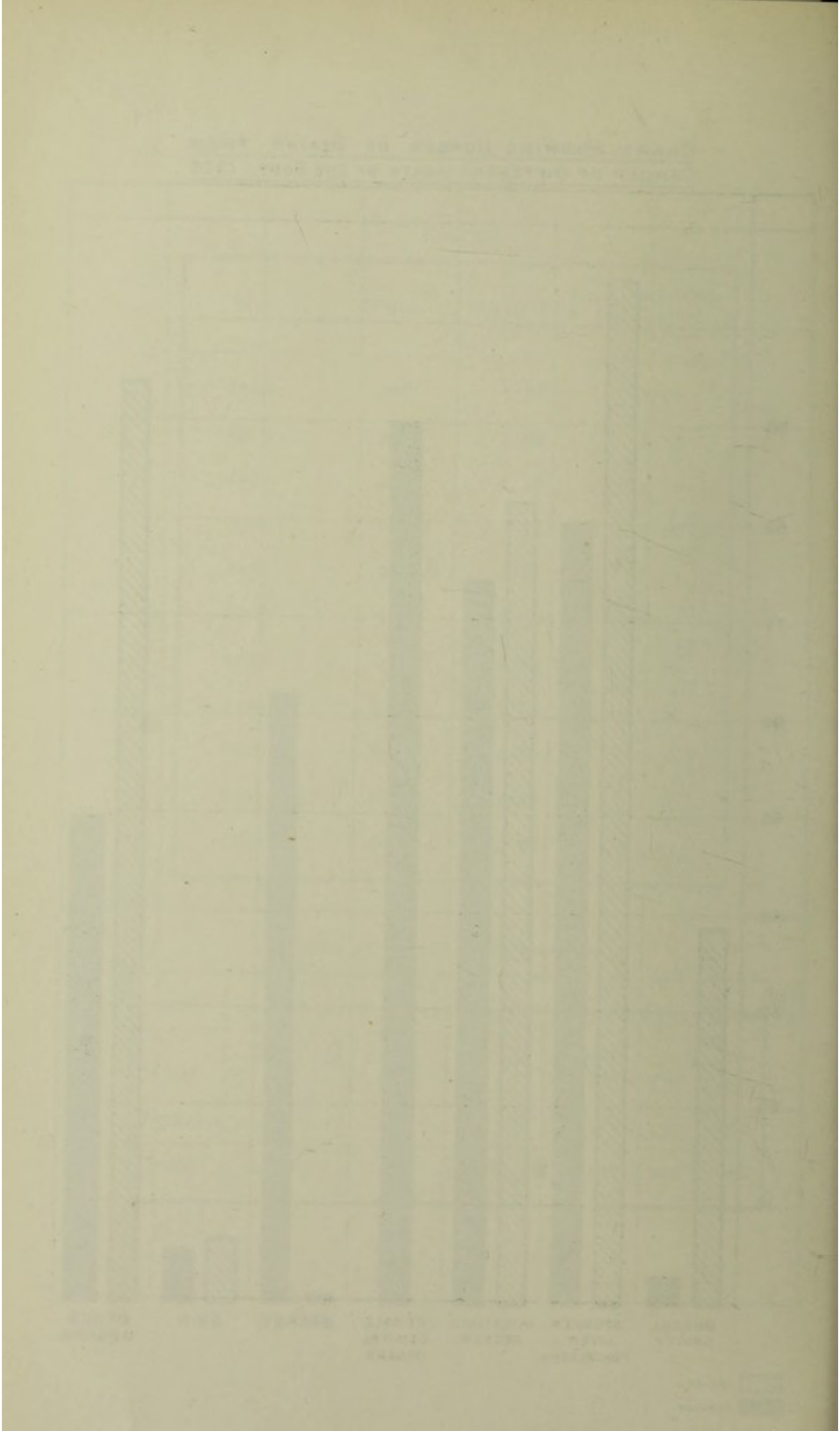
Year.	Deaths.	Death-Rate. LEEDS.	Death-Rate England and Wales.
1918	500	**1·17**	1·22
1919	575	**1·33**	1·15
1920	492	**1·10**	1·16
1921	554	**1·19**	1·22
1922	595	**1·27**	1·23
1923	574	**1·22**	1·27
1924	639	**1·35**	1·30
1925	606	**1·28**	1·34
1926	657	**1·39**	1·36
1927	649	**1·36**	1·38
1928	698	**1·47**	1·43

Ages at Death from Cancer.

1928.	*0–1*	*1–2*	*2–5*	*5–15*	*15–25*	*25–45*	*45–65*	*65+*	Total.
Males	..	..	..	..	3	24	164	139	330
Females	..	..	..	..	3	39	174	152	368
Total	..	..	..	..	6	63	338	291	698

CHART SHOWING NUMBER OF DEATHS FROM CANCER OF DIFFERENT PARTS OF THE BODY. 1928





1928.—Deaths from Cancer in Wards classified according to Anatomical Site of the Disease.

Ward.	Buccal cavity.		Pharynx, œsophagus, stomach, liver and annexa.		Peritoneum, intestines and rectum.		Female genital organs.	Breast.		Skin.		Other or unspecified organs.		Totals.	
	M.	F.	M.	F.	M.	F.	F.	M.	F	M.	F.	M.	F	M.	F.
Central	1	..	3	1	3	1	1	1	2	..	..	1	1	9	6
North	5	..	8	10	8	9	10	..	4	1	..	9	8	31	41
North-East	4	..	4	8	4	12	7	..	6	..	..	9	2	21	35
New	..	..	2	3	5	3	2	..	..	..	..	..	1	7	9
East	2	..	9	4	7	3	6	..	5	..	1	7	7	25	26
South	..	..	2	2	1	7	4	..	2	1	..	..	1	4	16
East Hunslet	2	..	8	2	5	4	9	..	4	..	..	9	4	24	23
West Hunslet	3	..	14	4	5	4	7	..	3	..	1	8	2	30	21
Holbeck	1	..	3	10	3	..	4	..	6	..	..	10	2	17	22
Mill Hill	1	..	1	1	1	..	1	..	..	..	..	..	..	3	2
West	2	..	7	4	7	5	2	..	2	..	1	5	..	21	14
North-West	3	..	3	5	8	2	4	..	5	..	..	7	3	21	19
Brunswick	3	2	9	3	3	2	3	..	7	2	1	2	1	19	19
New Wortley	3	..	3	3	2	4	5	..	..	..	..	4	1	12	13
Armley and Wortley ..	3	..	15	4	7	5	11	..	5	..	..	10	3	35	28
Bramley	2	1	3	5	7	6	8	..	4	..	1	7	3	19	28
Headingley	4	..	12	12	7	8	7	..	8	2	..	7	11	32	46
City	39	3	106	81	83	75	91	1	63	6	5	95	50	330	368

treatment are the secret of success. To those afflicted with cancer-fear one would commend the slogan " don't imagine things, consult your doctor."

The Yorkshire Council of the British Empire Cancer Campaign :— Throughout the year the Council has pursued its investigations and continued its efforts to enlighten the public on the main facts concerning the detection and treatment of the disease. Under its auspices, there has been a considerable output of effective propaganda. A particularly useful measure was the inauguration during the year of a series of post-graduate lectures to the local medical profession by recognised authorities on cancer. It is clear that if early diagnosis is to be more generally attained, the medical practitioner must be equipped with the latest information.

Public Health Act, 1925, Section 62.—No action was taken under this section during the year.

CANCER DEATH-RATES, ELEVEN LARGE TOWNS, ALSO ENGLAND AND WALES.

	Year 1917.	Year 1918.	Year 1919.	Year 1920.	Year 1921.	Year 1922.	Year 1923.	Year 1924.	Year 1925.	Year 1926.	Year 1927.
London ..	1·35	1·33	1·25	1·25	1·33	1·33	1·39	1·42	1·44	1·46	1·49
Birmingham ..	1·06	1·03	1·09	1·11	1·10	1·16	1·18	1·31	1·29	1·31	1·39
Liverpool ..	1·08	1·10	1·03	1·07	1·10	1·06	1·13	1·13	1·21	1·18	1·16
Manchester ..	1·19	1·24	1·17	1·28	1·28	1·29	1·41	1·40	1·40	1·49	1·45
Sheffield ..	1·03	1·06	0·97	1·08	1·17	1·18	1·19	1·26	1·33	1·19	1·39
Leeds ..	**1·29**	**1·19**	**1·35**	**1·09**	**1·19**	**1·29**	**1·24**	**1·37**	**1·28**	**1·41**	**1·37**
Bristol ..	1·24	1·30	1·18	1·15	1·26	1·21	1·32	1·28	1·32	1·26	1·43
Hull	1·26	1·17	1·15	0·97	1·21	1·21	1·04	1·29	1·20	1·46	1·45
Bradford ..	1·46	1·45	1·38	1·28	1·39	1·49	1·33	1·56	1·42	1·63	1·59
Newcastle ..	0·97	0·87	1·13	0·94	1·10	1·08	1·16	1·24	1·32	1·19	1·20
Nottingham ..	1·27	1·52	1·23	1·36	1·43	1·23	1·46	1·40	1·25	1·38	1·49
England and Wales ..	1·21	1·22	1·15	1·16	1·22	1·23	1·27	1·30	1·34	1·36	1·38

The rates are calculated from figures given in the Registrar General's Annual Reports.

INFECTIOUS DISEASES HOSPITAL.

Particulars of the work of the Infectious Diseases Hospital are given in the report of the Medical Superintendent, Dr. J. S. Anderson, on page 61.

LEEDS CITY HOSPITAL

(Seacroft).

REPORT FOR THE PERIOD,

APRIL 1st, 1928 TO MARCH 30th, 1929.

BY

J. S. ANDERSON, M.A., M.D., Ch.B., D.P.H., *Medical Superintendent.*

Patients admitted during the year numbered 4,156. This figure constitutes a record, the nearest approach to it being in the year 1922–1923, when 3,266 patients were admitted. The increase is almost entirely attributable to an extensive and prolonged epidemic of scarlet fever, which taxed the capacity of the hospital to its utmost.

Direct admissions from outside the City's boundaries numbered 14, consisting largely of patients suffering from puerperal conditions. During the annual period, 137 patients were admitted from the Leeds General Infirmary and 83 from other medical institutions in Leeds.

The daily average number of patients in the hospital was 396·2. It will be noted that this figure was exceeded in the annual periods 1911–1912 and 1922–1923 when the figures were 408·7 and 413·7 respectively. The present figure has been limited by the fact that the scarlet fever epidemic developed during the last six months of the period.

The average length of stay in hospital for 3,845 patients whose treatment was completed, was 37·2 days, the lowest figure recorded in the history of the hospital. Patient days in respect of these amounted to 143,014.

Smallpox Hospital.—Patients admitted during the year numbered 46 as against 81 in the previous annual period. In addition, one infant was admitted along with the mother. The number of patient days for 53 patients whose treatment was completed was 1,351, giving an average stay in hospital of 25·5 days.

Quarantine Cottages.—Persons admitted for observation during the year numbered 39 as against 186 in the previous annual period. Of these, three developed smallpox and were transferred to the

Smallpox Hospital for treatment. The number of patient days for 54 persons discharged or transferred during the year was 623, giving an average of 11·5 days. The rigorous weather of February, 1929, was responsible for the cottages being out of use for a month, owing to the freezing of the hot water circulation.

Death-rates.—Mortality rates are calculated on the total number of discharges and deaths. The fatality rate for all cases was 2·5 per cent.; in the previous year it was 3·1 per cent. The rate for 1928–1929 is the lowest ever recorded in the hospitals and is largely attributable to the exceptionally low death rate for scarlet fever during the epidemic. For diphtheria, the death-rate was also the lowest ever recorded in the hospitals.

Scarlet Fever.—Reference has already been made to an epidemic of this disease during the annual period. In June 1928, the number of admissions began to rise, and gradually the disease assumed epidemic proportions. By October 1928, the hospital was unable to cope with the rush of cases and a waiting list of patients had to be instituted. This undesirable state of affairs was relieved to some extent by an arrangement with the Leeds Board of Guardians who agreed to hand over temporarily to the Health Department an isolated block in Holbeck Infirmary. On November 1st, 1928, 50 extra beds became available in this manner, and the number was increased to 80 later in the month. This adjunct to the hospital was administered and staffed from Seacroft Hospital. As it was not considered expedient to instal a resident medical officer in the block, it was decided to utilise the beds for convalescent patients only. The procedure therefore adopted was to transfer patients who had passed the third week of the disease from Seacroft Hospital. By this means risk was reduced to a minimum and the necessity for highly skilled nursing was obviated. It was found convenient to limit the choice of patients to children of early school age only.

The Holbeck beds remained in occupation until February 27th, 1929. The total number of patients treated was 373, the patient days 7,643, and the cost, exclusive of medical and nursing services, amounted to £1,146 9s. 0d. The experiment proved highly satisfactory, and, apart from a slight outbreak of chickenpox in the male ward, no difficulties arose. No infection was reported among the other inmates of Holbeck Infirmary. In spite of the additional beds provided at Holbeck Infirmary however, it was not found

possible to dispense with the waiting list until the end of February, 1929, and even at the close of the annual period under review, the daily number of admissions was much above the average.

During the year 2,928 patients were admitted as compared with 798 for the previous year. Patient days in respect of patients who had completed treatment, numbered 106,525, equivalent to an average stay in hospital of 39 days. This represents a considerable decrease in the average stay, the figure being 44·2 in each of the two previous years. The decrease is partly attributable to the use of scarlatinal antitoxin and partly to the fact that, while the waiting list existed, cases could not be admitted so promptly. In the latter part of the period patients were also discharged earlier.

Return Cases.—These numbered 73 or 2·5 per cent. of patients admitted. The details are as follows :—

Admitted within	first	week	following	discharge of primary case	29
,,	,,	second	,,	,, ,,	26
,,	,,	third	,,	,, ,,	16
,,	,,	fourth	,,	,, ,,	2
Admitted within	four	weeks	,,	,, ,,	73

Type of Disease.—Although the epidemic attained such proportions, the disease was of a very mild type. Toxic cases were seldom encountered and severe septic cases were little in evidence especially in the latter half of the epidemic. As a result, the percentage incidence of the principal complications was comparatively low and showed a continuation of the steady decline which has been noted in recent years.

Death-rate.—The mortality rate was 0·6 per cent., as compared with 0·93 per cent. during the previous annual period. This probably represents the lowest level which is likely to be reached with a disease in which normally there is a considerable incidence of complications. The deaths, which numbered 17, were almost all septic cases.

Scarlatinal Antitoxin.—This continues to be used on a comparatively extensive scale in the treatment of scarlet fever, but it is also used for prophylactic purposes as well as in the treatment of puerperal infections in which it is believed to have a beneficial effect. It was not employed in a large proportion of patients because of the extreme mildness of the disease and partly

because a large number of patients were not admitted until the acute stage was over. The number of scarlet fever patients who received antitoxin was 463, of whom 10 died. The average stay in hospital of serum-treated patients was 42·4 days. This is rather longer than the general average, but it has to be noted that only acutely ill patients received antitoxin and that all included in this group were admitted within a few days of the onset of the disease. The cost of the treatment was £500.

Diphtheria.—During the year 572 patients were admitted, an increase of 111 compared with the previous year. A progressive increase has been noted for five years and this may culminate in the near future in one of the periodic exacerbations of the disease. The case mortality rate, 3·1 per cent., is the lowest ever recorded in the Leeds City Hospital and is largely attributable to the very low death-rate in tracheotomy cases. Details of the fatal cases are given in the table on page 71. Antitoxic serum in doses of from 60,000 to 100,000 units was administered in the majority of the fatal cases. Further improvement in the mortality rate is unlikely, as there is always bound to be a considerable proportion of patients who, for various reasons, do not receive antitoxin until late in the disease. A steady decline in the mortality rate from 33·3 per cent. in the quinquennium immediately preceding the introduction of antitoxin to 3·1 per cent., is very striking evidence of the progress that has been made in the treatment of this disease.

Tracheotomy cases numbered 24 of whom four died, giving a percentage mortality of 16·7. In two of the fatal cases the operation was performed before admission to hospital.

The patient days in respect of 555 patients who were discharged during the year amounted to 19,189, indicating an average stay in hospital of 34·6.

Measles.—Cases of measles admitted numbered 102, as compared with 52 during the previous annual period. Of these 94 were discharged cured, and eight died giving a case mortality rate of 7·8 per cent. Patient days amounted to 2,675, and the average stay in hospital was 28·5 days.

Enteric Fever.—Only three patients were admitted in the course of the year and there were no deaths. One patient, an

adult woman, became a persistent fæcal carrier and after prolonged detention, was discharged by arrangement with the Medical Officer of Health.

Tuberculosis.—In the early part of the year, a 22 bed ward was opened for the reception of advanced cases of pulmonary tuberculosis. It was not found possible to retain the ward when the scarlet fever epidemic assumed serious proportions and the need for beds became urgent. The total patients admitted was 51 and there were 19 deaths. This relatively high fatality rate contributed largely to the death-rate for the hospital as a whole. The ward was opened in June and shut down in October so that it was only in commission for a period of four months.

Smallpox.—The mild type of this disease so prevalent throughout the country and known as alastrim, or minor smallpox, has been in evidence during the period. The number of cases admitted was 46 corresponding to an average of almost one per week. A table is appended showing age groups and state of vaccination of those infected.

In the majority of cases the illness was of a very mild description with a sparse eruption, but in a few, the eruption was profuse, without, however, any marked constitutional disturbance. In these severe cases, persistent marked pigmentation survives the eruption though the pitting is insignificant. Simultaneous smallpox and vaccinia was present in three patients, vaccination having been performed, 5, 6 and 11 days before the appearance of the smallpox eruption. No deaths occurred.

Staff.—Reference must be made to the retirement from the post of Medical Superintendent of the Hospital of Dr. A. E. Pearson. It falls to the lot of few to occupy such a post for the long period of 39 years. During that time, he has seen the birth and development of the hospitals as they are now constituted. During the changing years he has kept the hospitals abreast of modern progress, and tribute must be paid to the high state of efficiency reached by the hospitals when he demitted office.

Owing to the demands of the scarlet fever epidemic, a large number of temporary nurses and domestics were employed. An additional clerk and a porter were also found necessary in order to cope with the greatly increased duties.

The health of the staff remained, on the whole, very good; 17 nurses and wardmaids unfortunately developed scarlet fever, and six diphtheria. The excessive number of scarlet fever victims is explained by the urgent demand for staff for the scarlet fever wards, and the lack of opportunity for the selection of insusceptible individuals. The routine immunisation of the nursing staff against diphtheria and scarlet fever is being practised and it is hoped to limit these diseases in the future to a greater extent.

Laboratory.—For diagnosis and discharging purposes 2,320 throat, nose and ear swabs were examined for diphtheria bacilli.

The following additional examinations were made:—

Cerebro-spinal fluid	3
Sputum	46
Blood (agglutinations)	1
Fæces and urine (for enterica organisms)	14
Urine (chemical examination)	20

Weekly chemical analysis of specimens of milk supplied to the hospitals were made, the constituents of which were as under:—

Percentages.	Fat.	Non-fatty Solids.	Total Solids.	Specific Gravity at 60° F.
Highest	5·7	9·1	13·6	1032·8
Lowest	2·6	7·9	11·2	1028·9
Average	3·5	8·6	12·1	1031·1

Poultry Farming.—(Killingbeck Smallpox Hospital Farm). The following were received for use in the hospitals:—

Eggs 5,819; Duck eggs 106; Goose eggs 19; Chickens 8.

The cost of food for poultry was £25 8s. 0d., and the value of produce was £40 11s. 7½d., leaving a profit of £15 3s. 7½d.

TABLE I.

THE SEACROFT HOSPITALS, KILLINGBECK SMALL POX HOSPITAL AND THE ISOLATION COTTAGES.

ABSTRACT FROM REGISTERS.

	Small Pox.	Measles.	Scarlet Fever.	Diphtheria.	Tuberculosis.	Enteric Fever.	Zymotic Enteritis.	Pneumonia.	Other Diseases.	For Quarantine (Cottages).	TOTAL.
Patients remaining in Hospitals and Isolation Cottages on Saturday, March 31st, 1928	14 (2)	6 (24)	138 (90)	55 (41)	..	.. (1)	..	4 (1)	36 (21)	15 (3)	268 (183)
Admitted from April 1st, 1928, to March 30th, 1929 .. .. (52 weeks)	46 (81)	102 (52)	2928 (798)	572 (461)	51	3 (8)	6 (13)	39 (44)	409 (417)	39 (186)	4195 (2060)
Total treated ..	60 (83)	108 (76)	3066 (888)	627 (502)	51	3 (9)	6 (13)	43 (45)	445 (438)	54 (189)	4463 (2243)
Discharged	53 (69)	94 (66)	2732 (743)	555 (431)	32	2 (8)	5 (10)	30 (32)	395 (381)	54 (174)	3952 (1914)
Died	..	8 (4)	17 (7)	18 (16)	19	.. (1)	1 (3)	10 (9)	29 (21)	..	102 (61)
Mortality per cent. ..	..	7·8 (5·7)	0.6 (0.93)	3·1 (3·6)	37·3	.. (11.1)	16.7 (23·1)	25 (22)	6.8 (5.2)	..	2·5 (3·1)
Patients remaining in Hospitals and Isolation Cottages on Saturday, March 30th, 1929	7 (14)	6 (6)	317 (138)	54 (55)	..	1	..	3 (4)	21 (36)	.. (15)	409 (268)
Average stay in Hospital for recovered patients (days) ..	25·5	28·5	39	34.6	61.1	60	18.6	27.9	29.2	11·5	36·7

Figures in Brackets are those of the previous annual period.

TABLE II.

Number of Patients ADMITTED MONTHLY to Hospitals, classified according to nature of disease, giving DAILY AVERAGES for each month, with daily average numbers of Staff employed.

	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Typhus.	Enteric Fever.	Zymotic Enteritis.	Pneumonia.	Tuberculosis.	Other Diseases.	Total Diseases.	Average Daily Numbers in Sea-roft Hospital.														Total Daily Average No. of persons.	
												Medical Staff.		Mt'n and Asts.	Sister Tutor	Dispsr.	Engineer's Staff.		Steward's Staff		Office.		Patients.	Nurses.	*Maids.		
												Non-Res.	Res.	Res.	Res.	Non. Res.	Non. Res.	Res.	Non-Res.	†Res.	Non-Res.	Res.				Non-Res.	Res.
Four weeks ended April 28	8	6	53	41	..	..	..	7	..	30	145	1	2	3	1	1	18	..	22	8·3	1	1	203·7	77·4	60·4	43	356·8
Five ,, June 2	2	23	98	42	..	..	..	6	..	37	208	1	2	3	1	1	18	..	22	8·3	1	1	191·5	72·4	60·1	43	339·3
Four ,, June 30	8	12	106	56	..	..	..	2	18	42	244	1	2	3	1	1	18	..	22	9·4	1	1	223·6	72·2	60·2	43	372·4
Four weeks ended July 28	1	19	177	33	..	..	1	4	10	27	272	1	2	3	1	1	18	..	22	9·1	1	1	294·5	75·7	62·4	43	448·7
Five ,, Sept. 1	5	10	206	37	..	..	4	4	10	40	316	1	2	3	1	1	18	..	22	8·7	1	1	318·9	80·2	64·4	43	479·2
Four ,, Sept. 29	2	3	264	46	..	..	1	1	6	47	370	1	2	3	1	1	18	..	22	9·0	1	1	395·6	83·9	64·0	43	559·5
Five weeks ended Nov. 3	1	1	393	89	..	..	..	..	7	37	528	1	3	3	1	1	18	..	22	9·2	1	1	486·4	95·8	70·6	43	670·0
Four ,, Dec. 1	..	7	350	45	..	..	..	3	..	23	428	1	3	3	1	1	18	..	22	8·3	1	1	573·6	104·4	72·8	43	767·1
Four ,, Dec. 29	3	4	300	51	..	1	..	1	..	32	392	1	3	3	1	1	18	..	22	8·1	1	1	564·7	104·2	73·1	43	758·1
Five weeks ended Feb. 2	2	8	430	52	..	2	..	9	..	34	537	1	3	3	1	1	18	..	22	8·3	2	1	536·7	103·4	72·2	44	728·6
Four ,, Mar. 2	6	2	295	54	..	..	..	1	..	31	369	1	3	3	1	1	18	..	22	9·4	2	1	526·9	104·2	73·9	44	652·4
Four ,, Mar. 30	8	7	256	46	..	..	..	1	..	29	347	1	3	3	1	1	18	..	22	9·4	2	1	438·5	103·2	73·4	44	625·3
Fifty-two weeks ended March 30, 1929	46	102	2928	572	..	3	6	39	51	409	4156	1	2·5	3	1	1	18	..	22	8·8	1·3	1	396·2	89·7	67·3	43·2	563·1

* Includes three maids at Killingbeck Small Pox Hospital and one caretaker at Quarantine Cottages.
† Includes one porter at Killingbeck Small Pox Hospital and one caretaker at Quarantine Cottages.

TABLE III.

Number of ADMISSIONS during each of the last twenty years.

Year.	Seacroft Hospital.	Sanatorium for Tuber-culosis.	Small Pox Hospital.	Admitted to all Hospitals.	Cottages for Contacts.	Total No. Ad-missions.
1909–10	2,569	..	..	2,569	215	2,784
1910–11	2,674	..	1	2,675	87	2 762
1911–12	2,634	..	1	2,635	109	2,744
*1912–13	1,995	**98	..	2,093	104	2,197
1913–14	2,383	§528	..	2,911	52	2,963
1914–15	2,233	597	5	2,835	38	2,873
†1915–16	1,999	§399	1	2,399	29	2,428
††1916–17	1,440	§482	..	1,922	11	1,933
1917–18	1,366	**545	..	1,911	6	1,917
1918–19	1,349	**421	..	1,770	8	1,778
‡1919–20	2,668	§378	..	3,046	33	3,079
1920–21	2,148	..	..	2,148	4	2,152
1921–22	2,430	..	..	2,430	6	2,436
1922–23	3,265	..	1	3,266	18	3,284
1923–24	2,185	..	..	2,185	16	2,201
1924–25	2,033	..	8	2,041	73	2,327
1925–26	1,944	..	4	1,948	8	1,956
1926–27	1,632	..	3	1,635	9	1,644
1927–28	1,793	..	81	1,874	186	2,060
***1928–29	4,110	..	46	4,156	39	4,195
Totals ..	44,850	3,448	151	48,449	1,051	49,500

*Wards opened at Seacroft Hospital, Dec., 1912, for cases of tuberculosis.
**Patients at Seacroft Hospitals.
§Tuberculosis Patients at Seacroft Hospitals included.
†Military Authorities took over New Killingbeck Hospital, Oct. 14th, 1915.
††Military Authorities took over Old Killingbeck Hospital, Oct. 9th, 1916.
‡Killingbeck Hospitals re-opened for tuberculosis patients, July 16th, 1919.
***Ward taken over at Holbeck Infirmary for scarlet fever patients for three months.

TABLE IV.

DAILY AVERAGES of Patients in the City Hospitals from 1891 to 1928.

Years.	Daily Averages.			Total in all Hospitals under Treatment.	Highest Number in on one day.			Lowest Number in on one day.		
	Fever Hospital.	Tuber-culosis Sanatorium.	Small Pox Hospital.		Fever Hospital.	Tuber-culosis Sanatorium.	Small Pox Hospital.	Fever Hospital.	Tuber-culosis Sanatorium.	Small Pox Hospital.
1891	46.3	..	10.1	494	79	..	36	16	..	1
1892	79.7	..	10.9	801	130	..	63	42	..	1
1893	54.2	..	55.6	1,179	115	..	166	18	..	3
1894	71.2	..	10.3	801	108	..	27	39	..	1
1895	82.4	..	.3	822	145	..	8	35	..	1
1896	76.6	..	.06	862	120	..	2	41	..	1
1897	79.2	..	..	853	99	..	..	54	..	..
1898 (Jan. to March)	77.2	..	.4	241	83	..	2	73	..	1
1898–1899	143.3	..	.1	905	126	..	3	11	..	1
1899–1900	144.3	..	.06	1,239	169	..	1	105	..	1
1900–1901	169.0	..	..	1,384	219	..	3	107	..	1
1901–1902	194.4	..	.2	1,623	216	..	5	142	..	1
1902–1903	192.2	..	13.2	1,845	225	..	61	131	..	1
1903–1904	195.4	..	30.5	1,930	206	..	86	142	..	1
1904–1905	170.9	..	14.0	1,621	229	..	45	121	..	1
1905–1906	153.5	..	4.5	1,491	190	..	46	85	..	1
1906–1907	243.1	..	..	1,879	334	..	..	168	..	..
1907–1908	235.4	..	..	1,798	286	..	..	193	..	..
1908–1909	202.4	..	..	1,611	271	..	..	137	..	..
1909–1910	358.1	..	..	2,797	512	..	..	229	..	..
1910–1911	392.2	..	.01	3,064	494	..	1	238	..	1
1911–1912	408.7	..	.01	3,035	527	..	1	309	..	1
1912–1913	301.1	..	..	2,431	366	..	..	224	..	..
1913–1914	341.0	§113.5	..	3,259	467	152	..	276	39	..
1914–1915	301.1	130.1	.35	3,303	374	150	3	223	104	..
1915–1916	269.9	†93.9	.06	2,758	353	123	1	207	66	..
1916–1917	179.2	†85.1	..	2,255	271	103	..	115	65	..
1917–1918	178.2	†94.5	..	2,173	241	102	..	111	56	..
1918–1919	175.2	†85.1	..	2,014	255	111	..	123	36	..
1919–1920	335.8	‡130.6	..	3,400	519	171	..	217	103	..
1920–1921	270.6	..	..	2,511	375	..	..	220	..	..
1921–1922	305.0	..	..	2,678	490	..	..	170	..	..
1922–1923	413.9	..	.05	3,627	553	..	1	278	..	..
1923–1924	276.3	..	..	2,611	433	..	..	196	..	..
1924–1925	232.4	..	2.7	2,254	306	..	5	147	..	..
1925–1926	214.3	..	0.35	2,200	243	..	4	136	..	..
1926–1927	165.7	..	0.18	1,837	241	..	2	106	..	.
1927–1928	172·5	..	6·4	2,054	247	..	20	120	..	..
1928–1929	396·2	..	3·2	4,409	596	..	15	167	..	..

†Tuberculosis patients at Seacroft Hospital included.
‡To November, 1919.
§For seven annual periods, 1913 to 1919, at Seacroft and Killingbeck Hospitals. After November, 1919 tuberculosis patients were under treatment at Killingbeck Hospital only.

TABLE V.

DETAILS OF DIPHTHERIA DEATHS 1928-1929.

No. of Case.	Age Group.	Type of Disease.	Day of Disease on Admission.	Important Features.
1	0–1	L*	1	Pulmonary complications. Post measles.
2	1–2	L	6	Tracheotomy before admission.
3	do.	F and L	1	Tracheotomy. Also pneumonia.
4	2–3	F	3	Multiple paralysis.
5	3–4	F and L	2	Tracheotomy before admission. Pneumonia; empyema.
6	do.	F and L	4	Very severe.
7	do.	F	5	Paralysis.
8	do.	F	3	do.
9	do.	F	3	Haemorrhagic.
10	5–10	F and L	10	Tracheotomy.
11	do.	F	3	Haemorrhagic.
12	do.	F	3	do.
13	do.	F	2	Paralysis.
14	do.	F	2	do.
15	do.	F	3	do.
16	do.	F	5	Paralysis; pneumonia.
17	10–15	F	4	Moribund on admission.
18	30–35	F and L	2	Cerebral tumour.

* L = Laryngeal. F = Faucial.

TABLE VI.

Scarlet Fever. Percentage incidence of principal complications.

Principal Complications.	Total Number of Cases.	Percentage Incidence.
Adenitis (suppurative adenitis 20 cases) ..	197	7·1
Albuminuria and Nephritis (Albuminuria 33 cases; Nephritis 21 cases)	54	1·9
Otitis Media (Bilateral 27 cases; mastoiditis 9 cases)	156	5·6
Rheumatism	52	1·8
Rhinitis	178	6·4

TABLE VII.

Diphtheria. Ages of Patients. Complications.

Age-Periods.	0-1	1-2	2-3	3-4	4-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-60	60-70	70-80	All Ages.
Cases ..	9	18	26	46	40	229	77	48	43	13	8	9	6	..	1	..	..	573
Fatal Cases	1	2	1	5	..	7	1	..	..	..	1	..	..	..	..	..	..	18
Fatality %	11.1	11.1	3.8	10.9	..	3.0	1.3	..	..	..	12.5	..	..	..	..	..	..	3.1
Albuminuria	..	1	11	16	24	101	30	10	5	1	1	1	2	..	..	..	..	203
Album. %	..	5.5	42.3	34.8	60	44.1	38.9	20.8	11.6	7.7	12.5	11.1	33.3	..	..	..	..	35.4
Paralysis ..	..	..	2	9	6	33	5	3	1	..	..	..	..	..	..	..	..	59
Paralysis %	..	..	7.7	19.6	15	14.4	6.5	6.2	2.3	..	..	..	..	..	..	..	..	10.3
Croup ..	3	9	8	17	7	20	1	1	1	..	1	..	..	..	..	..	..	68
Croup % ..	33.3	50	30.8	36.9	17.5	8.7	1.3	2.1	2.3	..	12.5	..	..	..	..	..	..	11.9
Tracheotomy No.	..	2	2	6	6	7	..	..	1	..	..	..	..	..	..	..	..	24
Deaths* ..	..	2	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	4
Fatality %	..	100	..	16.7	..	14.3	..	..	..	..	..	..	..	..	..	..	..	16.7

*In two fatal cases, tracheotomy was performed before admission.

TABLE VIII.

SMALLPOX.

Age Group.	Number Vaccinated.	Number Unvaccinated.	Total Cases.
– 10	..	3	3
11 – 20	4	9	13
21 – 30	2	6	8
31 – 40	1	1	2
41 – 50	3	3	6
51 – 60	9	..	9
61 + ...	2	3	5
All Ages	21	25	46

TABLE IX.

Staff Illnesses.

Nature of Illness.	No.	Days in Hospital	Deaths.
Scarlet Fever	17	602	..
Diphtheria	6	121	..
Rubella	1	4	..
Influenza	6	109	..
Throat Conditions (Septic)	20	469	..
Acute Rheumatism	2	129	..
Bronchitis	2	77	1
Otitis	1	16	..
Appendicitis	1	19	..
Conjunctivitis	1	8	..
Abscesses	2	61	..
Synovitis	1	29	..
Cellulitis of hand	1	27	..
Sprains	2	16	..
Scald	1	4	..
	64	1691	1

TABLE X.

*Other Diseases.

Disease.	Number of Cases.	Deaths.
Infectious Diseases :—		
Erysipelas	154	14
Puerperal Fever or Pyrexia	50	7
Chickenpox	37	..
Whooping Cough	17	3
Rubella	1	..
Parotitis	2	..
Encephalitis Lethargica	2	..
Ophthalmia Neonatorum	1	..
Syphilis	2	..
Vaccinia	1	..
Pulmonary Diseases (excluding Acute Primary Pneumonia)	8	3
Sepsis of Nose or Throat	39	..
Skin Diseases :—		
Pemphigus	2	..
Impetigo	4	..
Lichen planus	1	..
Sudamina miliaria	1	..
Pustular dermatitis	1	..
Herpes zoster	1	..
Urticaria papulosa	1	..
Scabies	1	..
Pediculosis	2	..
Intestinal Disorders :—		
Enteritis	2	..
Diarrhoea	1	..
Acute Constipation	2	..
Intestinal Sepsis	1	..
Appendicitis	1	..
Septic Conditions :—		
Lachrimal abscess	1	..
Cervical abscess	1	..
Carbuncle	1	..
Cellulitis of arm	1	..
Suppurative arthritis	1	..
Other Conditions :—		
Tuberculous meningitis	1	1
Septicaemia	1	1
Nephritis	1	..
Dental disorders	6	..
Iritis	1	..
Hystero-catalepsy	1	..
Marasmus	1	..
Quarantine	4	..

*Excluding Staff illnesses.

TABLE XI.

The NUMBER OF CASES of Infectious Disease treated at the Leeds Corporation Hospitals since July 1st, 1885, (date of transfer of Hospitals from House of Recovery Trustees), with the number of deaths.

		Quinquennium, 1886 to 1890.	Total for quinquennium 1891 to 1895.	Total for quinquennium 1896 to 1900.	Total for quinquennium, 1901 to 1905.	Total for quinquennium, 1906 to 1910.	Total for quinquennium, 1911 to 1915.	Total for quinquennium, 1916 to 1920.	Year. *1921	*1922	*1923	*1924	*1925	Total for quinquennium 1921 to 1925	Year. *1926	*1927	*1928	TOTALS 1885 to 1928
MEASLES	No. of cases ..	26	13	14	37	137	109	282	1	66	45	124	73	309	157	70	102	1256
	No. of deaths ..	..	1	..	1	13	20	43	..	7	2	11	7	27	15	4	8	132
	Mortality per cent.	..	7.7	..	2.7	9.5	18.3	15.2	..	10.7	4.4	8.9	9.6	8.9	9.6	5.7	7.8	10.5
SCARLET FEVER	No. of cases ..	1039	1728	3095	4726	4741	6235	4329	1422	2532	1706	1175	1062	7897	706	750	2749	37995
	No. of deaths ..	78	97	121	159	141	140	72	14	31	26	19	11	101	2	7	17	935
	Mortality per cent.	7.5	5.6	3.9	3.3	2.9	2.2	1.6	.98	1.2	1.5	1.6	1.0	1.2	.28	.93	.6	2.4
DIPHTHERIA ..	No. of cases ..	3	15	337	682	2696	3013	2940	598	406	331	294	382	2011	380	447	573	13097
	No. of deaths ..	1	5	58	72	215	277	203	34	29	16	28	35	142	31	16	18	1038
	Mortality per cent.	33.3	33.3	17.2	10.6	7.9	9.1	6.9	5.6	7.1	4.8	9.6	9.1	7.0	8.2	3.6	3.1	7.9
TYPHUS	No. of cases ..	105	3	49	20	15	..	..	..	..	..	..	..	..	..	..	..	192
	No. of deaths ..	21	1	8	3	2	..	..	..	..	..	..	..	..	..	..	..	35
	Mortality per cent.	20.0	33.3	16.3	15	13.3	..	..	..	..	..	..	..	..	..	..	..	18.2
ENTERIC FEVER	No. of cases ..	577	797	871	858	582	360	140	15	10	8	5	4	42	3	9	2	4241
	No. of deaths ..	89	127	109	137	84	50	22	1	2	..	1	1	5	..	1	..	624
	Mortality per cent.	15.4	16.0	12.5	15.9	14.4	13.9	15.7	6.6	20	..	20	25	11.9	..	11.1	..	14.7
TUBERCULOSIS ..	No. of cases ..	..	..	..	..	..	1548	1900	..	..	..	..	..	..	..	..	51	3499
	No. of deaths ..	..	..	..	..	..	184	269	..	..	..	..	..	..	..	..	19	472
	Mortality per cent.	..	..	..	..	..	11.8	14.1	..	..	..	..	..	..	..	..	37.3	13.5
PNEUMONIA ..	No. of cases ..	43	56	60	51	93	82	53	10	6	27	53	36	132	23	41	40	674
	No. of deaths ..	9	11	11	10	27	22	19	4	4	16	8	11	43	4	9	10	174
	Mortality per cent.	21.0	19.7	18.3	19.6	29.0	26.8	35.8	40	66.6	59.3	15.1	30.5	32.6	17.4	22	25	25.8
SMALL POX ..	No. of cases ..	165	837	12	701	..	6	..	..	1	..	8	4	13	1	69	53	1857
	No. of deaths ..	18	40	4	32	..	..	..	..	..	..	..	..	..	..	..	..	94
	Mortality per cent.	10.9	4.7	33.3	4.5	..	..	..	..	..	..	..	..	..	..	..	..	5.0
PUERPERAL FEVER (From 1921).	No. of cases ..	..	..	..	..	..	..	..	6	14	6	18	40	84	32	51	50	217
	No. of deaths ..	..	..	..	..	..	..	..	1	4	1	6	12	24	2	3	7	36
	Mortality per cent.	..	..	..	..	..	..	..	16.6	28.6	16.6	33.3	30.0	28.8	6.2	5.9	14.0	16.5
ZYMOTIC GASTRO-ENTERITIS .. (From 1921)	No. of cases ..	..	..	..	..	..	..	..	84	3	3	45	41	176	43	13	6	238
	No. of deaths ..	..	..	..	..	..	..	..	43	1	..	8	23	75	15	3	1	94
	Mortality per cent.	..	..	..	..	..	..	..	51.2	33.3	..	40	56.0	42.6	34.9	23.1	16.7	39.5
ERYSIPELAS .. (From 1921)	No. of cases ..	..	..	..	..	..	..	..	44	41	53	76	127	341	113	128	154	736
	No. of deaths ..	..	..	..	..	..	..	..	6	6	6	10	11	39	9	11	14	73
	Mortality per cent.	..	..	..	..	..	..	..	13.6	14.6	11.3	13.3	8.9	11.4	7.9	8.6	9.0	9.9

* To March 31st of following year.

TABLE XII.

METEOROLOGICAL RECORD.

(Observations made at 9.30 a.m.).

HEIGHT FROM GROUND:—Barometer, 2 ft.; Thermometers, 4 ft.; Rain Gauge, 1 ft. (235 ft. above sea-level).

1928-29.	*BARO-METER, 9-30 a.m.	TEMPERATURE. Shade—Minimum and Maximum. Mean.	Min.	Date.	Max.	Date.	RAINFALL. Total Inches.	Max. in 24 hrs.	Date.	No. of days on which '01" or more fell.	WIND—No. of Observations. N.	N.N.E.	N.E.	E.N.E.	E.	E.S.E.	S.E.	S.S.E.	S.	S.S.W.	S.W.	W.S.W.	W.	W.N.W.	N.W.	N.N.W.
April ..	29·790	45·8	28	17–19	74	26	·57	·14	30	12	–	3	6	1	1	2	–	3	1	1	4	2	1	–	–	5
May ..	29·995	49·7	31	8	71	30	2·48	·72	19	15	–	5	14	3	–	–	–	1	1	–	1	1	–	–	4	1
June ..	29·873	54·2	36	4	74	3	4·17	1·06	7	17	–	3	4	2	1	1	1	–	1	2	5	5	1	2	2	–
July ..	30·016	60·3	43	3–7	81	12–14	·45	·22	31	9	–	1	–	–	–	–	–	1	–	–	6	7	2	–	14	–
August ..	29·996	59·7	41	1	75	24	3·35	1·58	20	15	–	–	3	–	–	–	1	–	–	4	11	2	2	3	4	1
September	30·112	54·4	32	30	79	5	·22	·11	5	8	–	2	9	1	–	–	1	–	–	–	6	1	1	3	5	1
October	29·776	49·3	27	22	67	8–25	4·66	1·10	14	20	–	2	3	1	–	–	4	1	–	3	12	–	–	–	5	–
November	29·658	45·5	25	3	65	1	3·73	·82	16	19	–	1	5	–	–	–	2	–	–	1	11	2	1	1	5	1
December	29·995	36·7	22	8	67	1	1·66	·29	16	16	–	–	7	–	–	–	2	–	–	3	4	1	2	–	9	3
January	30·272	34·1	21	15	54	19	2·17	·42	28	17	–	1	9	1	–	–	4	–	–	1	5	–	–	–	5	5
February	30·105	30·4	12	16	63	1	·69	·28	9	9	–	2	2	–	–	3	11	4	–	–	2	–	–	–	3	1
March ..	30·351	42·8	15	1	74	29	·36	·31	21	6	–	1	6	–	–	–	2	3	–	1	2	2	–	2	9	3
Year ..	29·995	46·9	12	Feb. 16	81	July 12–14	24·51	1·58	Aug. 20	163	–	21	68	9	2	6	28	13	3	16	69	23	10	11	65	21

E = 40·2% W = 58·9%

* Corrected to temperature and mean sea level at Liverpool.

TABLE XIII.

METEOROLOGICAL RECORD.

1928-29.	SUN-SHINE. Total, hr. min.	SUNSHINE. Max. in 24 hrs. hr. min.	Date.	No. of days no Sunshine.	*WIND—FORCE. Daily Average, miles per hour.	Max. in 24 hrs. miles per hour.	EARTH TEMPERATURE. (4' 0" below surface). Max.	Date.	Min.	Date
April	170·0	11·20	24	2	..	..	43·0	15–30	41	1–3
May	164·45	13·30	5	2	..	..	47	31	43·5	1
June	211·15	14·50	1	3	..	..	51	30	47·5	1–2
July	263·5	14·20	14	1	..	..	56	26–30	50·5	1–2
August ..	210·35	14·0	4	1	..	..	57	27	55	5–12
September ..	183·50	11·10	30	..	..	..	56·5	2–15	53·5	29–30
October ..	121·15	8·50	1–20	2	..	..	54	1	50	28–31
November ..	69·20	6·50	8	8	..	..	50	2–3	47	15–30
December ..	31·50	6·10	8	18	..	..	46·5	1–4	41	30
January ..	41·20	6·20	24	15	..	..	41·5	3	37·5	27
February ..	46·10	7·0	14	10	..	..	39	6–12	37	22–28
March	182·25	11·30	29	4	..	..	39	30–31	35	15–19
Year ..	1695·50	14·50	June 1	66	..	..	57	Aug. 27	35	Mar. 15 to 19

* Anemometer out of order.

BACTERIOLOGICAL WORK.

The following is a complete summary of the work done for the Health Department by the Department of Pathology and Bacteriology in the Leeds University Medical School, under the supervision of Professor James W. McLeod, the City Bacteriologist.

GENERAL.

Nature of pathological or bacteriological investigation.	Number of specimens.
Diphtheria—	
Swabs for Klebs Löeffler bacillus	2,460
Tuberculosis—	
Sputum for tubercle bacillus	1,903
Cerebro Spinal Fluid for tubercle bacillus	1
Urine for tubercle bacillus	14
Pus and other Fluids for tubercle bacillus	10
Fæces for tubercle bacillus	1
Typhoid—	
Fæces for Typhoid group of organisms	9
Agglutination (Widal) Test for typhoid group	19
Other—	
Pus and Fluids for organisms	8
Sputum for organisms	1
Urine for organisms	15
Guinea Pig Inoculations—	
Fluids for culture and guinea pig inoculation	7
Milk for Guinea pig inoculation	71
Food Investigations—	
Milk for bacterial count	2
Milk direct examination	1
Food for organisms	2
Water Investigations—	
Water bacteriological examinations	50
Water bacterial count	11
Other—	
Hair for ringworm	1
Swabs for organisms	4
Sera for investigation by agglutin absorption ..	1
Histology, examination of sections of gland	1
TOTAL	4,592

AMBULANCE WORK AND DISINFECTION.

Ambulance Work.—During the year under review 4,268 cases were removed by the ambulances to the City Hospital, Killingbeck Sanatorium and other hospitals or lying-in institutions. In addition 88 smallpox contacts were conveyed to the isolation cottages at the City Hospital, three cases were removed to Sherburn Smallpox Hospital and four puerperal cases to Seacroft on behalf of the West Riding County Council. Over and above these, 411 other journeys were made for the transference of patients from one institution to another or for returning patients home on discharge from hospital.

The following are details of the cases removed by the ambulances :—

Smallpox	53
Scarlet Fever	2,350
Diphtheria	660
Typhoid	10
Measles	78
Tuberculosis	168
Other Diseases	318
Maternity	631
Total	4,268

(as compared with 2,491 in 1927).

The total mileage run by the ambulances was 40,994 as compared with 26,863 during the previous year.

During the year a new Daimler ambulance was purchased and put into commission on December 12th.

Disinfection.—The following work was done by the disinfecting staff :—

Houses disinfected	3,941
Rooms	9,399
Beds and Mattresses	5,166
Articles of bed linen	36,894
Articles of clothing	50,146
Other articles	8,410

Disinfectant baths were provided and disinfection of clothing carried out in respect of 683 infectious disease contacts.

The total mileage run by the three bedding vans was 24,458.

During the year work has been completed in respect of general repairs and repainting of both Beckett Street and Kidacre Street disinfecting stations.

Verminous Persons.—The number of verminous persons dealt with at the cleansing station was 260, while 150 rooms in 47 houses and 3,946 articles of bedding and clothing were disinfected. Nine notices were served during the year under Sections 45 and 46 of the Public Health Act, 1925.

The year 1928 proved an exceptionally heavy one in respect of ambulance and disinfection work and the staff concerned worked long hours under exacting conditions and gave of their best throughout.

Venereal Diseases.

There were 20 deaths certified during the year as due to syphilis which is equal to a death-rate of 0·04 per thousand of the population. Of these, eight were children under one year of age, six males and two females ; one female between 15 and 25 ; two males and one female between 25 and 45 ; and six males and two females between 45 and 65. The death rate for 1928 shows a decrease of 0·03 or 42·9 per cent., as compared with the rate for the previous year.

Work of the Treatment Centre.—The total number of new cases registered at the centre at the Leeds General Infirmary from Leeds and the contributory areas during the year was 1,823. Increases in the number of cases applying for treatment are recorded in syphilis 68 (male 49, female 19) ; in gonorrhœa 128 (male 81. female 47) and other diseases not venereal 139 (male 138 female 1) making a total increase of 335 cases of all kinds as compared with the figure for the previous year.

Turning to the Leeds cases the total number of new cases registered was 1,467 comprising 240 males and 135 females suffering from syphilis 569 males and 105 females suffering from gonorrhœa, and 334 males and 84 females suffering from other diseases not venereal. These figures represent an increase in the cases of syphilis of 47 males and 20 females, in gonorrhœa an increase of 80 males and 36 females, and in other diseases not venereal an increase of 113 males and a decrease of eight females. The total attendances of all Leeds cases was 60,874 or an increase of 5,546 over the figure for the previous year.

LEEDS GENERAL INFIRMARY (LOCAL TREATMENT CENTRE).

Cases on the register on January 1st, 1928 ..	1,961
Old cases re-admitted	34
New cases admitted	1,823
Cases ceased to attend	586
Transferred to other centres	144
Discharged on completion of treatment	970
Cases on the register on January 1st, 1929 ..	2,118

Persons Treated at the General Infirmary, Leeds.
(local treatment centre).

	Year 1927.		Year 1928.		Increase or decrease.	
	M.	F.	M.	F.	M.	F.
Syphilis .. first cases ..	255	168	304	187	+ 49	+ 19
Soft chancre ,, ..	..	..	..	..	..	..
Gonorrhœa ,, ..	598	89	679	136	+ 81	+ 47
Other diseases not Venereal ,, ..	269	109	407	110	+138	+ 1
Total	1,122	366	1,390	433	+268	+ 67
Total attendances of all cases	65,061		71,391		+ 6,330	
Aggregate No. of In-patient days	93		148		+ 55	
No. of doses of Salvarsan substitutes	13,736		13,018		- 718	
Pathological specimens examined :—						
Spirochetes	43		48		+ 5	
Gonococci	2,519		3,217		+ 698	
Other organisms	7		8		+ 1	
Blood—Wassermann reaction	3,808		3,533		- 275	

Leeds Patients

	Year 1927.		Year 1928.		Increase or Decrease.	
	M.	F.	M.	F.	M.	F.
Syphilis .. .. first cases	193	115	240	135	+ 47	+ 20
Soft chancre .. ,,	..	..	..	..	..	..
Gonorrhœa .. ,,	489	69	569	105	+ 80	+ 36
Other diseases, not Venereal .. ,,	221	92	334	84	+113	- 8
Total	903	276	1,143	324	+240	+ 48
Total attendances of all cases	55,328		60,874		+ 5,546	
Aggregate No. of In-patient days	50		38		- 12	
No. of doses of Salvarsan substitutes	10,441		9,795		- 646	
Pathological specimens examined :—						
Spirochetes	38		43		+ 5	
Gonococci	2,186		2,701		+ 515	
Other organisms	..		..		+ —	
Blood—Wassermann reaction	3 015		2,746		- 269	

The marked increase in the incidence of syphilis and gonorrhœa recorded in the above statement is somewhat disconcerting. Immediately after the war there was a steep rise in the curve of infection in Leeds and throughout the whole country. That was succeeded by a more or less rapid fall in Leeds in 1921–1923 followed in 1924–1927 by a period when the figures were practically stationary. Last year the curve began to ascend again and may possibly continue to rise for the next two or three years. These intermissions are not uncommon in this country and are difficult of explanation. Undoubtedly the greater freedom of social intercourse between the sexes which was characteristic of the war period and has continued ever since conduces to the spread of venereal disease. There has also been a distinct relaxation in the code of morals in recent years due in some measure to the freedom already alluded to as well as to the undue emphasis placed on sexual matters in much of the current literature and drama.

Institutions.—The number of new cases admitted as in-patients at the Leeds Maternity Hospital decreased from 96 in 1927 to 22 whilst the total cases treated decreased from 99 to 25 namely 16 syphilis, and nine gonorrhœa. The in-patient days decreased correspondingly from 1,623 to 632.

At the Leeds General Infirmary the in-patient days increased from 93 in 1927 to 148 in 1928.

At the Hope Hospital, the chief function of which is to deal with women and girls of the rescue class suffering from venereal diseases, the number of cases treated was 54 as against 62 for the previous year, whilst the number of new admissions decreased from 43 to 35. The in-patient days increased from 6,060 to 6,400. It should be pointed out, however, that these figures do not include babies admitted with their mothers or born whilst their mothers were in residence.

On behalf of the Health Committee I should like to acknowledge our indebtedness to the Voluntary Committee for the good service it has rendered during the year and express our thanks for the same.

Further particulars of the cases admitted to and treated in the Maternity and Hope Hospitals are given on page 84.

Supply of Salvarsan Substitutes.—The number of medical practitioners in the area qualified to receive free supplies of salvarsan substitutes up to the end of the year was 47. The amount of salvarsan substitutes distributed to practitioners was 1,249 doses, a decrease of 355 on the figure for 1927.

MATERNITY HOSPITAL, 42, HYDE TERRACE.

	Cases in residence on Dec. 31st, 1927.	Cases admitted.	Cases discharged.	Cases in residence on Dec. 29th, 1928.
Syphilis	1	15	16	..
Gonorrhœa ..	2	7	9	..
Syphilis and Gonorrhœa ..	..	..	..	..
Other disease ..	..	..	..	..
Total ..	3	22	25	..

HOPE HOSPITAL, 126, CHAPELTOWN ROAD.

	Cases in residence on Dec. 1st, 1927.	Cases admitted.	Cases discharged.	Cases in residence on Dec. 29th, 1928.
Syphilis	9(+5)	7(+3)	13(+ 5)	3(+3)
Gonorrhœa	10(+3)	24(+12)	22(+11)	12(+4)
Syphilis and Gonorrhœa ..	..	2	2	..
Other disease	..	2	2	..
Total ..	19(+8)	35(+15)	39(+16)	15(+7)

Total days in residence .. .. .. 6,400(+2,909)
No. of doses of Salvarsan substitute .. 247

Pathological specimens examined :—

Spirochetes	—
Gonococci	69
Other organisms	—
Blood—Wassermann reaction	56

Of the 35 women admitted, 15 had babies shown in the above table in brackets.

WORK DONE IN THE DEPARTMENT OF PATHOLOGY AND BACTERIOLOGY OF THE UNIVERSITY OF LEEDS IN CONNECTION WITH THE V.D. REGULATIONS.

NATURE OF TEST.	NUMBER OF TESTS.
For detection of spirochetes—	
for treatment centre	43
for practitioners	..
for institutions	1
For detection of gonococci—	
for treatment centre	1,685
for practitioners	303
for institutions	460
For Wassermann reaction—	
for treatment centre	2,746
for practitioners	305
for institutions	2,420
Other examinations—	
for treatment centre	1,016
for practitioners	6
for institutions	..
TOTAL	8,985

Tuberculosis.

The total number of names on the tuberculosis register on December 31st, 1928, was 7,867 as compared with 8,337 at the corresponding period of the previous year, a decrease of 470. The decrease is accounted for by cancellations which have been made during the year consequent upon death, removal from the city, cure or change in diagnosis; in addition to which there was a further fall in the number of notifications. Indeed the year was unique in that for the first time since the register came into being, with the exception of the year when it was revised, there were fewer names on it at the end of the year than at the beginning. Even so it is probably not an accurate index of the prevalence of the disease in the City for there are undoubtedly many cases on the register who have never been re-examined since notification and therefore of whom nothing as to their present condition is known. They have been invited to come up to the Dispensary for re-examination but have failed to put in an appearance. It is known that many of them are at work and as far as can be ascertained quite fit. But without definite evidence that the disease no longer exists, which can be got only by examination, their names cannot be removed from the register.

On the whole, the year was a favourable one as far as pulmonary tuberculosis is concerned, and but for a slight rise in the case-rate, would have been equally favourable for non-pulmonary. As already stated there was a fall in the incidence of pulmonary tuberculosis and the mortality from all forms showed a distinct decrease. The climatic conditions and the comparative absence of acute respiratory disease may have accounted in some measure for this gratifying result, but whatever the explanation—and I think the staff of the Tuberculosis Dispensary deserve some of the credit—the year was one of the best on record.

Statistics.—During the year, 766 cases of pulmonary and 158 of non-pulmonary tuberculosis were notified, making a total of 924 cases. Of these, 492 were males and 432 females. Compared with the previous year this is a decrease of 45 in the number of notifications of pulmonary tuberculosis and an increase of three in the number of non-pulmonary, and compared with the average of the previous five years a decrease of 439 in pulmonary tuberculosis and 10 in non-pulmonary. Of the cases notified during 1928, 821 were by medical practitioners and 103 came from institutions.

The number of cases of pulmonary tuberculosis not heard of until the time of death was 36, a decrease of one on the figure for the previous year. Of non-pulmonary cases, the number unnotified was 44 or 12 less than in 1927. Taking both types together, the number unnotified at the time of death was 80, a decrease of 13 as compared with the previous year. The particulars set out in the table on page 93 show the extent to which medical practitioners have failed to recognise the statutory obligation imposed on them with respect to notification, as many as 37·6 per cent., of the total deaths from tuberculosis registered during the year being notified in the same year that death occured. Last year the figure was 38·2 per cent., so that there was a slight improvement. Once more I would remind medical practitioners that failure to notify a case of tuberculosis of whatever type renders them liable to prosecution. That course I have already threatened to take with some of the worst offenders and shall take unless they mend their ways. With the facilities at hand for making a diagnosis there is no excuse for failure to notify. Any practitioner who is in doubt as to the nature of a case can have that doubt set at rest by referring the case to the Tuberculosis Dispensary. Unless cases are notified promptly nothing can be done to help the sufferers or to protect others from the infection, besides which every case which remains unnotified vitiates the statistics and renders the records inaccurate.

An analysis of the notifications in age groups will be found in the table on page 87.

Of the total cases of pulmonary tuberculosis notified during the year 15·1 per cent., were children under 15 years of age and 84·9 per cent., were persons over 15 years, the corresponding figures for the previous year being 17·0 per cent., and 83·0 per cent. As regards the non-pulmonary type of the disease, 57·0 per cent., were children under 15 years of age and 43·0 per cent., persons over 15 years. The corresponding figures for the previous year were 56·8 per cent., and 43·2 per cent.

It is pleasing to note that for the second year in succession there was a fall in the incidence of pulmonary tuberculosis amongst children under 15 years. For a time it looked as though the age distribution of this type of the disease was undergoing a change and shifting its attack from the older to the younger age periods. The swing in the opposite direction is re-assuring. Here again the improvement on the statistics—which I trust will be sustained —is probably due to the efforts of the Tuberculosis Dispensary in ferreting out contacts and seeing that any with suspicious signs are brought under treatment without delay.

The boarding out system for contacts so much spoken of in America has not been tried to any extent in this country and only

The following tables show the number of notifications of tuberculosis received during the year.

PULMONARY.

Ages.	-1	1-5	5-15	15-25	25-35	35-45	45-55	55-65	65+	Total.
Males ..	..	5	61	70	51	92	74	45	11	409
Females	..	6	44	106	95	60	24	16	6	357
Totals..	..	11	105	176	146	152	98	61	17	766

NON-PULMONARY.

Ages.	-1	1-5	5-15	15-25	25-35	35-45	45-55	55-65	65+	Total.
Males ..	4	14	34	13	6	4	5	2	1	83
Females	..	11	27	24	6	3	1	2	1	75
Totals ..	4	25	61	37	12	7	6	4	2	158

TUBERCULOSIS.

Year.	DEATHS.						NOTIFICATIONS.					
	Pulmonary tuberculosis.		Non-pulmonary tuberculosis.		All forms tuberculosis.		Pulmonary tuberculosis.		Non-pulmonary tuberculosis.		All forms tuberculosis.	
	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.	Cases.	Case-rate.	Cases.	Case-rate.	Cases.	Case-rate.
1917	674	1·54	280	0·64	954	2·18	1,081	2·47	336	0·77	1,417	3·24
1918	705	1·65	257	0·60	962	2·25	1,238	2·90	241	0·56	1,479	3·46
1919	542	1·26	177	0·41	719	1·67	1,076	2·50	208	0·48	1,284	2·98
1920	552	1·23	146	0·33	698	1·56	962	2·14	209	0·47	1,171	2·61
1921	519	1·11	122	0·26	641	1·37	867	1·86	234	0·50	1,101	2·36
1922	533	1·14	120	0·26	653	1·40	824	1·77	172	0·37	996	2·14
1923	515	1·10	122	0·26	637	1·36	1,002	2·13	197	0·42	1,199	2.55
1924	513	1·09	144	0·31	657	1·40	1,191	2·53	180	0·38	1,371	2·91
1925	511	1·08	88	0·19	599	1·27	1,720	3·64	149	0·32	1,869	3·96
1926	477	1·01	108	0·23	585	1·24	1,299	2·74	161	0·34	1,460	3·08
1927	457	0·96	101	0·21	558	1·17	811	1·70	155	0·32	966	2·02
1928	453	0·95	89	0·19	542	1·14	766	1·61	158	0·33	924	1·95

to an insignificant extent in Leeds. I think it has possibilities and would strongly recommend that it be given a trial. With its back-to-back houses, its insanitary property, and its overcrowding, there is no lack of fertile soil for the growth of the seeds of the disease in Leeds, and young people living in constant association with infective persons can hardly escape themselves becoming infected and swelling the total of those for whom accommodation must be found in the sanatorium. By removing these contacts to another and healthier environment such a disaster may be circumvented and much unnecessary suffering saved.

The total deaths from tuberculosis of all types during the year numbered 542, of which 323 were males and 219 females. Last year the total was 558 comprising 335 males and 223 females. Of the total pulmonary tuberculosis accounted for 453, or 83·6 per cent., and non-pulmonary for 89, or 16·4 per cent. The death-rate from pulmonary tuberculosis was 0·95 and from non-pulmonary 0·19, making a total death-rate from all forms of the disease of 1·14. These rates represent a decrease of 0·01 in the pulmonary and 0·02 in the non-pulmonary and on the total a decrease of 0·03 as compared with the corresponding figures for the previous years. Set against the average rates for the previous five years, they represent a decrease of 0·10 and 0·05 in the pulmonary and non-pulmonary rates respectively, and on the total rate a decrease of 0·15.

The provisional death-rates for England and Wales for the year was, for pulmonary tuberculosis 0·76, for non-pulmonary 0·17, making a total death-rate for all forms of 0·93. On comparing these with the rates for Leeds it will be noted that the Leeds rates were higher by 25·0 per cent., in the case of pulmonary tuberculosis, by 11·8 per cent., in non-pulmonary, and by 22·6 per cent., in all forms of the disease.

As regards the death-rate for pulmonary tuberculosis it will also be observed on referring to the table on page 33 that amongst the large towns of England and Wales, Leeds occupies eighth place in order of merit, the towns having lower rates being London, Birmingham, Sheffield, Bristol, West Ham, Bradford and Stoke-on-Trent.

From the table on page 87 it will be noted that the year 1928 is the sixth successive year in which a decrease in the death-rate from pulmonary tuberculosis falls to be recorded, and when the average of the two previous quinquennia is compared the improvement becomes even more noticeable. The achievement is one of which the city may be proud especially in view of its undoubted handicap in the matter of housing and sanatorium accommodation.

The wards with the highest death-rates from pulmonary tuberculosis were South, West, East, North-East and Bramley, whilst

those with the lowest were New, Mill Hill, Headingley, New Wortley and Brunswick. Generally speaking, the most congested wards are the wards with the highest death-rate from tuberculosis, South, West and East rank amongst the poorest and most densely populated but North-East and Bramley are neither very poor nor very congested. Why they should be numbered with the South, West and East is hard to explain, unless it be a mere chance that last year they happened to have a higher rate from tuberculosis than usual. Poverty and tuberculosis are closely allied to each other but the one does not necessarily connote the other. If however overcrowding and insanitation join the unholy alliance the disease is almost inevitable. Better houses, more fresh air, better food and more of it, are the desiderata necessary for those living under the threat of the disease in the congested areas of the city, but how to secure these essentials for them is a problem for which a solution has yet to be found.

The tables on pages 90 and 91 give the analysis of the deaths in the various wards and age groups.

The table on page 94 shows the occupation of persons notified during the year as suffering from tuberculosis of all forms and those registered as dying from the disease.

Factory-in-the-Field.—In my last report I described how the Factory-in-the-Field came to be acquired and the purpose it was intended to subserve. It has now been in active operation over a year and though the time is too short to warrant any definite statement being made as to its ultimate failure or success one is able to say that it is shaping well and bids fair to achieve what was expected of it. There are some who desire to see a return in pounds, shillings and pence. They will be disappointed. This is not a commercial venture any more than are the Institute for the Blind or the Mental Deficiency Colony. It is part of a scheme to restore men and women suffering from a disease more destructive of working capacity even than blindness to a condition of health which will enable them to be self supporting. It was never anticipated that it would be a financial success, indeed the measure of its failure to make a profit may be the best proof that it is fulfilling the object for which it was established. So long as the loss can be kept within reasonable limits there will be no cause for complaint. When the alterations to the buildings at present in progress are completed conditions will be more comfortable for the workers and it will be possible to keep them under closer surveillance, and so ensure that their health is adequately safeguarded.

A full and detailed report of the Factory for the year is given on page 112.

Pulmonary Tuberculosis.

Ages at Death.

1928.	-5	5-10	10-15	15-20	20-25	25-45	45-65	65+	Total.
Males ..	2	1	1	10	16	113	108	20	271
Females	5	..	6	17	32	84	33	5	182
Totals	7	1	7	27	48	197	141	25	453
Average 10 years 1918-1927	19	9	17	54	61	214	137	21	532

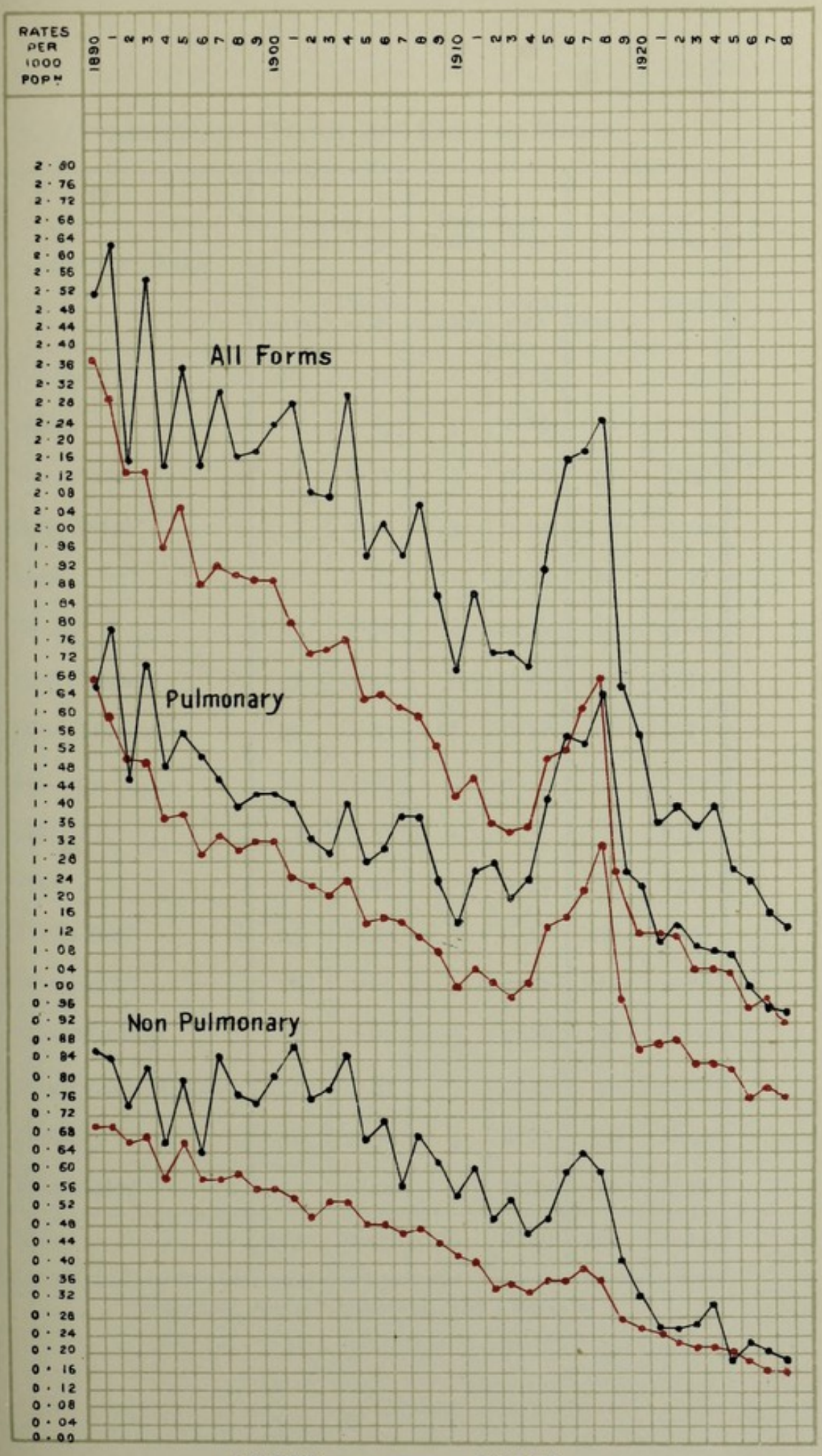
Non-Pulmonary Tuberculosis. Deaths.

1928	Tubercular meningitis.	Abdominal.	Bones and Joints.	Other tuberculosis.	Total.
Males ..	23	12	2	15	52
Females ..	14	5	3	15	37
Totals ..	37	17	5	30	89

Ages at Death.

1928.	-5	5-10	10-15	15-20	20-25	25-45	45-65	65+	Total.
Males ..	23	12	6	2	..	4	5	..	52
Females	15	5	1	7	1	5	3	..	37
Totals ..	38	17	7	9	1	9	8	..	89
Average 10 years 1918-1927	56	17	12	14	8	16	12	4	139

TUBERCULOSIS DEATH RATE. - 1890 - 1928.



LEEDS ——— BLACK.

ENGLAND & WALES — RED.

Tuberculosis—Deaths and Rates in Wards.

Municipal Ward.	Pulmonary Tuberculosis.		Non-Pulmonary Tuberculosis.		All Forms Tuberculosis.	
	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.
Central	16	1·27	2	0·16	18	1·43
North	39	0·89	7	0·16	46	1·05
North-East	48	1·31	3	0·08	51	1·40
New Ward* ..	3	0·24	3	0·24	6	0·49
East	48	1·33	14	0·39	62	1·72
South	23	1·78	4	0·31	27	2·09
East Hunslet ..	37	0·98	6	0·16	43	1·14
West Hunslet ..	30	0·83	10	0·28	40	1·10
Holbeck	28	0·95	5	0·17	33	1·12
Mill Hill	2	0·38	..	..	2	0·38
West	31	1·41	7	0·32	38	1·73
North-West	25	0·79	5	0·16	30	0·95
Brunswick	16	0·67	5	0·21	21	0·88
New Wortley ..	11	0·61	5	0·28	16	0·89
Armley and Wortley	31	0·83	5	0·13	36	0·96
Bramley	32	1·30	3	0·12	35	1·42
Headingley ..	33	0·61	5	0·09	38	0·70
City	453	0·95	89	0·19	542	1·14

*Roundhay, Seacroft, Shadwell, and Crossgates.

The housing conditions of 891 of the 924 cases of tuberculosis (all forms) notified, are shown in the table subtended :---

Rooms in house.	Through house.	Percentage of total throughs.	Back-to-back house.	Percentage of total back-to-back.	Percentage of total cases.
1 room	9	3·5	7	1·1	1·8
2 rooms	8	3·1	123	19·3	14·7
3 rooms	33	12·9	244	38·4	31·1
4 rooms	65	25·5	203	31·9	30·1
5 rooms	71	27·9	44	6·9	12·9
6 rooms	50	19·6	14	2·2	7·2
7 or more rooms	19	7·5	1	0·2	2·2
Total ..	255	100·0	636	100·0	100·0

In addition to the 255 through houses and 636 back-to-back houses, there were 33 cases notified from common lodging houses, etc., making a total of 924 cases of all forms of tuberculosis notified during the year.

The sub-joined table indicates the type of house occupied by 193 persons who were notified during 1928 as suffering from tuberculosis of all forms and who died during the year :—

Rooms in house.	Through house.	Percentage of total throughs.	Back-to-back house.	Percentage of total back-to-back.	Percentage of total deaths.
1 room	..	..	1	0·7	0·5
2 rooms	1	2·1	23	15·9	12·4
3 rooms	3	6·2	68	46·9	36·8
4 rooms	16	33·3	44	30·3	31·1
5 rooms	12	25·0	5	3·4	8·8
6 rooms	15	31·3	4	2·8	9·9
7 or more rooms	1	2·1	..	..	0·5
Total ..	48	100·0	145	100·0	100·0

In addition to 48 through houses and 145 back-to-back houses, there were 11 deaths in which the home address was given as common lodging houses, etc.

DEATHS FROM ALL FORMS OF TUBERCULOSIS IN 1928 WITH YEAR OF NOTIFICATION.

Year of Notification.	No. dying in 1928.	Percentage of total deaths.
1906	1	0·2
1910	3	0·6
1912	2	0·4
1913	2	0·4
1914	3	0·6
1915	5	0·9
1916	1	0·2
1917	4	0·7
1918	7	1·3
1919	6	1·1
1920	4	0·7
1921	4	0·7
1922	6	1·1
1923	15	2·8
1924	12	2·2
1925	14	2·6
1926	59	10·9
1927	98	18·1
1928	204	37·6
Not notified ..	80	14·7
Died outside City	12	2·2
Total ..	542	100·0

NOTIFICATIONS AND DEATHS FROM ALL FORMS OF TUBERCULOSIS OCCURRING IN 1928 CLASSIFIED ACCORDING TO OCCUPATION.

Occupation.	Notifications.		Deaths.	
	Number.	Percentage of total Notifications.	Number.	Percentage of total deaths.
Textile Workers ..	193	20·9	90	16·6
Leather ,, ..	17	1·8	17	3·1
Metal ,, ..	75	8·1	64	11·8
Coal ,, ..	14	1·5	17	3·1
Stone ,, ..	22	2·4	17	3·1
Wood ,, ..	13	1·4	8	1·5
Other dusty Trades ..	33	3·6	22	4·1
Printers	21	2·3	14	2·6
Clerks, Typists, etc. ..	42	4·5	20	3·7
House Workers ..	125	13·5	78	14·4
Nurses	7	0·7	4	0·7
Food Trades, etc. ..	34	3·7	36	6·6
Labourers	45	4·9	38	7·0
Out-door Worker ..	33	3·6	21	3·9
Various	37	4·0	15	2·8
School Age	168	18·2	33	6·1
Infants	37	4·0	45	8·3
No Occupation ..	8	0·9	3	0·6
No Trace	..	..	..	..
Total ..	924	100·0	542	100·0

REPORT ON THE WORK OF THE TUBERCULOSIS DISPENSARY AND SANATORIA

BY

NORMAN TATTERSALL, M.D., B.S., Chief Clinical Tuberculosis Officer.

Central Tuberculosis Dispensary.—Statistical details of the work of the Dispensary during 1928 are given on pages 98 and 99.

A comparison of these tables with those of 1927 brings out certain points which are worthy of comment. In the first place there has been an increase of 18 per cent. in the number of cases referred for an opinion by the doctors of the city as compared with the previous year. The actual number referred (excluding contacts) was 1,207 for 1928 and 1,021 for 1927.

It is gratifying to notice that an increasing proportion of cases are referred for an opinion before notification, indicating that practitioners are availing themselves more fully of the diagnostic facilities of the Dispensary. This co-operation is also evidenced in the increased number of consultations with practitioners and visits to examine new patients unable to attend at the Dispensary. The figure under this head rose from 560 visits in 1927 to 681 in 1928, an increase of 21·6 per cent.

Reference was made in last year's report to the large number of old cases on the books of the Dispensary who are reported to be quite well but unwilling to attend for examination—for the most part because they feel well and are at work. The Regulations of the Ministry of Health permit such cases to be written off as " no longer desiring public medical treatment," but if this is done their names still remain on the " notification " register, further accentuating the disproportion between cases on the " dispensary " register and those on the " notification " register. Strenuous efforts have therefore been made to get these cases to attend the Dispensary, and, where the results of examination justified it, to write them off as " cured " or " diagnosis not confirmed," according to the clinical findings. This revision of old cases has enabled some 1,200 names to be removed from both the dispensary and notification registers under one or other of the above headings.

Accuracy of diagnosis has been the chief aim of the Dispensary work. The more careful and complete the investigation of a case the less often is tuberculosis found to be the cause of symptoms. Thus, during 1928 only 41 per cent, of the cases referred (including contacts) were found, within one month of their first examination, to be suffering from tuberculosis, as compared with 47 per cent. and 60 per cent. in 1927 and 1926 respectively.

Insistence on repeated sputum examinations has also materially helped to diminish the disproportion between sputum positive and sputum negative cases. In 1928 approximately 50 per cent. of the diagnoses were confirmed bacteriologically, as compared with 39 per cent. and 21 per cent. respectively in the two previous years. Re-examination of the sputum of many old cases who were clinically positive but bacteriologically negative has proved many of them to be also bacteriologically positive, and at the end of the year, although the total number of cases on the dispensary register was lower, the number of positive sputum cases had risen from 900 in 1927 to 976 in 1928. Too much stress cannot be laid on the importance of knowing whether a patient is sputum positive or not, as it is by the positive cases that the seeds of the disease are sown, and concentration on known foci of infection must be one of the surest methods of preventing spread.

There yet remains however a more subtle danger in the unknown or unrecognised sputum positive case. These cases are often in fair health, able to work, and often considered by their own doctors to be suffering only from periodical attacks of bronchitis, asthma, or even "smoker's cough." During the past year a number of such cases have been brought to light by the systematic examination of adult contacts in homes where cases of tuberculosis have occurred amongst the children. An even more striking example of the danger of the "unrecognised" case came to light through an enquiry which was instituted because three clerks in one office had developed tuberculosis within a comparatively short period. The enquiry was carried out at the request of the employers, who were naturally alarmed at the sequence of cases.

The facts were briefly as follows :—The first case to be reported was that of a junior typist, who resigned her post when her doctor found she was suffering from pulmonary tuberculosis and notified her case in March, 1927. She had worked two years in the office. The parents refused to let her be seen at the Dispensary but the doctor reports that the case, which was in an early stage when first seen by him, is one of actively progressive tuberculosis with a positive sputum. In March, 1928, the senior clerk, who had been 22 years in the office except for a period of war service, was referred to the

Dispensary. He then had very advanced disease, obviously of old standing, with cavitation and positive sputum. He died three months later. In October 1928 a junior clerk who had worked ten years with the firm was referred to the Dispensary for treatment for hæmoptysis. Until two months previous his health had been excellent. The disease was quite definite, and confirmed by X-ray to be in an early stage.

Careful enquiry into the history of these three cases showed that the first and third were apparently early cases with a short history of illness when they gave up work. The chief clerk, however, had suffered with a cough ever since leaving the army in 1918 and was frequently off work for a few days at a time with " malarial attacks." In 1924 he had pleurisy, after which his cough was worse. He frequently had bad fits of coughing and would then go out to the lavatory, presumably to expectorate. As he was feeling so ill he changed his doctor and was then found to have tuberculosis, so advanced, that he died within four months of giving up work. His duties as chief clerk brought him into closer contact with the two cases mentioned above than with the other clerks in the office. His desk immediately adjoined that of the junior clerk, and he would stand for one or two hours a day over the junior typist's desk dictating letters. Another possible source of transmission was a series of triplicate order books in use in the office to which all the clerks had frequently to refer, especially the chief clerk. In turning over the leaves it was noticed that the clerks would moisten the finger on the tongue after turning over three or four leaves, this especially had been a practice of the chief clerk.

The office was a modern and well ventilated one, but it was obvious that for some years before he gave up work the chief clerk must have been spraying tubercle bacilli around his corner, especially on the two unfortunate individuals who also contracted the disease, and there can be little doubt that he was the direct source of the massive infection which subsequently appeared in both. Now in this case the doctor who for years had attended the senior clerk either failed to suspect tuberculosis—although on examination it seemed unmistakable—or, if he knew the case to be one of tuberculosis he failed to advise and warn the patient, as when first seen at the Dispensary he was totally unaware of the nature of his illness.

Early notification, treatment and especially education of the patient would in all probability have prevented the spread to others. Such a case is a striking object lesson of the danger of the unknown or unrecognised case.

Beds for Advanced Cases.—For a period of 4½ months, from June to October 1928, one of the unoccupied blocks at the Seacroft Isolation Hospital was taken over for the treatment and prolonged

EXTRACTS FROM THE MINISTRY OF HEALTH ANNUAL RETURN. 37/T. Table I. FOR THE YEAR ENDED 29th DECEMBER, 1928. SHOWING UNDER HEADINGS A. AND B. THE STATE OF DIAGNOSIS AT ONE MONTH FROM DATE OF FIRST ATTENDANCE.

	PULMONARY.				NON-PULMONARY.				TOTAL.			
A. New Cases examined during the year (excluding contacts).	Adults.		Children.		Adults.		Children.		Adults.		Children.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Definitely Tuberculous	261	209	18	17	23	23	33	27	284	232	51	44
Doubtfully Tuberculous	..	..	..	..	..	..	..	..	133	86	53	61
Non-Tuberculous	..	..	..	..	..	..	..	..	116	77	23	34
TOTALS	261	209	18	17	23	23	33	27	533	395	127	139
B. New Contacts examined during the year:—												
Definitely Tuberculous	7	13	16	10	..	1	4	3	7	14	20	13
Doubtfully Tuberculous	..	..	..	..	..	..	..	..	17	34	44	41
Non-Tuberculous	..	..	..	..	..	..	..	..	28	69	76	60
TOTALS	7	13	16	10	..	1	4	3	52	117	140	114
C. Cases written off Dispensary Register :– Cured	183	196	26	16	34	27	19	13	217	223	45	29
Diagnosis not confirmed or non-tuberculous (including cancellation of cases notified in error)									395	406	197	197
TOTALS									612	629	242	226

Number of Persons on Dispensary Register:—

Diagnosis completed	5,706
Diagnosis not completed	238
TOTAL	5,944

Patients (excluding contacts) Examined at Central Tuberculosis Dispensary from January 1st, 1928 to December 29th, 1928.

PULMONARY TUBERCULOSIS.

	New patients.				Number bacteriologically positive.				Number clinically positive. but not T.B. +.				Number found to be Non-tubercular, lost sight of, etc.				Still under observation.				Number admitted to Sanatoria.			
	M.	F.	B.	G.	M.	F.	B.	G.	M.	F.	B.	G.	M.	F.	B.	G.	M.	F.	B.	G.	M.	F.	B.	G.
Insured	444	225	..	..	141	61	..	..	100	72	..	..	170	80	..	..	33	12	..	..	174	67	..	..
Non-Insured	66	147	91	111	27	38	2	2	8	51	21	18	26	53	51	74	5	5	17	17	24	38	47	30

OTHER FORMS OF TUBERCULOSIS.

	New patients.				Glands.				Bones and joints.				Abdominal.				Others.				Number admitted to Sanatoria.			
	M.	F.	B.	G.	M.	F.	B.	G.	M.	F.	B.	G.	M.	F.	B.	G.	M.	F.	B.	G.	M.	F.	B.	G.
Insured	15	14	..	..	5	3	..	..	2	8	..	..	5	..	..	..	3	3	..	..	1	4	..	..
Non-Insured	8	9	36	28	4	4	19	14	3	3	6	1	..	1	1	1	1	1	10	12	1	..	18	5

Total attendances at Central Tuberculosis Dispensary for—

(*a*) Light treatment	8,269
(*b*) Other special treatments ..	656
(*c*) Ordinary clinics :	11,394
	20,319

Total Number of Clinical Examinations (included in attendances) 7,677

Number of cases making the clinical attendances (excluding Light and Special treatments) 3,981

isolation of advanced infective cases. The severe outbreak of scarlet fever in the City rendered it necessary to evacuate these beds in October.

During the brief period it was available this accommodation proved of the greatest value. Although the outlook for them was in most instances a hopeless one the patients were wonderfully happy.

Most of the cases were transferred to Seacroft from Killingbeck where the nursing of very advanced cases has always been a difficult problem because of the large size of the wards and the consequent disturbance of less poorly patients by those in extremis.

It is to be hoped that before long this accommodation will once more become available as the experiment was certainly a very successful one.

Dental Section.—The appointment of Mr. W. L. Fleming, L.D.S., as dental officer to the Tuberculosis and Maternity and Child Welfare Services enabled a dental department to be started in June, 1928.

Mr. Fleming divides three days per week between this Dispensary and Killingbeck Sanatorium—a half day once a month being devoted to the children at "The Hollies."

Every definitely diagnosed case is referred to the dentist who decides as to the treatment required. The main object is to provide a clean mouth, and such work as cannot be carried out before admission to sanatorium is completed after the patient is admitted.

A scheme has been drawn up for the provision of dentures and other dental work. In the case of patients who are entitled to National Health Insurance benefits it is often possible to recover the whole cost from the approved society. For non-insured patients, a scale has been approved, based on the income and number in family, by which a proportion of the cost is borne by the patient. The work of assessing the patient's rate of contribution is being carried out by the Secretary of the Care Committee. This part of the scheme will come into operation early in 1929, but in the meantime much excellent work has been carried out both at the Dispensary and at Killingbeck Sanatorium. For the most part patients are quite glad to avail themselves of this opportunity for dental treatment, its good results being especially marked in patients undergoing sanatorium treatment.

X-Ray Work.—During the year 1,066 films were taken at the Dispensary. Further experience fully confirms the opinion previously expressed as to the extreme value of this work in diagnosis, a well-taken film being considered a necessary part of the examination in every doubtful case.

The taking and reading of so many films adds considerably to the work of the department and my special thanks are due to Dr. Hearn, who takes the majority of the films, for the general excellence and high standard of this work.

In addition to the routine work of the department a special series of 52 films was taken of the chests of asbestos workers in connection with an enquiry now in progress by the medical staff of the Home Office.

Artificial Sunlight Treatment.—During 1928 some 200 patients received Sunlight treatment at the Dispensary making a total of 8,269 attendances. At the end of the year 102 patients were still under treatment. Many cases through inability or unwillingness to maintain regular attendances did not receive treatment for a long enough period to draw any conclusions as to its effect. During the latter half of 1928, however, 46 patients ceased attending after treatment of sufficient duration to be worthy of detailed report as follows :—

(1) Pulmonary Tuberculosis.—Those treated were all chronic cases with no activity or fever, but in poor general condition. Four such cases completed treatment after periods varying from three to twelve months. No definite improvement was noted in any and the gain in weight was practically nil. These patients were carefully watched as regards temperature records and none of them was made any worse by the treatment.

(2) Hilus Tuberculosis.—Twenty cases in this group completed treatment. One case complicated with asthma did excellently after twelve months treatment. Pigmentation was deep and there had been no attacks of asthma for three months before treatment was discontinued. In six other cases there was definite evidence of improvement as shown by disappearance of symptoms, increased energy, and gain in weight. In the remaining thirteen no definite improvement was noted ; in only one of these was the gain in weight definitely greater than in the same period preceding treatment, and in this case pigmentation was deep.

(3) Tubercular Glands.—(*a*) With skin involvement.—Three cases completed treatment, two of whom had very extensive disease, the other more localised. All were completely healed with minimal scarring after periods of treatment of 13 months, 12½ months and 9 months respectively. One other case after five months treatment was greatly improved and the sinuses dry, but the patient discontinued treatment to return to work.

(*b*) Without skin involvement.—Five cases completed treatment which had lasted from three to twelve months according to the extent of the disease. All did well and the glands had entirely subsided on discharge. Two of them required aspiration during treatment. Four other cases ceased treatment on account of work before the glands had subsided, but all of these showed definite improvement.

(4) Bones and Joints.—Eight cases suffering from bone and joint tuberculosis completed or discontinued treatment after periods of 4½ to 12 months. All were very much improved.

(5) Abdominal Tuberculosis.—One case only in this group has so far completed treatment. She had a discharging abdominal sinus following operation for tuberculosis of the caecum, the diagnosis being confirmed at operation. After 11½ months treatment pigmentation was deep, there was complete absence of symptoms, sound healing, and the caecal tumour had entirely disappeared.

General Remarks.—The details of the cases given above confirm the opinion already formed that in tuberculous adenitis bone and joint disease, and abdominal tuberculosis, artificial light treatment is of definite value. Our experience, so far, of its use in pulmonary and hilus cases does not suggest that on present lines such treatment is likely to produce any striking results. Dr. Maclennan has continued to supervise the work of the light department and my thanks are due to her for the excellent way in which this has been carried out.

Surgical Tuberculosis.—There was a marked increase in the number of new cases of non-pulmonary tuberculosis coming under treatment during the year, the figure being 110 as compared with 77 in 1927.

The additional cases were almost entirely children. This does not mean an increase of this type of disease in the city, and is mainly due to cases referred to the General Infirmary being passed on to the Dispensary for treatment. It is probable that the bulk of the cases of surgical tuberculosis in Leeds are still centred on the Infirmary rather than on the Dispensary.

Many such cases only come to our notice after they have spent some time in the Infirmary and our aid is sought to provide special appliances or extended treatment in a special orthopaedic hospital. As these cases generally require a period of two years or more in hospital and our available beds only number thirty, it is clear that when a batch of such cases is suddenly referred to us there are very great difficulties in finding accommodation for them.

The need for the speedy development of the Elmet Hall Scheme grows daily more apparent, the more so as it is in this branch of tuberculosis work that the most strikingly successful results are obtained.

"CONTACTS" EXAMINED AT CENTRAL TUBERCULOSIS DISPENSARY FROM JANUARY 1st, 1928 to DECEMBER 29th, 1928.

	New Contacts Examined.	Found Sputum T.B+	Clinically definite, but sputum negative.	Diagnosed Non-Pulmonary Tubercle.	Found to be Non-Tubercular, lost sight of, etc.	Remaining under observation.
Males	52	2	6	..	35	9
Females ..	117	3	12	1	87	14
Boys	140	..	26	4	93	17
Girls	114	..	16	4	79	15
Total ..	423	5	60	9	294	55

120 cases remaining under observation from 1927 were re-examined, with the following results:—

Definitely diagnosed as tubercular	19
Marked off as non-tubercular, died, lost sight of, etc.	93
Remaining under observation	8

Total examinations made = 780 (543 cases).

During 1928, 14 cases of surgical tuberculosis were sent to The Marguerite Home, Thorparch and six to Lord Mayor Treloar's Hospital at Alton. In addition 27 cases were admitted to Killingbeck and 13 cases of a mild type to "The Hollies."

The total number of such cases treated at Thorparch was 34, at Alton 16, at Killingbeck 42, and at "The Hollies" 17.

Contacts.—The number of new contacts examined was approximately the same as last year. Facilities have been offered in many cases for contacts to attend for examination at evening clinics but a large number refuse to come, usually because they "feel well" and fail to appreciate the risks they have incurred and the value of early preventive measures.

A detailed analysis of the examination of new contacts is given in the table on page 103.

Mortality of Children in Tuberculous Households.—The investigation into this subject is still in progress. As explained in last year's report a card is made out for every baby born into a home where there is a notified case of tuberculosis and details are entered in each succeeding year as to the state of health or cause of death of these children. By the end of 1929 about a thousand such cards will be available.

A preliminary analysis of the mortality of the babies born in 1925, 1926 and 1927 has recently been carried out. Out of 608 babies entered on the cards in these three years, all but five were traced at the end of the first year of life. Of these, 488 were contacts of sputum negative cases and 115 contacts of sputum positive cases.

Grouping them all together their state at the end of the first year was as follows:—

Dead (tuberculosis 5, other causes 37)	42
Ill with tuberculosis	5
Delicate	103
Alive and Well	453
	603

This represents an infantile mortality per thousand births of 70 whereas for the whole of Leeds over the same period the figure was 88.

When analysed separately the group of infants who were contacts to sputum positive cases show a death-rate of 95·6 per thousand births, and for those in contact with sputum negative cases the rate was 63·5.

The number of children observed in the succeeding years of life is as yet hardly large enough to draw any definite conclusions but the figures so far available indicate that the low mortality in the first year of life as compared with the general population is not maintained, and that the mortality, especially from tuberculosis, in the succeeding years is significantly higher than that among the "control" population. It appears surprising that the death-rate in the first year of life in the total group is considerably lower than that of the "control" population, and that even in the group in contact with sputum positive cases the death-rate is not significantly higher. These findings however are generally in accord with the results obtained in a similiar investigation recently carried out in Lancashire.

Dr. Lissant Cox who organised the Lancashire enquiry suggests that the fact of the supervision of the tuberculous household by medical and nursing staffs may explain what is otherwise a remarkable finding.

It will be several years before the present investigation can be completed and the above details are only submitted as a rough indication of the trend of the enquiry.

Domiciliary Work.—Reference has already been made to the increased number of visits to patients at their homes by the medical staff. The nurse visitors made a total of 20,680 visits of which 1,038 were for environmental reports, 1,029 to "contacts," and 224 to houses where deaths had occurred.

Minor Surgical Operations.—A total of 656 attendances were made by patients for special surgical measures, such as applications of splints and plaster, aspirations of abscesses, etc. Artificial pneumothorax refills amounted to 22.

Clerical.—There has again been a considerable increase in the number of National Health Insurance Forms G.P. 36 sent to practitioners and it is very satisfactory to record that over 95 per cent. of these were completed and returned.

Reports to doctors on the results of examinations, etc., amounted to 5,653; reports to the Education Department on the condition of school children 1,432; letters to, and forms completed for, the Ministry of Pensions 492; and correspondence with patients, institutions, etc., accounted for 2,547 letters and 14,344 appointment and other postcards.

Institutions.—The total accommodation at "The Hollies," Killingbeck, and Gateforth was the same on December 31st, 1928 as the previous year, namely, 310 beds (138 males, 78 females and 94 children).

The "Hollies" Sanatorium School.—The accommodation at this institution has been kept fully occupied throughout the year and considering the very severe epidemic of scarlet fever which has existed in the City during the winter months we have been fortunate to keep free from any serious outbreak of infection.

There has been no change in the teaching staff, and the arrangement of the children into separate classes of younger and older children has been continued, with satisfactory results.

The school session is four hours daily, and a record is kept of time spent out of doors.

The exceptionally good Summer of 1928 made it possible for the children to spend more time than usual in the open air. They were gradually allowed to dispense with clothing and many of them achieved an exceptional degree of skin pigmentation, with a correspondingly marked improvement in their general condition.

The garden plot has continued to be a source of physical exercise and practical instruction. Owing to the kindness of the Parks Committee a further piece of ground has been taken over for recreation purposes. This will afford the children more room for drill and organised games and it is also hoped shortly to install a large plank swing as an additional means of enjoyment.

The progress made by the children both physically and mentally continues to be very satisfactory and reflects the utmost credit on the devotion and interest shown by the teachers.

The figures as regards school sessions, attendances, etc., as supplied by the Head Teacher are :—

The number of children admitted to the school register was 123 (boys 57 and girls 66).

The number of school sessions was morning 253, afternoon 252, total 505.

The total number of attendances was 17,438, and the average attendance per session was 35.

The average number on the school register was 41.

"The Hollies" Sanatorium School.

PERIOD ENDED 29th DECEMBER, 1928.

(Ministry of Health Form T.54 (B)—modified).

			Remaining Jan. 1st, 1928.	Admitted.	Discharged.	Remaining Dec. 29th, 1928.
Pulmonary	Boys	Under 5	1	1	2	..
		Over 5	9	39	38	10
	Girls	Under 5	1	2	2	1
		Over 5	12	46	41	17
Non-Pulmonary	Boys	Under 5	..	1	..	1
		Over 5	3	6	5	4
	Girls	Under 5	..	1	1	..
		Over 5	1	5	5	1
Observation Cases	Boys	Under 5	1	..	1	..
		Over 5	1	7	5	3
	Girls	Under 5	..	..	..	..
		Over 5	4	12	13	3
Totals			33	120	113	40

ANALYSIS OF CASES DISCHARGED.

DURATION OF RESIDENTIAL TREATMENT.

(Ministry of Health Form T.55—modified).

			Pulmonary.			Non-Pulmonary.			Total.	
			Disease Quiescent.	Disease Improved.	Disease not Improved.	Disease Quiescent.	Disease Improved.	Disease not Improved.		
Under 3 months.	Boys	Under 5	..	..	..	..	..	..	..	42
		Over 5	10	7	..	1	1	..	19	
	Girls	Under 5	..	..	..	..	1	..	1	
		Over 5	12	6	1	2	1	..	22	
3–6 months.	Boys	Under 5	1	1	..	..	..	..	2	45
		Over 5	12	7	..	2	..	..	21	
	Girls	Under 5	..	2	..	..	..	..	2	
		Over 5	12	6	..	1	1	..	20	
6–12 months.	Boys	Under 5	..	..	..	..	..	..	..	5
		Over 5	..	1	..	..	1	..	2	
	Girls	Under 5	..	..	..	..	..	..	..	
		Over 5	3	..	..	..	..	..	3	
Over 12 months.	Boys	Under 5	..	..	..	..	..	..	..	2
		Over 5	..	1	..	..	..	..	1	
	Girls	Under 5	..	..	..	..	..	..	..	
		Over 5	1	..	..	..	..	..	1	
Totals			51	31	1	6	5	..	94	
Observation and Negative Cases									19	
Grand Total									113	

Killingbeck Sanatorium.

PERIOD ENDED 29th DECEMBER, 1928.

(Ministry of Health Form T.54 (B)—modified).

		Remaining Jan. 1st, 1928.	Admitted.	Discharged	Died.	Remaining Dec. 29th, 1298.
Pulmonary.	Males	79	280	240	39	80
	Females	56	207	176	17	70
	Boys Under 5	1	1	1	..	1
	Boys Over 5	26	77	84	..	19
	Girls Under 5	..	2	2	..	..
	Girls Over 5	16	42	43	2	13
Non-Pulmonary	Males	1	3	3	..	1
	Females	5	6	8	..	3
	Boys Under 5	1	3	3	..	1
	Boys Over 5	4	12	9	1	6
	Girls Under 5	..	..	..	..	..
	Girls Over 5	4	3	3	..	4
Observation Cases.	Males	..	5	4	1	..
	Females	1	..	1	..	..
	Boys Under 5	..	..	..	..	..
	Boys Over 5	1	2	2	..	1
	Girls Under 5	..	1	..	..	1
	Girls Over 5	..	1	..	..	1
	Totals	195	645	579	60	201

ANALYSIS OF CASES DISCHARGED.

DURATION OF RESIDENTIAL TREATMENT.

(Ministry of Health Form T.55—modified).

		Pulmonary.						Non-Pulmonary.			Total.	
		T.B. Minus.			T.B. Plus.							
		Quiescent.	Improved.	Not Improved.	Quiescent.	Improved.	Not Improved.	Quiescent.	Improved.	Not Improved.		
Under 3 months.	Males	15	15	18	4	32	34	1	1	1	121	248
	Females	3	16	13	..	9	41	2	2	1	87	
	Children Under 5	1	..	..	..	..	..	..	1	..	2	
	Children Over 5	18	9	8	..	..	1	..	2	..	38	
3–6 months.	Males	13	21	2	2	34	15	..	..	..	87	227
	Females	12	12	4	..	14	15	1	..	..	58	
	Children Under 5	..	..	..	..	..	..	..	..	2	2	
	Children Over 5	61	14	1	..	..	..	2	2	..	80	
6–12 months.	Males	4	5	..	..	14	10	..	..	..	33	86
	Females	8	9	2	..	8	3	..	1	1	32	
	Children Under 5	1	1	..	..	..	..	..	..	..	2	
	Children Over 5	9	4	..	..	..	..	2	3	1	19	
Over 12 months.	Males	..	1	..	..	1	..	..	..	..	2	11
	Females	1	..	1	..	2	3	..	..	..	7	
	Children Under 5	..	..	..	..	..	..	..	..	..	..	
	Children Over 5	2	..	..	..	..	..	..	..	..	2	
	Totals	148	107	49	6	114	122	8	12	6	572	
Observation and Negative Cases											7	
Grand Total											579	

Killingbeck Sanatorium.—The Medical Superintendent, Dr. W. A. Todd writes :—

The accommodation at this Sanatorium remains the same, viz., 220 beds, allocated as follows :—Male 88, Female 78, Children 54. This accommodation has been fully occupied during the year.

The average length of stay of patients has increased from 94 days last year to 116 days in the year under review. The number of patients who spent 6 to 12 months in sanatorium was 86 as compared with 41 during the previous year. During the year two recreation huts were opened, one for male patients and the other for children. These huts are spacious and well ventilated and constitute a valuable addition to the comfort and well-being of the patients.

A dental room was opened in May, 1928, and a visiting Dental Surgeon attends 1½ days per week. During the period 4th May, 1928, to December 31st, 1928, 459 patients were examined and there were 354 attendances for treatment. The Dental department has proved of great benefit to the patients, a marked improvement being noted in the general condition of many who received dental treatment. The scheme of graduated occupational therapy continues to work smoothly. This scheme promotes a quieter mental outlook in those patients who are fit enough to participate in it.

The total number of cases treated during the year ended December 31st, 1928, was 840. comprising 368 males, 275 females and 197 children, as compared with 944 for the previous year, comprising 417 males, 324 females and 203 children. The average percentage of bed cases for the year was 53.5. All types of the disease were admitted but pulmonary cases predominated.

The conduct of the patients continues to be very satisfactory.

School Report.—During the year ended December 31st, 1928, the school average attendance was 34·4, as compared with 35 during the preceding year.

There has been no change in the teaching staff and the arrangement of the children continued in three divisions, viz., infants, juniors and seniors.

The school session is 4½ hours daily, 2½ hours in the morning and 2 hours in the afternoon. During the summer much time was spent out of doors, with beneficial results.

Useful physical exercise is provided by the cultivation of the school garden ; the children derive much pleasure and instruction from this source.

Specially good results have been achieved in the handicrafts section. many children showing particular aptitude for this work.

The devotion of the teachers to their work has greatly assisted the physical and mental well-being of the children and contributed to the success of the school.

Following are particulars relating to attendances, etc.

The number of children admitted to the school register was 129 (boys 82 and girls 47).

The number of school sessions was morning 235, afternoon 232, total 467.

The total number of attendances was 16,064, and the average attendance per session was 34·4.

The average number on the school register was 38·6.

Killingbeck Sanatorium.

GRADE OF EXERCISE ATTAINED BY ADULT CASES.

	Males.	Females.	Total.
No exercise	36	46	82
Walking	25	48	73
Work — Grade A.	51	26	77
Work — Grade B.	32	5	37
Work — Grade C.	41	1	42
Treatment not completed	58	58	116
Total	243	184	427

Gateforth Sanatorium.—The Medical Superintendent, Dr. H. E. Reburn, writes :—

The table on page 111 shows the number and classification of patients treated during the year; 33·6 per cent. were T.B.+ as compared with 17·7 per cent. in 1927.

The number of bed patients has increased considerably during the year. On an average there are eight a day now as compared with three in 1927. This is due to the admission of a larger number of new cases without previous sanatorium treatment. Such cases are in bed for six to eight weeks even if the temperature and pulse are normal, and longer when either has been raised. In the past Gateforth has dealt mainly with quiescent cases, but now all types except very advanced cases are treated here. I consider this an advantage because those on rest or a small amount of walking see others performing heavy work and thus have proof of what sanatorium treatment can do for them.

The change in the type of case treated has increased the work of the staff and it will be necessary to appoint extra staff next year. I would like to mention that Gateforth has always set a much needed example by employing ex-patients. During 1928 seven of the staff were ex-patients and only one of these had any sick leave. Of these seven, four have done five years service or more.

The Building.—Much of the plaster in the wards was damaged by damp soaking through the walls which with the passage of time have become somewhat porous. The outside of the building has been pointed and the stonework treated with a waterproof solution. The damaged plaster has been removed and the walls re-plastered.

A new dining room is being made next to the kitchen and will be a great improvement. A new bathroom with lavatory and water closet has been made for the patients. The engine used for lighting has given considerable trouble. It is hoped to replace this by a better type in the current year or alternatively to obtain a supply of electricity sufficient to meet the needs of the institution from the Yorkshire Electric Power Co.

Gateforth Sanatorium (Males only).
PERIOD ENDED 29th DECEMBER, 1928.
(Ministry of Health Form T.54 (B) modified).

	Remaining Jan. 1st, 1928.	Admitted.	Discharged.	Remaining Dec. 29th, 1928.
Pulmonary	41	132	128	45
Observation Cases	..	3	3	..
Totals	41	135	131	45

ANALYSIS OF CASES DISCHARGED.
DURATION OF RESIDENTIAL TREATMENT.
(Ministry of Health Form T.55—modified).

PULMONARY DISEASE.							
	T.B. Minus.			T.B. Plus.			
	Quiescent.	Improved.	Not Improved.	Quiescent.	Improved.	Not Improved.	Total.
Under 3 mths.	22	10	11	8	14	3	68
3–6 months ..	18	8	2	5	6	..	39
6–12 months ..	6	5	..	4	3	..	18
Over 12 mths.	1	2	..	..	..	..	3
Total ..	47	25	13	17	23	3	128
Observation and Negative Cases							3
Grand Total							131

GRADE OF EXERCISE ATTAINED ON DISCHARGE BY QUIESCENT AND IMPROVED CASES.

Cases who completed treatment. Grade.						Treatment not completed.	Total.
1	2	3	4	5	6		
..	3	1	6	7	54	41	112

Farm and Garden.—About 300 hens and breeding pens of turkeys, geese and ducks are kept and patients have an opportunity of learning poultry farming.

A pond has been made by the patients for the ducks. This involved the excavation of about 100 tons of soil and the mixing and laying of several tons of concrete. Perhaps because of the novelty of it, this was favourite work and many patients asked to be allowed to help.

The patients do a large amount of work in the garden, such as weeding, raking, hoeing, digging, and mowing, and they seem to derive benefit both physically and mentally from it.

The Factory-in-the-Field.—Work at the Factory under the Corporation scheme was commenced at the end of October, 1927, employment being provided in three occupations, firewood making, brush making and printing.

The employees in the various departments at the end of 1928 were grouped as follows :—

Department.	Tuberculosis.	Non-Tuberculosis.
Firewood	24	5
Brush making	5	2
Printing	5	1
Other Employers	1	5
Totals ..	35	13

Non-Tuberculous Employees.—The number of non-tuberculous employees appears rather high and the reason for their employment is as follows :—

Of the travellers three were taken on as they had previous knowledge of the business and were able to bring in many of their old customers, the other has had sanatorium treatment but the diagnosis is doubtful. The one non-tuberculous bundler was an old employee of the factory taken on as a "pace-maker" and will shortly be replaced ; the same applies to the one non-tuberculous brushmaker. The brush-borer and printing foreman are skilled men and it has not been possible to find tuberculous men for these posts. The three motor drivers have heavy work to do in loading and delivering firewood, as well as in starting up the lorries, and it has been thought advisable to employ non-tuberculous men in these posts.

Tuberculous Employees.—Of these, 14 were sputum positive cases, 20 sputum negative, and 1 non-pulmonary.

Prospects of Return to the Open Labour Market.—Of the fourteen sputum positive cases, six will probably become fit to take up other work ; in the case of the remaining eight this prospect is very doubtful.

Of the twenty sputum negative cases nine will soon have to find other work, six should become fit for it in time, the other five will probably fail to do so on account of dyspnoea, bronchitis, etc.

During the past year one man had to give up work entirely on account of steadily progressing disease, but eight others have found work in the open labour market after periods of work at the factory varying from one to thirteen months. (Average 7·5 months).

Hours of Work.—The full week's work is 48 hours. Monday to Thursday 9 hours daily, from 8 to 12, and 1 to 6. On Friday work finishes at 5 p.m., and Saturday is from 8 to 12.

Suitability of the Occupations for Tuberculous Patients.—The three occupations carried on are all suitable for tuberculous patients. Brushmaking is light work, mainly sedentary, and entails little physical exertion. Its disadvantage is that it takes a considerable time for a man to learn the work to such a degree as to make his employment an economic possibility. The market for the sale of such goods is also one which suffers heavily from foreign competition. Printing also is light work but is rather specialised. All the employees in this department have had experience in the trade prior to their breakdown in health.

Firewood making and bundling employs the largest number of men and possesses the great advantage of being very easily learnt.

The sawyers push light logs through the circular saws.

The labourers wheel logs to the sawyers, distribute chips from the chopping machine to the bundlers, sack up the bundles and assist in loading, etc.

The bundlers pick up handfuls of chips, compress the bundle by a simple foot-actuated mechanism and then tie the bundle with wire. A man of only moderate fitness can easily pick up sufficient skill in a week to enable him to earn a fair wage in his second week. The following figures of the output and earnings of three men recently discharged from sanatorium are illustrative of this fact. Each is a sputum positive case, the Ministry classification being T.B.+, group 2, improved. These men had one week's

work at day rates before being put on to piece-work at 8d., per 100 bundles, and their production in the five succeeding weeks being.

	Weekly output.	Wage. £ s. d.
Case A.	4,350 bundles	1 9 0
	4,700 ,, ...	1 11 4
	4,300 ,, ...	1 8 8
	4,900 ,, ...	1 12 8
	4,950 ,, ...	1 13 0
Case B.	3,950 bundles	1 6 4
	3,350 ,, ...	1 2 4
	3,700 ,, ...	1 4 8
	3,800 ,, ...	1 5 4
	4,150 ,, ...	1 7 8
Case C.	6,250 bundles	2 1 8
	4,900 ,, (in four days)	1 12 8
	6,750 ,, ...	2 5 0
	6,350 ,, ...	2 2 0
	7,500 ,, ...	2 10 0

Loss of time Through Ill-Health.—The amount of time lost by the average worker is not excessive considering the average of physical disability, for this would suggest that the work provided is not suitable for tuberculous men whose condition has become quiescent. The 35 tuberculous men at present on the staff have been employed for varying periods from three weeks to fourteen months, (average ten months). Loss of time through ill-health was most marked in the Firewood Department which certainly is the most strenuous occupation. An analysis of the time lost according to the type of work brings this out clearly.

Firewood Department :

Bundlers	7 lost no time.
	5 lost a total of 208 days.
Labourers	4 lost no time.
	2 lost a total of 23 days.
Sawyers	2 lost a total of 51 days.
Travellers	3 lost no time.
	2 lost a total of 79 days.
Brush Department ..	5 employees lost a total of 11 days.
Printing Department ..	5 employees lost a total of 12 days.

Thus the average time lost amongst the tuberculous employees in the Firewood Department was 14·5 days, in the Brush Department 2·2 days and in the Printing Department 2·4 days.

Effects of Work on Health.—There has not been any evidence of an employee's health having suffered as the result of his occupation. One man had to give up work on account of advancing disease but he had only worked a week and would not have been started at all unless he had begged very earnestly for a chance to show what he could do. Several of the sputum positive patients at present employed are sure to break down sooner or later. This will not be the result of stress of work but because they have disease of such an extent and type that they will never be likely to make a complete recovery and a severe cold or an attack of influenza will probably light up the condition. Such results are bound to occur when tuberculous men are employed, but it can safely be said that the sheltered employment certainly postpones the evil day, and apart from this employment it is practically certain that they would not obtain any work at all. Work at the factory appears to be an excellent test of an ex-Sanatorium patient's capacity for return to the open labour market. If a man on discharge from Sanatorium can do the work of the Firewood Department for six or twelve months and maintain his health there is every probability that he may safely seek employment in a less sheltered occupation. Others find that even the work at the factory is rather more than they can do and frequently miss one or two days a week. The conditions of the Factory afford them a chance to carry on with light employment and in several cases a gradual return to fitness has been noticed. If these patients had gone straight back to their pre-Sanatorium occupation an early breakdown would have been inevitable. The mental effect of having something to do instead of loafing about is hard to assess but is undoubtedly a factor of considerable importance to all of the employees.

Out-Put of Pensioners and Non-Pensioners.—One of the principles on which the selection of cases is based is that non-pensioners are given preference to pensioners, as it is felt that the pensioner already has some State provision for his disability whereas the civilian is in a much worse case. Men with high rates of pension are being gradually replaced by non-pensioners.

It has been definitely observed that the pensioner does not produce the same out-put as the non-pensioner, no doubt because his financial position is better and there is less urge to work. In the Firewood Department this can be easily observed, and figures worked out for the year show that of all pensioners employed the average bundling was slightly under 5,000 per week whilst among non-pensioners the average was 6,000, the difference in output being 20 per cent. This is more striking in view of the fact that the pensioners were nearly all old employees with considerable experience of bundling whilst the non-pensioners were new to the work.

Premises.—When the present alterations have been completed the premises should be well fitted for the occupations carried on and also sufficiently spacious to give the employees suitable and well ventilated surroundings.

Care Work.—The Committee, through the Secretary, Miss Mackay, and the voluntary workers of the Case Committee have again rendered invaluable service in many directions. A considerable amount of work is entailed in administering the Government grant for the supply of extra nourishment. The Secretary has also been made responsible for investigating the financial position of patients requiring dental treatment, and assessing their ability to contribute according to the approved scale. Similar investigations are carried out when surgical appliances have to be supplied, and in many cases part of the cost is recovered from the patient. In addition to these activities much useful work is done in getting suspicious contacts away for convalescence and assisting patients with sickroom appliances, bedding, clothing, and home helps.

The Care Committee is in close touch with many official and charitable organisations through whose co-operation assistance can often be given to the varying needs of patients. Some strikingly successful results have been obtained by enlisting the interest of welfare workers in large factories in the domestic troubles of tuberculous employees who were reluctant to go to Sanatorium on account of financial difficulties. The assistance of the Guardians has often to be obtained for the disposal of children when the mother has to go to Sanatorium.

The following is a typical example of prompt assistance given by the Care Committee :—

> A patient (a widow) was in urgent need of Sanatorium treatment but said she could not go as she had young children at home and also her mother, an old lady of 80, living with her who could not take charge of the children. The only income was 18/– widows pension, out of which the expenses of the household including the rent had to be met. Within half an hour, whilst the patient was still waiting, arrangements were made by telephone for the old lady, who was a Roman Catholic, to stay with The Little Sisters of the Poor where she would have a home free, and the children to be taken to the Scattered Homes of the Guardians where they would be in the personal care of a good foster mother.

In other cases the British Red Cross Society, United Services Fund, National Society of Prevention of Cruelty to Children, Charity Organisation Society, Ministry of Pensions, local convalescent societies, and various approved societies, and other bodies, are approached to assist in the solution of difficulties which are too varied to give in detail. The value of co-operation with so many bodies is daily apparent and grateful acknowledgment is made for all such help.

The following is a summary of the number of cases helped in various directions during 1928 :—

	CASES
Nourishment Grants	678
Home help supplied	38
Convalescence arranged for	161
Clothing supplied	142
Beds and bedding	24
Patients helped with surgical appliances and various sick room requisites	37
Helped by various means and through other agencies	498
	1,578

Maternity and Child Welfare.

One of the most gratifying features of the year 1928 was the further decline in the mortality of infants under one year of age. Less than a quarter of a century ago out of every thousand babies born an average of 150 failed to survive the first year of life. Since 1917, with the exception of three years, 1922, 1924 and 1926, when there were slight rises, the mortality rate has steadily fallen until last year when it reached the lowest point on record, namely, 79. It is not so very long ago, 1911, since the death-rate was double that figure, so that the improvement has been rapid and well sustained. The credit for this commendable result is due to several factors, including the better education of the people in matters relating to the care and rearing of children, the improved sanitary conditions of the city, and in no small measure to the excellent work of the infant welfare centres. If I were to be asked which of these factors had played the most important part in reducing the wastage of child life I should unhesitatingly say the infant welfare centres.

Last year was peculiarly favourable to infant life. There was at least until the latter half of the year, an entire absence of epidemic disease and the outbreak of scarlet fever in the Autumn had little or no effect on the death-rate of children under one.

One cannot hope, however, that every year will be as favourable as 1928, or that the rate will continue always on the downward grade. With the persistent fall in the birth-rate, child-life becomes more precious and there is, therefore, the greater necessity for protecting the lives of the ever-shrinking number of babies born into the population.

Another pleasing feature of the year's working was that the maternal mortality rate shared in the decrease with the infant mortality rate. This rate still remains much too high, and I am hoping to see as a result of the improved lying-in facilities at the Maternity Hospital, shortly to be available, a further reduction. I am all too conscious of the difficulties which surround the problem of maternal mortality in this city—they are not dissimilar in other parts of the country—and I doubt very much whether these difficulties can be altogether overcome, even with increased skill

and knowledge on the part of those who attend women in child-birth and the improved facilities for institutional accommodation.

The average rate of maternal mortality in this city for 20 years has been round about 4·5 per thousand births, and the tendency to-day is for that rate to increase rather than diminish. It must be borne in mind that in these 20 years the birth-rate has declined rapidly, and to-day the number of women who face the risks of childbirth is smaller by one-third than was the case 20 years ago. The expansion of the facilities for the supervision of women during the ante-natal period seems to me to offer the best solution to the problem, but the difficulty is to get the average expectant mother to take advantage of those facilities even when they are brought to her very door. It is frequently the last minute before she engages a midwife or doctor for her confinement, and then it is too late to rectify any abnormality which may exist, and in many cases by the time child-bed is reached the woman is already doomed. Only by the broadcasting of knowledge concerning the dangers of childbirth amongst the women of the community can such disasters be averted.

Statistics.—The number of children under one year of age who died during 1928 was 606 (males 382 and females 224). The infant mortality rate was 79 or two less than the rate (81) for last year. This is the lowest rate ever recorded in Leeds. Compared with the average of the previous five years (93) the rate for 1928 represents a reduction of 15·1 per cent. and with the average for the decade of 22·5 per cent.

Compared with the other large towns in England and Wales, Leeds occupied the seventh place in order of merit, the towns with lower rates being London, Birmingham, Sheffield, Bristol and Bradford.

The rate for England and Wales was 65 or 17·7 per cent. lower than the rate for Leeds.

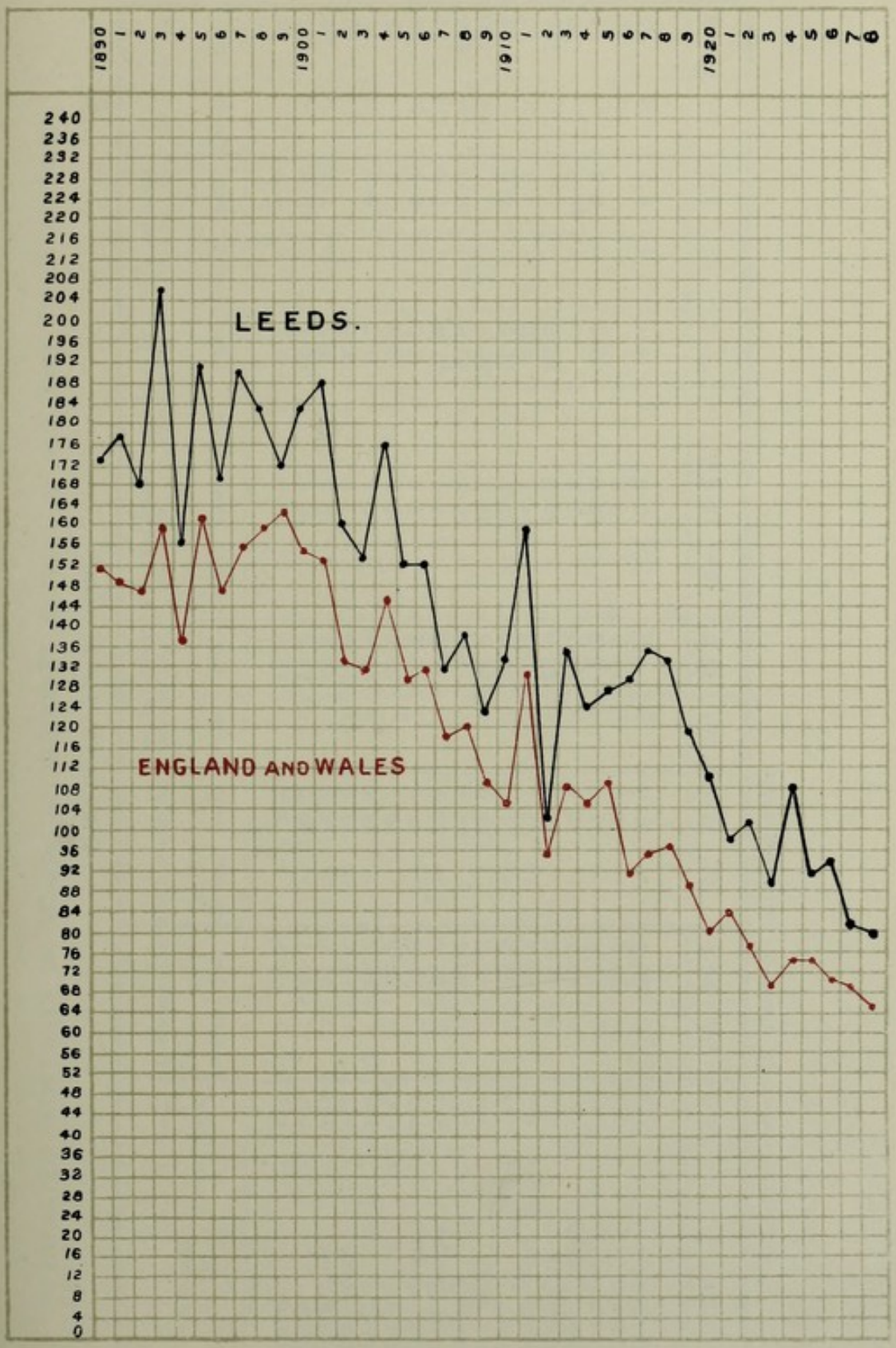
Causes of Infant Death.—The principal causes contributing to the infantile death-rate in order of numerical importance were premature birth (169), diarrhœa and enteritis (89), pneumonia (80), atrophy, debility and marasmus (52), congenital malformations (28), and convulsions (27).

As mentioned earlier on in the report there was a marked decline in the mortality amongst infants from respiratory diseases such as

Infantile Mortality during the Eleven Years 1918-1928 at different periods of the first year of life.

Year.	Births in year.	Under one week.		Under one month.		One and under three months.		Three and under six months.		Six and under nine months.		Nine and under twelve months.		Under one year.	
		Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.
1918 ..	7,392	189	25·6	316	42·7	154	20·8	199	26·9	175	23·7	140	18·9	984	133
1919 ..	7,564	230	30·4	373	49·3	147	19·4	156	20·6	125	16·5	98	13·0	899	119
1920 ..	11,229	304	27·1	520	46·3	260	23·2	191	17·0	146	13·0	115	10·2	1,232	110
1921 ..	10,144	249	24·5	419	41·3	184	18·1	180	17·7	116	11·4	98	9·7	997	98
1922 ..	9,253	206	22·2	401	43·3	159	17·2	125	13·5	127	13·7	123	13·3	935	101
1923 ..	8,684	204	23·5	363	41·8	110	12·7	125	14·4	92	10·6	83	9·6	773	89
1924 ..	8,558	185	21·6	331	38·7	156	18·2	155	18·1	150	17·5	129	15·1	921	108
1925 ..	8,180	184	22·5	309	37·8	141	17·2	119	14·5	88	10·8	91	11·1	748	91
1926 ..	8,065	187	23·2	312	38·7	134	16·6	118	14·6	96	11·9	88	10·9	748	93
1927 ..	7,790	170	21·8	274	35·2	103	13·2	87	11·2	84	10·8	81	10·4	629	81
1928 ..	7,665	201	26·2	286	37·3	102	13·3	94	12·3	72	9·4	52	6·8	606	79

INFANT MORTALITY PER 1000 BIRTHS, 1890 - 1928.



Infantile Mortality in Wards at different periods of the first year of life, Calendar Year, 1928.

Ward.	Births in year.	Under one week.		Under one month.		One and under three months.		Three and under six months.		Six and under nine months.		Nine and under twelve months.		Under one year.	
		Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.
Central	217	2	**9·2**	2	**9·2**	3	**13·8**	3	**13·8**	2	**9·2**	1	**4·6**	11	**51**
North	662	17	**25·7**	24	**36·3**	11	**16·6**	7	**10·6**	8	**12·1**	9	**13·6**	59	**89**
North-East ..	591	17	**28·8**	25	**42·3**	10	**16·9**	9	**15·2**	4	**6·8**	1	**1·7**	49	**83**
*New Ward ..	280	4	**14·3**	6	**21·4**	5	**17·9**	1	**3·6**	1	**3·6**	..	..	13	**46**
East	757	11	**14·5**	20	**26·4**	9	**11·9**	15	**19·8**	7	**9·2**	7	**9·2**	58	**77**
South	266	10	**37·6**	12	**45·1**	4	**15·0**	3	**11·3**	1	**3·8**	2	**7·5**	22	**83**
East Hunslet ..	717	25	**34·9**	35	**48·8**	9	**12·6**	5	**7·0**	4	**5·6**	6	**8·4**	59	**82**
West Hunslet ..	514	11	**21·4**	20	**38·9**	7	**13·6**	3	**5·8**	9	**17·5**	4	**7·8**	43	**84**
Holbeck	486	19	**39·1**	25	**51·4**	7	**14·4**	8	**16·5**	10	**20·6**	5	**10·3**	55	**113**
Mill Hill	61	3	**49·2**	4	**65·6**	2	**32·8**	3	**49·2**	2	**32·8**	..	..	11	**180**
West	419	11	**26·3**	13	**31·0**	5	**11·9**	9	**21·5**	5	**11·9**	2	**4·8**	34	**81**
North-West ..	436	10	**22·9**	14	**32·1**	4	**9·2**	5	**11·5**	4	**9·2**	2	**4·6**	29	**67**
Brunswick ..	336	16	**47·6**	22	**65·5**	9	**26·8**	5	**14·9**	7	**20·8**	..	..	43	**128**
New Wortley ..	341	10	**29·3**	11	**32·3**	5	**14·7**	3	**8·8**	..	..	5	**14·7**	24	**70**
Armley & Wortley	507	10	**19·7**	16	**31·6**	3	**5·9**	8	**15·8**	5	**9·9**	5	**9·9**	37	**73**
Bramley	342	10	**29·2**	17	**49·7**	4	**11·7**	3	**8·8**	..	..	..	..	24	**70**
Headingley ..	733	15	**20·5**	20	**27·3**	5	**6·8**	4	**5·5**	3	**4·1**	3	**4·1**	35	**48**
City	7,665	201	**26·2**	286	**37·3**	102	**13·3**	94	**12·3**	72	**9·4**	52	**6·8**	606	**79**

* Roundhay, Seacroft, Shadwell and Crossgates.

bronchitis, pneumonia, whooping cough and influenza. In 1927 these diseases accounted for 147, or 23·4 per cent. of the total infantile deaths ; whereas in 1928 the figure was only 118, or 19·5 per cent. This is a remarkable reduction and demonstrates the sensitiveness of the infantile mortality rate to climatic conditions.

Prematurity was the most important single cause of infantile death during the year. No fewer than 169, or 27·9 per cent. of the total deaths being attributed to it. The corresponding figures for the previous year was 146, or 23·2 per cent. of the total deaths. Year after year, prematurity takes a more and more important place amongst the causes of death. It is a cause which is largely beyond control, and the only hope of bringing it under control is by establishing a better and more efficient system of ante-natal supervision. As already indicated this is a matter which depends as much on the expectant mother as on the doctor or midwife who attends the confinement, and even with the greatest care during pregnancy it is doubtful whether the figure could be very materially reduced.

The number of deaths of infants resulting from diarrhœa and enteritis rose from 79 in 1927 to 89 in 1928. The increase was due to the higher temperature which prevailed during the Summer months resulting in an increased prevalence of epidemic or Summer diarrhœa. This is a condition which can be controlled and with ordinary care on the part of parents and guardians is capable of entire eradication. It is due in most instances to unclean methods in the preparation and handling of the babies' food. Milk is the common vehicle by which the infection is carried to the baby, and the milk is contaminated either by lack of care in handling before it reaches the hands of the consumer or after delivery. It once more demonstrates the need for a safer milk supply as well as for the education of young mothers in the methods of protecting milk from contamination during the hot summer months. No milk which has been exposed in an open milk can in a public thoroughfare or which has been left uncovered for any length of time in an occupied room should ever be fed to an infant. Such milk is a potential source of danger and should be rigidly excluded from the infant's dietary. In hot weather unless the milk supply is of a guaranteed variety, such as one of the graded milks, dried milk should be substituted for liquid milk.

Death-rate in quarters.—The infant mortality rate for the four quarters of the year is given in the accompanying table.

	I.	II.	III.	IV.	Year.
1918	162	101	114	155	133
1919	173	102	123	96	119
1920	139	95	88	112	110
1921 . ..	108	78	101	108	98
1922	119	106	77	101	101
1923	114	74	86	82	89
1924	171	83	68	109	108
1925	84	62	100	126	91
1926	120	78	75	100	93
1927	104	70	66	83	81
1928	84	60	77	99	79

The quarter with the highest death-rate was the fourth followed by the first whilst the figures for the second and third were comparatively low.

Deaths in Age Groups.—Of the total (606) infant deaths, 201, or 33·2 per cent. took place in the first week of life; 286, or 47·2 per cent. in the first month; 102, or 16·8 per cent. between one and three months; 94, or 15·5 per cent. between three and six months; 72, or 11·9 per cent. between six and nine months; and 52, or 8·6 per cent. between nine and twelve months.

The percentage changes in the infant death-rate per 1,000 births in 1928 as compared with the average of the previous ten years are as follows:—

Under 1 week, increase	7·8%	3–6 months, decrease ..	26·8%
Under 1 month decrease	10·6%	6–9 ,, ...	31·9%
1–3 months ,,	25·3%	9–12 ,, ,, ..	43·3%

Whole year decrease, 22·5%

It is interesting to note the changes which have taken place at the various age periods of infancy since the quinquennium 1905-1909. These are set out in the table on page 124. The quinquennial average has been taken in order to make a better comparison.

Percentage Changes (5 year periods, also Years 1925, 1926, 1927 and 1928) in the Infant Death-Rate per 1,000 Births as compared with the average of the Five Years 1905-1909.

Five year period.	Under one week		Under one month.		One and under three months.		Three and under six months.		Six and under nine months.		Nine and under 12 months.		Under one year.	
	Rate.	Percentage increase or decrease over 5 years period 1905-1909.	Rate.	Percentage increase or decrease over 5 years period 1905-1909.	Rate.	Percentage increase or decrease over 5 years period 1905-1909.	Rate	Percentage increase or decrease over 5 years period 1905-1909.	Rate.	Percentage increase or decrease over 5 years period 1905-1909.	Rate.	Percentage increase or decrease over 5 years period 1905-1909.	Rate.	Percentage increase or decrease over 5 years period 1905-1909.
1905-1909	26·2	—	44·3	—	25·5	—	28·0	—	23·0	—	18·6	—	139	—
1910-1914	26·6	+1·5%	44·1	−0·5%	24·7	−3·1%	23·9	−14·6%	20·1	−12·6%	18·0	−3·2%	131	−5·8%
1915-1919	26·4	+0·8%	44·4	+0·2%	21·5	−15·7%	25·0	−10·7%	19·7	−14·3%	17·9	−3·8%	129	−7·2%
1920-1924	23·8	−9·2%	42·3	−4·5%	17·9	−29·8%	16·1	−42·5%	13·2	−42·6%	11·6	−37·6%	101	−27·3%
Year 1925	22·5	−14·1%	37·8	−14·7%	17·2	−32·5%	14·5	−48·2%	10·8	−53·0%	11·1	−40·3%	91	−34·5%
Year 1926	23·2	−11·5%	38·7	−12·6%	16·6	−34·9%	14·6	−47·9%	11·9	−48·3%	10·9	−41·4%	93	−33·1%
Year 1927	21·8	−16·8%	35·2	−20·5%	13·2	−48·2%	11·2	−60·0%	10.8	−53·0%	10·4	−44·1%	81	−41·7%
Year 1928	26·2	− +	37·3	−15·8%	13·3	−47·8%	12·3	−56·1%	9·4	−59·1%	6·8	−63·4%	79	−43·2%

Births and Deaths under one year with rates.—Calendar Year 1928.

Ward.	Total Births (nett).	Birthrate per 1,000 population.	No. of legitimate births.	No. of illegitimate births.	Total deaths under one year (nett).	Death rate per 1,000 births.	No. of legitimate deaths under one year.	Legitimate death rate per 1,000 legitimate births.	No. of illegitimate deaths under one year.	Illegitimate death rate per 1,000 illegitimate births.
Central	217	17·25	202	15	11	51	10	50	1	67
North	662	15·10	625	37	59	89	51	82	8	216
North-East	591	16·19	560	31	49	83	40	71	9	290
*New Ward	280	22·70	268	12	13	46	10	37	3	250
East	757	21·05	728	29	58	77	54	74	4	138
South	266	20·62	246	20	22	83	17	69	5	250
East Hunslet ..	717	18·97	682	35	59	82	54	79	5	143
West Hunslet ..	514	14·16	501	13	43	84	42	84	1	77
Holbeck	486	16·44	468	18	55	113	51	109	4	222
Mill Hill	61	11·61	55	6	11	180	10	182	1	167
West	419	19·06	384	35	34	81	28	73	6	171
North-West	436	13·81	400	36	29	67	27	68	2	56
Brunswick	336	14·06	308	28	43	128	32	104	11	393
New Wortley ..	341	19·01	320	21	24	70	19	59	5	238
Armley & Wortley ..	507	13·57	494	13	37	73	36	73	1	77
Bramley	342	13·91	332	10	24	70	23	69	1	100
Headingley	733	13·47	702	31	35	48	34	48	1	32
City	7,665	16·14	7,275	390	606	79	538	74	68	174

*Roundhay, Seacroft, Shadwell and Crossgates.

Neo-natal Death-rate.—The number of deaths of infants occurring in the first month of life was 286, or 12 more than for the previous year, and the corresponding neo-infant mortality rate was 37·3.

Nearly one half, to be correct 47·2 per cent. of the total deaths under one year occurred in the first month of life as compared with 43·6 per cent. for the previous year, and of the deaths in the first month 70·3 per cent. occurred in the first week and 85·0 per cent. in the first two weeks.

On referring to the table on page 120 it will be noticed that in 1928 the death-rate of children under one week (26·2) was the highest recorded in Leeds since 1920 when the rate was 27·1.

Illegitimate Death-rate.—Of the 390 illegitimate births 68, or 17·4 per cent., died before reaching the age of one year which is equal to an infantile death-rate of 174. This is an increase of 20 per thousand as compared with the rate for 1927 which was 154.

The abnormally high rate of death of illegitimate children fills me with concern and that concern is in no way diminished by the knowledge that in 1928 there was a correspondingly high death-rate amongst unmarried mothers. The two rates are, of course, closely associated and are presumably accounted for by the wretched conditions under which so many of these mothers live during pregnancy and the still more unsuitable conditions under which confinement takes place. There is no doubt that many of these unfortunate women try to conceal pregnancy as long as possible, and only reveal the fact that they are about to become mothers when it is too late to make proper arrangements for the confinement. If only they could be induced to accept the help and advice of an ante-natal clinic or of one or other of the lying-in institutions they would save themselves much unnecessary suffering and reduce the risks to their own health and that of their children enormously.

Concealment of pregnancy means the concealment of defects which may be dangerous to the lives both of mother and baby; indeed it is to the presence of such defects, including the lack of proper provision for the confinement, that the high maternal mortality amongst expectant mothers is due as well as, of course, to the poor condition of health to which so many of these mothers are reduced by reason of the lack of sufficient nourishment.

If it had been possible to eliminate all the deaths of unmarried mothers and illegitimate children the maternal mortality rate as well as the infantile mortality rate would have been very materially reduced. The problem is essentially a social one, which clamours for solution, and I hope it will receive more attention from those engaged in social work in the future than it has done in the past.

DEATHS FROM STATED CAUSES UNDER ONE YEAR OF AGE.

Causes of death.	Year 1927.	Year 1928.	Increase or decrease.	Percentage of total deaths under one.
Smallpox	..	..	..	..
Chickenpox	..	..	..	..
Measles	21	3	-18	0.5
Scarlet Fever	..	2	+ 2	0.3
Whooping Cough	18	19	+ 1	3.1
Diphtheria	..	1	+ 1	0.2
Influenza	10	5	- 5	0.8
Erysipelas	2	..	- 2	..
Tuberculous Diseases ..	10	11	+ 1	1.8
Meningitis	3	5	+ 2	0.8
Convulsions	30	27	- 3	4.5
Bronchitis	20	14	- 6	2.3
Pneumonia (all forms) ..	99	80	-19	13.2
Other diseases of Respiratory Organs	3	..	- 3	..
Diarrhœa and Enteritis ..	79	89	+10	14.7
Gastritis	1	2	+ 1	0.3
Syphilis	12	8	- 4	1.3
Rickets	3	..	- 3	..
Suffocation, including overlying	13	16	+ 3	2.6
Injury at birth	17	11	- 6	1.8
Atelectasis	19	16	- 3	2.6
Congenital Malformations	35	28	- 7	4.6
Premature birth	146	169	+23	27.9
Atrophy, Debility, and Marasmus	32	52	+20	8.6
Other Causes	56	48	- 8	7.9
Totals	629	606	-23	100

MATERNITY AND CHILD WELFARE SERVICES INCLUDING SUPERVISION OF MIDWIVES,

BY

GLADYS J. C. RUSSELL, M.B., Ch.B., D.P.H., Assistant Medical Officer of Health for Maternity and Child Welfare.

Number of Midwives.—The number of midwives on the register at December 31st, 1927, was 113 ; 26 new names were added during the year, 20 ceased to practise, 11 resigned and their names were removed from the register leaving a total on the register at December 31st, 1928 of 108. Of the total, 51 were attached to institutions. The actual number who practised in the area during the year was 90, of whom 81 (or 90 per cent.) were trained and nine (or 10 per cent.) untrained. The number of births attended by midwives was 3,134 (or 39·3 per cent.) of the total births registered.

The following table gives an analysis of the cases attended by midwives :—

TRAINED.			UNTRAINED.	
81 midwives. Total cases attended .. 2,882 Average per midwife 36 cases.			9 midwives. Total cases attended .. 252 Average per midwife 28 cases.	
No. of Cases.	Practising on their own account.	Attached to institutions.	No. of Cases.	Practising on their own account.
Over 200	1	1	Over 200	..
,, 150	..	1	,, 150	..
,, 100	4	2	,, 100	..
,, 75	4	4	,, 75	1
,, 50	3	2	,, 50	1
,, 25	5	3	,, 25	2
,, 10	9	4	,, 10	2
,, 5	6	3	,, 5	1
Under 5	14	15	Under 5	2

Twenty-seven trained midwives (16 attached to institutions) and one not trained, took no cases during the year.

Inspection of Midwives.—The inspection of midwives' bags, books and appliances was carried out regularly during the year, the total number of such inspections made being 203. In addition to these inspections, the inspector of midwives made 35 enquiries

into maternal deaths and paid 110 other visits. Fifty-five midwives were interviewed in connection with breaches of the rules of the Central Midwives Board and other minor misdemeanours. Twenty-seven midwives were reported to the Assistant Medical Officer for Maternity and Child Welfare, and 21 were interviewed by her. One was summoned to appear before the Health Committee, and the case was sent up to the Central Midwives Board, London. She subsequently resigned and surrendered her certificate. There were also 27 investigations made into complaints respecting the conduct of midwives.

Advising Medical Help.—Notifications of having advised medical assistance were received in 976 cases, which may be classified as follows :—

Illness during pregnancy, or abortion	38
Malpresentation	56
Delayed or obstructed labour	224
Ruptured perineum	172
Retained membrane or placenta	29
Hæmorrhage	30
Convulsions, eclampsia	1
Puerperal rise of temperature	50
Illness of mother during puerperium	56
Illness of child	132
Infants—discharging eyes	59
Artificial feeding	29
Death of infant under ten days	19
Still-births	68
Suspected infectious disease	10
Maternal deaths	3

Midwives' Emergencies.—During the year 519 claims were made by medical practitioners in the city for attendance on emergencies of labour under Section 14 of the Midwives Act, 1918. Of these 12 were paid direct by the parent, whilst the remainder, 507, were met in whole or in part by the Local Authority at a total nett cost of £442 4s. 6d.

Accouchement Sets.—During the year 206 accouchement sets were sold to the mothers through the Welcomes, midwives and maternity homes.

Puerperal Fever Cases.—All cases of high temperature were investigated by the Inspector of Midwives. Where the case was diagnosed as one of puerperal fever, however slight, the midwife was taken off the case, and, if the patient was not removed to the City Isolation Hospital or other institution, arrangements were made for the district nurses to take over the nursing of the case. This was done in 16 cases. The object of this provision is to free the midwife from her obligation to continue her attendance on the case, for the specified period of 10 days after the birth of the child, thus preventing the spread of infection, and securing the midwife against loss of practice. Disinfection of the midwife's person, clothing and maternity bag was carried out under the personal supervision of the Inspector of Midwives. The total number of midwives disinfected was 31. Fifty-nine visits to midwives were made in connection with cases of puerperal fever and puerperal pyrexia. In addition 225 investigations into puerperal rises of temperature were made, and 63 visits were paid to cases of an infectious nature other than puerperal fever. There were 47 cases of puerperal fever notified during the year, 18 of which occurred in doctors' practices, 16 in midwives' and 13 in institutions.

Ophthalmia Neonatorum.—There were 66 cases of ophthalmia neonatorum notified during the year. Cases occurring in the practices of midwives were either transferred to hospital or handed over to the district nurses for treatment, the midwives continuing to attend the mothers. A health visitor called periodically at the home to watch the progress of the disease in each case and see that everything possible was being done. Thirty-six cases were treated at home, and 30 in institutions. Sixteen cases were attended by the district nurses, and 193 visits were made by the health visitors.

Pemphigus Neonatorum.—All cases of infants who were reported by the midwives to be suffering from blebs or blisters were investigated, and if the case was found to be one of pemphigus neonatorum the district nurses were asked to take over the nursing. The midwife then ceased her attendance on the patient, and her person, instruments and bag were disinfected under the personal supervision of the Inspector of Midwives. There were 45 cases during the year, three of whom died. There was no serious epidemic in the practices of the midwives, but one midwife had a group of nine cases, between January and April, another midwife had a group of five cases in sequence, and the others were isolated cases or appeared in groups of two.

Employment of, or subsidy to, practising midwives, by the Local Authority.—There are no midwives actually employed by the Health Department, nor was any subsidy given to any practising midwife in the area during the year. However, the arrangement made between the Corporation and the Leeds Maternity Hospital, whereby provision is made for the maintenance of district midwives in five districts of the city remained in operation. Each branch is staffed by one midwife and two pupils (unpaid). The midwife receives a fixed annual salary, varying from £83 to £102 according to length of service. In addition, where she conducts more than 120 cases per annum, she receives a bonus of 2/- per case above that number. Board, residence and laundry are found. Only two midwives conducted sufficient deliveries to entitle them to the bonus.

Compensation to Midwives for loss of work.—A midwife can claim compensation to the extent of half her fee for any cases lost because of her having been in contact with an infectious case. The number of such claims made during the year was three and the cost to the Corporation was £8. She can also claim compensation for the loss of a case which she has sent to an ante-natal Clinic, and which, owing to some abnormality, has had to be sent into hospital for confinement. The number of these claims was seven and the cost to the Corporation was £7 4s.

Revision Course.—Owing to the very small number of entries no post certificate course was held during 1928. Arrangements were however made for midwives to attend the ante-natal clinics—one or two at a time—to receive instruction in ante-natal work and the keeping of ante-natal records. It was hoped that they would thus become more proficient in this most important branch of their work.

Handywomen.—In addition to visits paid to midwives, 37 visits were paid to handywomen; 25 were warned as to limitations of practice, etc., 18 were disinfected, and four were interviewed by the Senior Medical Officer for Maternity and Child Welfare.

Stillbirths.—The number of stillbirths does not vary very much from year to year. For the decennium 1917-1927 they have averaged 4·3 per cent. of the total births notified. The number notified during 1928 was 388 or 4·9 per cent. of the total births notified, which is an increase of 21 on the figure for the last year, which was 367 or 4·6 per cent.

The following table shows the comparison between live births and still-births for the last eleven years :—

BIRTHS NOTIFIED (LIVE AND STILL).

Year.	Live births notified.	Still-births notified.	Total births notified live and still.	Percentage of still-births to total births.
1918	6,892	287	7,179	4·0
1919	7,684	340	8,024	4·2
1920	10,749	461	11,210	4·1
1921	9,462	466	9,928	4·7
1922	8,658	418	9,076	4·6
1923	8,264	379	8,643	4·4
1924	8,105	348	8,453	4·1
1925	8,034	334	8,368	4·0
1926	7,828	380	8,208	4·6
1927	7,582	367	7,949	4·6
1928	7,497	388	7,885	4·9

Notification of Births Act came into force in Leeds 1st January, 1914.

Of the 388 stillbirths notified, 69 or 17·8 per cent. were by midwives, and 319, or 82·2 per cent., by medical practitioners. Each stillbirth is investigated and the mother is visited again in six months time. If she is found to be again pregnant she is urged to attend her own doctor or the ante-natal clinic for ante-natal supervision. Mothers who give a history of previous miscarriages or stillbirths, are asked to attend their own doctor an or ante-natal clinic as soon as they are able, for special investigation.

The ratio of still to live births amongst the mothers attending the ante-natal clinics who were confined during the year was 1 to 26 as compared with 1 to 19 for the city.

Investigations were carried out in 372 of the stillbirths, with regard to the number of children in the family in which they occurred. It was found that the majority occurred in families of no child and one child, the percentage being 55·4 per cent ; in families of 2 children 12·1 per cent ; of 3 children 8·6 per cent ; of 4 children 6·5 per cent ; of 5 children 4·6 per cent. of 6 children 2·7 per cent ; of 7 and 8 children 3·2 per cent. each ; of 9 children 1·9 per cent ; and of still larger families under 1 per cent. The significance of these figures is that contrary to the usual impression large families are not responsible for the majority of dead born children. Precisely

the opposite is the case, and the explanation that at once suggests itself is the late age at which marriage takes place nowadays, and the still later age at which children begin to appear often as a result of deliberate prevention of conception in the early years after marriage.

Ante-Natal Work.—At 14 of the clinics one session, and at one clinic 2 sessions, are set aside for expectant mothers only. During the year two new ante-natal clinics were started, one at Middleton on January 11th, 1928 and one at Burley on November 6th, 1928.

A total of 2,135 expectant mothers attended during the year, as compared with 1,775 the previous year. Of these, 1,738 were new and attended for the first time. The total attendances was 6,976, as compared with 6,420 for the previous year, an increase of 556.

Particulars of the work at the ante-natal clinics are set out in the following table.

EXPECTANT MOTHERS ON REGISTER.

Welcome.	No. on register at beginning of year.	Registered during year.	Live Births.		On register end of year.	Total attend-ance of expectant mothers.
			Full Term.	Prema-ture.		
Ellerby	46	122	103	1	50	449
West Street ..	17	73	65	3	16	280
Burmantofts ..	22	116	77	1	46	424
Hunslet	25	146	121	8	31	576
University ..	22	91	76	3	29	353
Woodhouse ..	40	156	126	4	51	523
Holbeck	43	168	148	5	32	681
Armley	46	172	140	5	55	1,035
Chapeltown ..	22	123	97	3	34	430
St. Nicholas ..	35	139	123	1	31	389
Bramley	16	59	42	1	18	305
New Wortley ..	21	124	100	3	30	628
Middleton ..	11	38	30	..	12	146
West Hunslet ..	22	128	107	2	30	492
Burley	9	65	49	..	14	180
Crossgates ..	..	18	9	..	8	69
Totals	397	1,738	1,413	40	487	6,960

Of the 2,135 mothers on the register 23 miscarried and 56 had still births.
In addition to the above 8 expectant mothers paid 16 visits to Meanwood and Halton Centres where no ante-natal clinic is held, making a total of 6,976 attendances.

It is gratifying to note even the slight increase in the ante-natal work perhaps the most important branch of the Maternity and Child Welfare Service. Much remains to be done in educating the general public, not only the mothers but the fathers also, to recognise the extreme importance of ante-natal care. It is only by careful supervision during pregnancy, that intra-urine death, maternal mortality, and neo-natal mortality, can be diminished, and, the subsequent health of the mother and child secured. It is a pity that expectant mothers are so apathetic concerning their own welfare and that so few take advantage of the advice and help offered at the ante-natal clinics. If they only appreciated the dangers of childbirth and the value of timely ante-natal care, they would require very little persuading to visit their doctor or an ante-natal clinic regularly during pregnancy. Expectant mothers attending the ante-natal clinics are examined by the medical officer in charge of the clinic. If any abnormality is found, they are referred to their own doctor or to the Maternity Hospital. Instruction is given on personal hygiene, the care of the breasts, and the management and importance of breast feeding.

Sterilised maternity outfits are sold at cost price, and during the last three months of pregnancy, milk can be obtained by these mothers from the Welcomes.

Natal Work.—Of the total births in the City 2,190, or 27.5 per cent., took place in institutions or nursing homes. Mothers are gradually becoming aware of the advantages of having their confinements in institutions, where they are away from all domestic worries, and can have constant attention with skilled help always at hand. She is in better hygienic surroundings, and the regular feeding of the baby can be instituted more easily away from home.

The custom of having confinements in institutions is, therefore, one to be encouraged, especially where the home conditions are unsatisfactory as is the case in many of the small back-to-back houses in Leeds.

The Leeds Maternity Hospital is in process of being extended and when completed the number of available beds will be increased to 100.

The accommodation provided by the Corporation at St. James' Hospital and St. Mary's Infirmary has been well taken advantage of during the year. The number of beds at St. Mary's Infirmary was increased to 6 on April 1st, 1928, which has helped considerably to meet the demand for accommodation.

Scheme for Utilisation of Maternity Beds in Poor Law Infirmaries. Report for Years 1926, 1927 and 1928.

	St. James' Hospital.			St. Mary's Infirmary.		
	1926.	1927.	1928.	1926.	1927.	1928.
Number of Beds reserved ..	3	3	3	3	3	6†
Total Number of Cases for which accommodation is available	78	78	78	78	78	136
Number of Cases treated—						
(*a*) Normal	19	34	26	73	70	102
(*b*) Abnormal	1	10	8	25	38	43
(*c*) Not delivered	1	1	5	2	4*	8‡
Total	21	45	39	100	112	153
Number of Births—						
(*a*) Full term	19	41	33‖	95	98	136
(*b*) Premature	..	..	1	2	4	7 ‖§
(*c*) Stillborn	1	2	1	1	6	5
(*d*) Miscarriage	..	1	..	..	..	..
Total	20	44	35	98	108	148
Average length of stay (in days)	14·9	16·3	16·8	13·8	13·7	14·2
Total Cost per case	£4 9s. 1¾d.	£4 17s. 7¼d.	£4 3s. 3¼d.	£5 9s. 3¾d.	£5 11s. 8¼d.	£3 16s. 11¾d.
Cost per case per week ..	£2 2s. 0d.	£2 2s. 0d.	£2 1s. 0¼d.	£2 15s. 6¾d.	£2 16s. 9¾d.	£1 12s. 1½d.
Gross Cost to Corporation ..	£93 12s. 0d.	£219 12s. 0d.	£162 7s. 6d.	£546 11s. 0d.	£625 10s. 0d.	£588 16s. 6d.

Total nett cost to Corporation 1926 .. £341 4s. 6d.
Do. do. do. 1927 .. £315 18s. 6d.
Do. do. do. 1928 .. £200 14s. 6d.

Amount of patients' payments, 1926 .. £298 18s. 6d.
Do. do. do. 1927 .. £529 3s. 6d.
Do. do. do. 1928 .. £550 9s. 6d.

* Includes 1 baby born before arrival.
‡ Includes 2 babies born before arrival.
† Increased from 3 to 6 beds as from April 1st, 1928.
‖ Includes 2 twin babies.
§ Includes 3 triplet babies.

Maternity and Nursing Homes.—The number of registered maternity homes in the city, excluding all institutions and lying-in homes carried on by medical men, on December 31st, 1927 was 26,

The Nursing Homes Registration Act, 1927 came into force on July 1st, 1928, and Part IX. (Maternity Homes) of the Leeds Corporation Act, 1924 was repealed as from that date.

The following table gives particulars as to the registration of maternity and nursing homes for the two periods of the year, under the two different Acts.

	To June, 1928.	July 1st to Dec. 31st, 1928.	
		Maternity Homes.	Other Nursing Homes.
No. of applications for registration	Existing Homes deemed to be registered.	4	3
No. of Homes registered	24	4	3
No. of Orders made refusing or cancelling registration	..	..	..
No. of Appeals against such Orders	..	..	..
No. of Cases in which such Orders have been :—			
(*a*) Confirmed on appeal	..	..	..
(*b*) Disallowed	..	..	..
No. of applications for exemption from registration	..	4	1
No. of Cases in which exemption has been :—			
(*a*) Granted	..	3	1
(*b*) Withdrawn	..	..	..
(*c*) Refused	..	1	..
No. of Cases in which registration voluntarily surrendered	..	3	..

The total number of registered nursing homes on December 31st, 1928 was 28 comprising :—

Maternity Homes	13
Maternity and General Nursing Homes	12
General Nursing Homes	3

All registered homes were visited regularly and inspected, the number of visits for this purpose being 59.

An analysis of the births registered as occurring in the various lying-in institutions in the city is given in the following table :—

Institution.	No. of births.	Percentage of total registered.
Leeds Maternity Hospital	1,251	15·68
St. Faith's Home	17	0·21
St. James' Hospital	440	5·52
St. Mary's Infirmary	158	1·98
Hope Hospital	13	0·16
Leeds General Infirmary	8	0·10
Women and Children's Hospital.. ..	13	0·16
Private Nursing Homes	290	3·64
Total ..	2,190	27·45

Illegitimate Births in Institutions.—Of the 2,190 births which took place in institutions, 312 or 14·2 per cent. were illegitimate. This is a decrease of seven on the figure for last year.

Ambulance Service.—For the number of cases removed to the various lying-in institutions by the special ambulance provided and maintained for the purpose, see page 79. The ambulance is available at any time, night or day, for the removal of necessitous maternity cases to any of the public lying-in institutions.

Maternal Mortality.—During the year 36 mothers lost their lives in childbirth. Last year the number was 38, so there was a decrease of two. The rate of mortality for the city was 4·70 per thousand births, as compared with 4·88 for 1927. The rate in respect of welcome mothers has been reduced from 3·2 to 2·7. Of the 36 which occurred during the year, four or 11·1 per cent. were in the practices of midwives, 10 or 27·8 per cent. in the practices of doctors, and 14 or 38·9 per cent. in institutions. In eight cases an inquest was held.

The chief causes of maternal death were puerperal sepsis 14, hæmorrhage 9, toxæmia of pregnancy 6, delayed labour 3, ectopic gestation 2, pulmonary embolism 1, and pelvic abscess 1.

Every maternal death was investigated by the inspector of midwives. Records are made by her as to the previous history of the deceased, the history of the pregnancy and confinement, and the particulars of the fatal illness. This last information is obtained from the midwife in attendance on the case, or from the relatives of the deceased.

In October, under the directions of the Minister of Health, the Committee on Maternal Mortality drew up an Inquiry Form for the investigation of maternal deaths. This form was adopted by the Local Authority, and the Senior Medical Officer for Maternity and Child Welfare acted as the medical investigator on the lines indicated. The doctor or doctors in attendance on each case were communicated with or interviewed, all information given being strictly confidential, and only available to the Medical Officer and to the Ministry of Health. It is hoped that by studying these detailed investigations, means may be devised of improving the maternity service of the country, and thereby lessening the sum of maternal damage and death.

The following table gives particulars of the maternal death-rate in Leeds for the last 17 years (since 1911) :—

MATERNAL MORTALITY.

Year.	No. of deaths.	Death-rate per 1,000 births from		
		Sepsis.	Other causes.	Total childbirth.
1911 ..	42	1·51	2·46	3·97
1912 ..	41	1·15	2·78	3·93
1913 ..	61	2·74	3·02	5·76
1914 ..	62	3·16	2·61	5·77
1915 ..	41	1·62	2·53	4·15
1916 ..	39	1·48	2·65	4·13
1917 ..	22	1·06	1·85	2·91
1918 ..	21	0·95	1·89	2·84
1919 ..	36	1·72	3·04	4·76
1920 ..	58	3·03	2·14	5·17
1921 ..	38	1·28	2·46	3·74
1922 ..	33	1·84	1·73	3·57
1923 ..	49	2·07	3·57	5·64
1924 ..	34	1·28	2·69	3·97
1925 ..	40	3·18	1·71	4·89
1926 ..	36	1·74	2·73	4·47
1927 ..	37	1·92	2·82	4·74

From Registrar-General's Annual Reports.

Specialist Service.—Facilities are provided by the Local Authority whereby medical practitioners may call in the help of an expert in cases of doubt or difficulty. The number of claims received from consultants for services rendered in connection with this scheme was 28 and the total nett cost to the Corporation was £72 12s. 6d.

Post Natal Work.—The number of births notified during the year exclusive of stillbirths was 7,497 or 94·0 per cent. of the total births registered.

Home Visiting.—First visits were paid by the health visitors to 7,950 cases. The number of re-visits to children up to five years was 73,333 which together with the first visits makes a total of 81,283. These figures show an increase of 14 in first visits and an increase of 19,790 re-visits, or an increase in the total visits of 19,804.

The increase in the number of re-visits was due to the reorganisation of the work of the health visitors and clinic nurses, which took effect in October, and to the fact that the visits paid by the clinic nurses during the whole of the year are also included.

It was found that although babies up to one year were brought to the clinics fairly regularly, after that age there was, unfortunately a tendency to fall off. As rickets is still very prevalent in Leeds, it is just the children between the ages of one and five years who need the most careful supervision in order that the disease may be prevented in the early stages by the application of suitable measures. It was this the Health Department had in view when it undertook the reorganisation of the work of the health visitors and clinic nurses towards the middle of the year. By the new arrangement the clinic nurses are relieved of some of their duties at the welcomes and each is made responsible for visiting the homes in a small district immediately around her welcome. This had the effect of curtailing the size of the health visitors' districts and thus permitted of more frequent visits to the homes of children between two and five years. Children requiring attention could thus be kept under observation and the mothers urged to get advice at the welcomes or elsewhere. This change marks the passing of the " clinic nurse " as apart from the " health visitor," and places both under the common designation of health visitor.

It is hoped that additional office accommodation will soon be available in order to get full advantage of the re-arrangement.

In addition to paying the routine visits of children from birth to five years, the health visitors also pay visits in connection with the following :—

1. Stillbirths.—These are investigated, and the mother re-visited in six months time to urge her to attend an ante-natal clinic if again pregnant.
2. Ophthalmia neonatorum.—Cases are kept under observation and progress reported to the office.
3. Measles, whooping cough and pneumonia.—Cases reported to the Department are visited to ascertain if the nursing is adequate.
4. Expectant Mothers.—Progress is watched and advice given where necessary.
5. Medical aid claims.—Visits are made to ascertain particulars.
6. Deaths of children under five.—These are visited to investigate the cause of death.
7. Cases of sickness in children under five notified to this Department by the Leeds General Infirmary and Public Dispensary.

A complete summary of the work of the health visiting staff is appended.

	VISITS.
Notified births including re-visits	81,283
Stillbirths and deaths under one month including re-visits	898
Death investigations of children from one month–five years	679
Ophthalmia Neonatorum	193
Measles	6,201
Whooping Cough	1,266
Pneumonia	2,051
Expectant mothers	2,896
Special visits (medical aid claims 485, cancer 67 and others)	1,078
Visits to ill children notified from the Leeds General Infirmary and Public Dispensary..	1,768
Total visits for the year	98,313

Infant Welfare Centres (" Welcomes").—There are 20 infant welfare centres situated in different parts of Leeds. The premises in which they are held are mostly rented for the purpose by the

Leeds Babies' Welcome Association. During the year a Central Welcome was opened on May 12th. These premises consist of two wooden bungalows situated in Calverley Street near the Town Hall. They are used for special clinics such as artificial sunlight, dental, orthopaedic, etc.

On April 1st Halton Clinic was taken over from the West Riding County Council and since October this clinic has been held in the Wesleyan School there.

New premises were also procured for the Chapeltown Welcome. They are situated in Barrack Road, and were opened on September 13th. They possess light airy rooms and are a great improvement on the former building.

New premises designed and built for the purpose were opened by H.R.H. Princess Mary, Viscountess Lascelles, in Theaker Lane, Armley on August 9th. They comprise the usual number of rooms for the reception and examination of mothers and infants. The layout is compact and convenient and should be easy to work and inexpensive to maintain.

It is hoped that later an artificial sunlight apparatus will be installed at this Centre.

The number of new babies under one year of age admitted to the Welcomes during 1928 was 4,124, as compared with 3,919 for the previous year, an increase of 205. Between one and two years 584 were admitted, and between two and five years 946.

The babies are brought to the clinics fairly regularly during the first year, but after that their attendance rather diminishes and sometimes ceases entirely. Quite a number of mothers are under the erroneous impression that the clinics are only for infants in arms. They do not appreciate that the child over one year also needs very careful supervision, in order to prevent disease, which may result in permanent disability or deformity. The additional home visiting should help towards this end, and encourage indifferent mothers to bring their children to the welcomes, or if that is not possible accept the health visitor's advice when she calls.

Of the total children born during the year 53·8 per cent. attended one or other of the welcomes as against 50·3 per cent. for last year. The total attendances of all babies at all the welcomes during the year was 110,816, which included attendances at the morning treatment clinics. This number is quite encouraging, but it would be more gratifying if even a greater number of mothers would avail themselves of the opportunities afforded at the clinics, of acquiring knowledge regarding the care of themselves and their infants.

Welcomes and Clinics.

WARD.	ADDRESSES.	DAYS.	TIMES.
E.	Wesleyan School, Richmond Hill	Tues.	9.30 a.m.
	Do. do. (New Babies) ..	Thurs.	9.30 a.m.
	Do. do.	Thurs.	2 p.m.
	Do. do. (Expectant Mothers)..	Mon.	2 p.m.
E.	University Club, Berking Avenue, York Road ..	Mon.	2 p.m.
	Do. do. (New Babies) ..	Thurs.	9.30 a.m.
	Do. do. (Expectant Mothers)..	Tues.	2 p.m.
N.	39, Burmantofts Street (New Babies) ..	Tues.	2 p.m.
	Do. do.	Wed.	9.30 a.m.
	Do. do.	Fri.	2 p.m.
	Do. do. (Expectant Mothers)..	Thurs.	9.30 a.m.
N.W.	Church of the Holy Name, Servia Road, Woodhouse Street	Tues.	2 p.m.
	Do. do. (New Babies) ..	Thurs.	9 a.m.
	Do. do. (Expectant Mothers)..	Thurs.	2 p.m.
M.H.	Little Queen Street, West Street	Mon.	2 p.m.
	Do. do.	Tues.	9 a.m.
	Do. do.	Wed.	2 p.m.
	Do. do. (Expectant Mothers)..	Thurs.	9 a.m.
A. & W.	Oddy House, Theaker Lane, Armley	Tues.	2 p.m.
	Do. do.	Thurs.	2 p.m.
	Do. do.	Fri.	2 p.m.
	Do. do. (Expectant Mothers)..	Wed.	9.30 a.m.
	Do. do. do.	Fri.	9.30 a.m.
New Wor.	Holdforth Street, New Wortley	Mon.	2 p.m.
	Do. do.	Thurs.	2 p.m.
	Do. do (Expectant Mothers) ..	Tues.	9.30 a.m.
Hol.	6, Granville Terrace, Holbeck	Tues.	2 p.m.
	Do. do.	Thurs.	2 p.m.
	Do. do.	Fri.	2 p.m.
	Do. do. (Expectant Mothers)..	Wed.	9.30 a.m.
	Do. do. (Sunlight Clinic) ..	Wed.	1.30 p.m.
	Do. do. do. ..	Fri.	9.30 a.m.
	Do. do. (X-ray Clinic) ..	Fri.	9.30 a.m.
E.H.	St. Oswald's Institute, Balm Road Terminus, Hunslet Carr .. (New Babies) ..	Mon.	9.30 a.m.
	Do. do.	Mon.	2 p.m.
	Do. do.	Fri.	2 p.m.
	Do. do. (Expectant Mothers)..	Thurs.	9.30 a.m.
Cen.	45, Barrack Road, off Chapeltown Road	Tues.	9.30 a.m.
	Do. do.	Wed.	2 p.m.
	Do. do. (Expectant Mothers)..	Mon.	9.30 a.m.
S.	St. Nicholas, 205, Hunslet Road	Tues.	2 p.m.
	Do. do.	Wed.	2 p.m.
	Do. do. (Expectant Mothers)..	Tues.	9.30 a.m.
Bmy.	Town End House, Bramley (New Babies) ..	Mon.	9.30 a.m.
	Do. do.	Wed.	2 p.m.
	Do. do. (Expectant Mothers)..	Fri.	9.30 a.m.
E.H.	Institute, Town Street, Middleton	Thurs.	1.30 p.m.
	Do. do. (Expectant Mothers)..	Wed.	9.30 a.m.
Hdy.	Wesleyan School, Meanwood	Wed.	1.30 p.m.
W.H.	West Hunslet Wesleyan School, Ladypit Street (New Babies) ..	Mon.	9.30 a.m.
	Do. do.	Wed.	1.30 p.m.
	Do. do. (Expectant Mothers)..	Fri.	9.30 a.m.

WELCOMES AND CLINICS (*Continued*).

WARD.	ADDRESSES.	DAYS.	TIMES.
Cen.	Harehills Welcome, 45, Barrack Road	Fri.	2 p.m.
New*	Cross Gates, Wesleyan School, Crossgates	Tues.	2 p.m.
Hdy.	All Hallows School, Hyde Park Road	Tues.	2 p.m.
	Do. do.	Thurs.	2 p.m.
	Do. do. (Expectant Mothers) ..	Tues.	9.30 a.m.
New	Wesleyan School, Halton	Wed.	2 p.m.
M.H.	Central Welcome, Calverley Street :—		
	Sunlight	Mon.	9 a.m.
	Dental	Tues.	9 a.m.
	Do.	Tues.	1.30 p.m.
	Do.	Wed.	1.30 p.m.
	Do.	Fri.	9 a.m.
	Do.	Sat.	9 a.m.
	Do. (Anæsthetics)	Fri.	9 a.m.
	Orthopædic	Thurs.	1.30 p.m.
	Venereal Diseases	Wed.	1.30 p.m.
	Diphtheria Immunization	Tues.	9 a.m.
	Do.	Thurs.	9 a.m.

*Roundhay, Seacroft, Shadwell and Crossgates.

It is interesting to note that the mortality rate of infants attending the Welcomes was 31 as against 79 for the city. But it is not only the prevention of death, but also the prevention of disease and crippling that the Welcomes make their aim.

A list of the Welcomes and the wards in which they are situated together with the times when the clinics are held is appended.

Infant Consultations.—The number of infant consultations at six of the Welcomes is three per week, at eight two and at five, one ; in addition special sessions for massage and treatment of minor ailments are held at 14 Welcomes, whilst at Holbeck and the Central Welcomes, clinics for the treatment of mothers and babies by artificial sunlight are held almost daily.

Dental, Orthopædic, Venereal Diseases and Immunization clinics are also held at Central Clinic.

Fourteen of the health visitors act as clinic nurses, each being in charge of a Welcome, making the necessary arrangements for the holding of her clinic, and undertaking any treatment for minor ailments which may be required.

Every infant clinic is attended by a medical officer, health visitor, clerk dispenser, and several voluntary workers in addition to the clinic nurse. A milk secretary attends most of the Welcomes once a week in order to interview mothers who are unable to buy their milk at full price.

The medical officer endeavours to see every baby once a month and advises the mother about its care and feeding. Unsatisfactory babies are seen more frequently. The health visitor weighs each baby, whilst a voluntary worker charts the weight. Voluntary workers, and at times the clinic nurse, register new babies and mark the attendance register. The clinic nurse has the responsibility of preparing for the clinics and seeing that things are in order so as to avoid confusion and unnecessary delay.

She attends the doctor and gets in as much instruction as possible to the individual mother or little groups of mothers. A voluntary worker at certain clinics displays model garments and issues instructions as to their making. At a few of the Welcomes sewing meetings are held, and at one, a class on cookery. Full discussions and talks on various subjects take place at these meetings.

The medical officers frequently give short talks to the mothers during clinics. Some of the subjects chosen were :—

1. Breast-feeding.
2. Rickets.
3. Diet.
4. Diphtheria.
5. Scarlet Fever.
6. Teeth.
7. Diarrhœa.
8. Habits.
9. Vitamins, etc.

In addition talks were given at the centres during Civic Week by Dr. Mabel Brodie, dealing with Health and Cleanliness in connection with Citizenship.

Arrangements when possible are made for the toddlers and babies to be looked after in another room during these talks, as it is impossible to make oneself heard above the din of the crying babies. However, even then the mother's anxiety about the absent child, rather lessens her attention, and so it is difficult to make these talks the success they otherwise would be.

Details of the work at the various Welcomes will be found in the tables on pages 145 and 146.

There are seven wholetime clerk-dispensers attached to the department. They are responsible for handing out the dried milk, cod liver oil, virol and the small quantity of drugs used at the Welcomes, also for the keeping of stocks and records.

Medical Staff.—During the year there were a few changes in the medical staff, particulars of which are noted on page 231.

The medical staff of the Maternity and Child Welfare Department at the end of the year consisted of five whole-time and six part-time medical officers. Of the six part-time officers, two conducted 3 sessions, 1 two sessions, and 3 one session per week at the Welcomes.

ATTENDANCES MADE AT INFANT WELFARE CENTRES DURING YEAR 1928.

WELCOME.	Consultations and meetings.			Morning treatment.			
	Mothers.	Babies under 1 year.	Babies 1—5 years.	Mothers.	Babies under 1 year.	Babies 1—5 years.	Callers.
Ellerby ..	4,312	2,958	2,226	24	575	1,471	440
West Street ..	2,929	3,739	2,932	120	833	1,787	41
Burmantofts ..	2,778	3,038	2,368	335	1,374	1,337	8
Hunslet ..	3,492	3,482	3,565	34	486	747	217
University ..	2,031	2,752	2,313	98	1,924	798	360
Woodhouse ..	2,106	3,525	1,615	28	495	157	100
Holbeck ..	2,244	3,792	3,296	106	912	562	220
Armley ..	2,644	3,457	3,566	262	1,338	3,387	926
Chapletown ..	1,313	2,846	2,323	1	567	277	170
St. Nicholas ..	3,844	2,694	2,405	160	790	643	819
Bramley ..	404	1,441	1,818	10	351	692	119
New Wortley..	1,442	2,235	1,824	140	549	2,087	80
Middleton ..	776	1,048	1,424	..	98	67	7
Meanwood ..	37	874	763	..	5	..	..
West Hunslet	1,118	2,941	2,173	27	359	206	45
Harehills ..	5	1,818	862	..	292	25	..
Crossgates ..	61	1,178	1,016	..	..	..	..
Burley ..	494	2,342	1,303	7	210	190	33
*Halton ..	191	860	413	..	..	..	..
Totals ..	32,221	47,020	38,205	1,352	11,158	14,433	3,585

*Taken over from the West Riding County Council on April 1st, 1928.

BABIES UNDER ONE REGISTERED DURING YEAR 1928.

WELCOME.	0–1 month.	1–3 months.	3–6 months.	6–12 months.	Total.
Ellerby ..	101	116	38	30	285
West Street ..	120	114	61	35	330
Burmantofts ..	87	123	33	33	276
Hunslet ..	116	110	22	30	278
University ..	116	78	23	19	236
Woodhouse ..	107	107	35	15	264
Holbeck ..	111	127	44	33	315
Armley ..	93	130	25	48	296
Chapeltown ..	98	118	36	27	279
St. Nicholas ..	97	98	21	23	239
Bramley ..	36	52	13	18	119
New Wortley..	82	78	42	27	229
Middleton ..	36	36	10	17	99
Meanwood ..	15	47	11	16	89
West Hunslet	83	110	23	22	238
Harehills ..	33	95	17	27	172
Cross Gates ..	16	50	11	15	92
Burley ..	68	100	31	24	223
*Halton ..	10	36	11	8	65
Totals ..	1,425	1,725	507	467	4,124

BABIES OVER ONE REGISTERED DURING YEAR 1928.

WELCOME.	1–2 years.	2–3 years.	3–4 years.	4–5 years.	Total.
Ellerby ..	44	25	26	7	102
West Street ..	54	46	30	14	144
Burmantofts ..	35	29	19	8	91
Hunslet ..	31	28	18	12	89
University ..	25	28	18	6	77
Woodhouse ..	20	19	11	3	53
Holbeck ..	42	53	12	18	125
Armley ..	44	38	27	6	115
Chapeltown ..	42	31	24	4	101
St. Nicholas ..	27	28	15	9	79
Bramley ..	19	21	8	5	53
New Wortley..	31	21	23	4	79
Middleton ..	29	20	18	9	76
Meanwood ..	13	17	17	6	53
West Hunslet	37	19	18	2	76
Harehills ..	25	13	13	1	52
Cross Gates ..	34	25	13	7	79
Burley ..	29	21	16	6	72
*Halton ..	3	7	4	..	14
Totals ..	584	489	330	127	1,530

* Taken over from the West Riding County Council on April 1st, 1928.

Leeds Babies' Welcome Association.—The Maternity and Child Welfare Department continued to work in close co-operation with the Leeds Babies' Welcome Association during the year. The Association is to be congratulated on the new premises at Calverley Street (Central Clinic), Armley and Chapeltown. There is always a difficulty in securing suitable buildings. There are still one or two of the Welcomes which are badly housed and for which new premises are urgently needed. I hope it may be possible in the near future to make good this deficiency. The work of the voluntary workers at the various Welcomes was most helpful and their attendance much appreciated.

Sincere thanks are therefore due to the Association—President, Officers, Members of Committee and helpers generally—for their very valuable work during the year, and for their constant loyalty and support.

Artificial Sunlight Clinics.—*Holbeck.*—The sunlight lamp at Holbeck Clinic was used to great advantage throughout the year. Dr. Knowles was in charge of the clinic, and a nurse with special experience carried out the treatment under the doctor's directions.

During the year 405 cases (398 children and 7 mothers) have passed through the clinic. The total number of attendances was as follows:—mothers 45, expectant mothers 3, and children 6,849, a total of 6,897.

The doctor in charge sees each case before, in the middle of, and at the end of the course of treatment. The total seen by her during the year was 552, an average of 12 per session.

Dr. Knowles in her report states that " the rickets cases, and those of malnutrition and general debility, showed very satisfactory results, especially when the children were able to attend regularly over a consecutive period of 3 months or more. Unfortunately, many of those who should have attended regularly were for one reason or another unable to do so and lapsed. The great benefit of sunlight treatment as a preventive of rickets is not yet realised or appreciated by the mothers, and it is often only in cases where an older child with marked rickets is attending that one is able to persuade a mother to bring a young and apparently healthy baby for treatment. Some few cases of very small babies, obviously suffering from malnutrition did attend regularly, and the lessened irritability and marked improvement in their general condition showed that this form of treatment is of some therapeutic value notwithstanding opinions to the contrary recently expressed in certain quarters.

In families where there have been two or three rickety children, a course of sunlight for the mother during her next pregnancy would

seem to be indicated—but so far, efforts in this direction have not met with any success. The time and exertion required for regular attendance, seem to be more than the pregnant woman can manage, and she is not able to realize that the benefit she would receive in improved health, would more than compensate for the extra effort involved."

The X-Ray installation at the Holbeck Clinic was in constant use throughout the year. The total number of cases X-Rayed was 625, an average of 13 per session. The cases sent for X-Ray are mostly rickety children, for diagnosis in early cases, and progress during treatment, orthopædic cases, and ante-natal cases where abnormality is suspected.

Central Clinic.—It was found that the Holbeck Clinic was not accessible to the majority of the mothers and was too small to cope with the increasing numbers requiring this form of treatment. On May 7th two lamps were installed at the Central Clinic, and it is hoped that others will be obtained later for other clinics.

Dr. Forrest is the medical officer in charge of the Central Sunlight Clinic, and a nurse with special experience carries out the treatment under the doctor's directions.

From May 7th, till the end of December 1928, 398 children and 12 mothers passed through the clinic. An average of 17 per session, or a total of 826 examinations were made by the doctor. The attendances made during the year of all cases were as follows, mothers, 186, expectant mothers 33, babies under one year 573, children between one and five years 5,719—a total of 6,511.

The cases treated were mostly rickets, debility, anaemia, malnutrition and catarrhal conditions in the children, and debility, rheumatism and neuritis in the mothers. Arrangements are being made to hold two sessions weekly for mothers only.

Dr. Forrest reports " The cases of rickets treated by the Ultra-Violet Rays have shown a fairly rapid healing of the bones as shown by the X-Ray photographs and where deformity had already occurred definite improvement resulted. In a few cases it was impossible to obtain an X-Ray photograph as the mother would not attend, but these children mainly showed a general improvement. A certain number of cases did not respond ; they came mostly from very poor homes, and bad diet and housing probably outweighed the benefit of the treatment.

Debilitated children, almost without exception, gained weight well and on discharge were bright and active with good colour and improved appetites.

Two cases of asthma were treated and both were completely free from attacks during the period of treatment.

Among the mothers, those suffering from rheumatism showed remarkable improvement. One mother who had been unable to use her hands for several years is now able to do her housework again and is practically free from pain. Those suffering from debility have also benefited."

Orthopædic Clinic.—A scheme for the treatment of cases of orthopædic deformity in children under five years of age was inaugurated on February 13th.

Children for treatment are selected by the doctors at the Centres. One special clinic is held every week at the Central Clinic at which the Orthopædic Specialist attends and examines any children referred to him from the Infant Welfare Centres, and gives instructions as to treatment. Two masseuses are in attendance at that clinic and make the necessary arrangements for artificial sunlight, massage, remedial exercises or electrical treatment as the case may be. Men from the makers of surgical appliances also attend to take measurements for any appliances required. Parents are expected to contribute towards the cost of these appliances as their means will permit, any balance being met by the Corporation.

An agreement has been made with the Leeds General Infirmary to undertake operative treatment in any cases requiring it. Plaster cases are also referred to the Out-Patient Department of that hospital. Children over three and under five years whether on the school register or not and not attending a welcome are treated at the School Clinics and the cost debited to the Health Committee. In this way overlapping of the two services is avoided.

The total number of children referred to the Orthopædic Surgeon during the year was 184 of whom nine were discharged. Most children were re-examined by him within three months or less to see their progress. The total number of attendances was 356, an average of 14 at each session.

Twelve cases were referred to the Infirmary for operation. A total of 45 appliances was supplied at a cost of £32 5s. to the Corporation, of which £16 16s. 3d. was refunded by the parents. Other children with disease of a less severe type or showing suspicious signs of approaching trouble were recommended directly by the doctors at the centres for sunlight, massage and remedial exercises.

There are three trained masseuses who attend regularly at the centres. In all 647 children received massage.

A total of 10,919 treatments were given by the masseuses during the year or an average of about 300 per week.

Dental Clinic.—Since April 21st dental treatment has been available for mothers and children under five years of age. The cases for treatment are referred by the doctors at the Welcomes.

The dental clinic is held at the Central Clinic and the dentist attends five sessions weekly. In addition a doctor attends at one session for the administration of anæsthetics.

Dental treatment is very necessary alike for the mother (especially the expectant mother) and the child, and the facilities provided could be taken advantage of even more than they are at present. Many mothers do not appreciate the dangers of unsound teeth, and delay treatment as long as possible. However, they are gradually being taught the benefits of dental care, and its affects upon their general health and well-being, especially during and after pregnancy. There were 165 children under five, 220 nursing mothers and 166 expectant mothers received treatment during the year. The number of treatments given was to children 605, to nursing mothers 2,304 and to expectant mothers 1,063, a total of 3,972.

A scheme for provision of dentures to mothers at favourable rates has just been adopted and will soon be in operation.

Auxiliary Clinic for Venereal Diseases.—At one session weekly a medical officer from the Venereal Diseases Department attends at the Central Clinic and examines any patients thought to be suffering from venereal disease and referred for another opinion. Of those who are definitely diagnosed as having the disease some are treated at the clinic, whilst others are referred to the Venereal Diseases Department at the Leeds General Infimary for further treatment. The total number of new patients was 43, comprising 10 mothers, 22 expectant mothers, nine babies under one year, and two between one and five years.

Diphtheria Immunization.—Facilities have been available for immunizing children against diphtheria since June 30th. A total of 65 children had complete courses of injections. The "Schick" test was applied to 67 of whom 38 gave positive reactions; two defaulted, and the others were negative.

The number coming up for immunization is disappointingly small. The co-operation, interest, and consent of the parents are, of course, essential, and these can be obtained only by patient and tactful propaganda at the infant welfare centres. It is difficult to make the parents realize that diphtheria with its attendant suffering, and possible permanent crippling or even death can be prevented. If immunization became universal it would also mean a saving to the city in the expense of hospital upkeep.

Milk Distribution.—Particulars respecting the amount of liquid and dried milk supplied to necessitous mothers attending the Welcomes are given in the accompanying tables. As in previous years the scheme has been in the hands of a special Committee composed of representatives from the Maternity and Child Welfare Committee, the Leeds Babies' Welcome Association and other outside bodies engaged in social work.

The Committee met on 49 occasions, and considered 7,998 applications, which was 436 less than the previous year. In addition it supervised generally the work of the milk staff, details of which appear in the table on page 154.

The amount of dried milk distributed during the year was 53,202 lbs., a decrease of 12,905 lbs. as compared with the previous year. As regards the recipients there was a decrease from 4,101 in 1927 to 3,347 in 1928.

The amount of cows' milk distributed increased from 23,980 to 39,936½ pints, and the number of recipients increased from 209 in 1927 to 408 in 1928.

An arrangement was made whereby the Guardians pay for milk supplied to mothers in receipt of poor relief. This came into operation on the 1st of October. The mothers are referred by the doctors at the Welcomes to the relieving officer and the district medical officer, who issue vouchers for the milk. In the case of dried milk the mothers present the vouchers at the clinics and receive the milk.

The amount of milk issued through the Board of Guardians for the three months was 920¾ lbs. of dried milk and 993 pints of cows' milk.

The cost of the milk distribution scheme for the year was £3,951 10s. 4d. which works out at a nett cost to the Corporation of £1 1s. 0½d. per head.

Amount of Dried Milk Distributed in Lbs. (Year 1928).

Welcome.	Free.	Assisted.	Full Price.	Issued through Board of Guardians.†	Total.
Ellerby	3,685	3,093	58½	125½	6,962
West Street ..	3,410	1,937¾	52	123¼	5,523
Burmantofts ..	1,627	1,829¾	102½	140¾	3,700
Hunslet	2,997¼	2,928½	234¼	86	6,246
University ..	1,923½	1,745¼	105¾	59	3,833½
Woodhouse ..	1,243¼	1,094½	106¾	32¼	2,476¾
Holbeck	2,552¾	1,682½	330	17	4,582¼
Armley	807	1,133¼	197½	7	2,144¾
Chapeltown ..	1,523½	2,151½	366¾	103¼	4,145
St. Nicholas ..	3,160¼	1,846¾	174½	102	5,283½
Bramley	218	242¼	185¾	10	656
New Wortley ..	1,231	691¾	97¾	4	2,024½
Middleton ..	1,227¼	747¼	72¼	29½	2,076¼
West Hunslet ..	613¾	590¾	238	50¼	1,492¾
Burley	19	101	50	10	180
Crossgates ..	418	381	33	..	832
*Halton	28¼	14½	8	..	50¾
External ..	611¼	360¾	..	21	993
Totals ..	27,296	22,572	2,413¼	920¾	53,202

* From 1st April, 1928. †Commenced issuing through Board of Guardians, 1st October, 1928.

Number of Recipients, Year 1928 (Dried Milk).

Welcome.	Free.	Assisted.	Full Price.	Total.
Ellerby	225	135	13	373
West Street	147	94	10	251
Burmantofts	129	102	21	252
Hunslet	118	181	33	332
University	125	114	21	260
Woodhouse..	84	67	13	164
Holbeck	131	165	34	330
Armley	71	75	36	182
Chapeltown	113	115	37	265
St. Nicholas	160	130	24	314
Bramley	13	24	27	64
New Wortley	67	58	13	138
Middleton	30	26	8	64
West Hunslet	25	30	28	83
Burley	5	10	6	21
Crossgates	33	24	14	71
*Halton	4	2	5	11
External	124	48	..	172
Totals	1,604	1,400	343	3,347

* From 1st April, 1928.

Amount of Cows' Milk Distributed in Pints. (Year 1928).

Welcome.	Free.	Penny per pint.	Two-pence per pint.	Issued through Board of Guardians.†	Total.
Ellerby	4,885	205	120	..	5,210
West Street ..	1,740½	148	82	49	2,019½
Burmantofts ..	2,447½	..	29	..	2,476½
Hunslet	2,700	468	149	66½	3,383½
University ..	2,827	437½	86	166	3,516½
Woodhouse ..	965	134	413	299	1,811
Holbeck	2,036½	..	..	89	2,125½
Armley	2,690	210	231	..	3,131
Chapeltown ..	2,840½	131	..	..	2,971½
St. Nicholas ..	1,815	16	28	70	1,929
Bramley	130	..	..	127	257
New Wortley ..	2,196	98	..	..	2,294
Middleton ..	1,052½	..	..	..	1,052½
West Hunslet ..	1,060½	135	..	14	1,209½
Burley	..	..	..	..	..
Crossgates ..	449	..	..	..	449
*Halton	51½	11	..	91½	154
External ..	4,793½	933	199	21	5,946½
Totals ..	34,680	2,926½	1,337	993	39,936½

Number of Recipients Year 1928.

Welcome.	Free.	Penny per pint.	Two-pence per pint.	Total.
Ellerby	33	2	1	36
West Street	24	3	2	29
Burmantofts	21	..	1	22
Hunslet	28	7	1	36
University	26	6	2	34
Woodhouse..	17	1	4	22
Holbeck	24	..	..	24
Armley	25	2	2	29
Chapeltown	21	1	..	22
St. Nicholas	18	1	1	20
Bramley	2	..	..	2
New Wortley	17	2	..	19
Middleton	9	..	..	9
West Hunslet	10	2	..	12
Burley	..	..	..	..
Crossgates	5	..	..	5
*Halton	2	1	..	3
External	66	13	5	84
Totals	348	41	19	408

* From 1st April, 1928. † Commenced issuing through Board of Guardians, 1st October, 1928.

Work of Milk Staff.

	I. Quarter.	II. Quarter.	III. Quarter.	IV. Quarter.	Year.
Applications dealt with (new)	333	247	320	283	1,183
,, ,, (repeat)	3,316	2,607	2,966	3,006	11,895
,, ,, (refused)	..	..	..	..	..
No. of re-applications ..	94	131	165	142	532
*No. of external cases dealt with at the office ..	233	192	221	257	903
	3,976	3,177	3,672	3,688	14,513
No. of visits to Welcomes paid by the milk secretaries	157	149	131	158	595

* Persons under treatment at the Public Dispensary and the General Infirmary.

Cost of Milk Distribution Scheme for Year ended 31st December, 1928.

Income.	£	s.	d.	Expenditure.	£	s.	d.
To cash received for sale of dried milk ..	1,388	8	6	By salaries and wages	623	10	0
				,, Cost of dried milk	4,038	14	10
				,, Cost of cows' milk	588	17	10
				,, Printing, stationery, etc.	51	5	11
				,, Superannuation Contributions ..	29	12	2
,, balance—loss	3,951	10	4	,, Sundries	7	18	1
	£5,339	18	10		£5,339	18	10

Nett cost per head to Corporation, £1 1s. 0½d.

THE INFANTS' HOSPITAL, WYTHER.

The number of cots in this hospital is 50, 12 for babies under one year, and 38 for children from one up to five years. Two of the latter are kept for isolation purposes. The nursing staff consists of matron, one sister, three staff nurses, one senior nurse and thirteen probationers. There is also one whole-time trained nurse who does massage and light treatment, but who does not reside in the hospital. A Montessori teacher visits the hospital four half-days in the week.

The cases chiefly dealt with during the year were dietetic disorders, rickets, malnutrition and marasmus. A mercury vapour lamp was installed in May and artificial sunlight treatment is given to children when advisable three times a week. This has been a great boon, because although the children are out in the open air as much as possible, the diseases from which they are suffering necessitate for their cure more sunlight than is obtainable in a city like Leeds.

Details of the work in the hospital are given in the attached tables.

SUMMARY OF CASES TREATED IN THE INFANTS' HOSPITAL, WYTHER.

	Males.	Females.	Total.
Remaining in Hospital, January 1st, 1928	17	22	39
Admitted during the year ..	101	76	177
Discharged during the year ..	82	72	154
Died during the year	13	7	20
Remaining in Hospital, December 31st, 1928	23	19	42

Mortality rate per cent. on admissions 11·3. Average stay in Hospital 73 days.

CLASSIFICATION OF ADMISSIONS ACCORDING TO AGE AND SEX.

Males.		Females.		Total Infants		Grand Total.
Under 1 year.	Over 1 year.	Under 1 year.	Over 1 year.	Under 1 year.	Over 1 year.	
31	70	22	54	53	124	177

Analysis of Cases Treated during 1928.

Reason for admission.	Under one year.		Over one year.		Total.
	M.	F.	M.	F.	
Rickets	3	2	27	29	61
Rickets and malnutrition	..	1	13	12	26
Rickets and debility after pneumonia	..	..	2	..	2
Rickets and chronic enteritis	..	..	4	..	4
Rickets and hyperpyrexia	..	..	1	1	2
Rickets, malnutrition and whooping cough	..	..	2	..	2
Rickets and corneal ulcer	..	..	..	1	1
Rickets and broncho pneumonia	..	..	1	..	1
Rickets, marasmus and convulsions	..	..	1	..	1
Rickets and infantile paralysis	..	..	1	..	1
Rickets and pyelitis	..	..	..	1	1
Rickets—osteoclasis	..	..	1	1	2
Malnutrition	2	2	5	8	17
Malnutrition after pneumonia	..	..	5	3	8
Malnutrition after whooping cough	..	..	..	1	1
Malnutrition and chronic enteritis	4	1	..	2	7
Malnutrition and conjunctivitis	..	..	..	1	1
Malnutrition and cervical abscess—otorrhoea	1	..	1	..	2
Malnutrition and talipes	..	..	..	1	1
Malnutrition and paralysis	..	..	1	..	1
Marasmus	12	9	2	2	25
Marasmus and cleft palate	..	1	..	..	1
Marasmus, whooping cough and convulsions	..	..	1	..	1
Marasmus, chronic enteritis and prematurity	..	1	..	..	1
Marasmus and chronic enteritis	2	..	..	..	2
Marasmus, acidosis and thrombosis	1	..	..	..	1
Improper feeding	2	1	..	..	3
Prematurity and inanition	1	3	..	..	4
Prematurity and marasmus	..	1	..	..	1
Bronchitis	3	1	..	1	5
Broncho-pneumonia	1	..	..	1	2
Broncho pneumonia and empyema	..	..	2	1	3
Broncho pneumonia and malnutrition	1	..	..	..	1
Chronic enteritis	4	..	4	3	11
Pyelo-nephritis and congenital absence of left kidney	..	..	1	..	1
Infantile paralysis	..	..	2	1	3
Tubercular abscess of neck	..	..	1	..	1
Tuberculous meningitis	1	..	..	..	1
Mongolian idiot	..	..	1	..	1
Spina bifida	..	1	..	..	1
Scurvy	..	1	..	..	1
Congenital heart disease	..	1	..	..	1
Spinal caries and corneal ulcer	..	..	..	1	1
For observation	..	..	1	1	2
Total	38	26	80	72	216

ANALYSIS OF DEATHS DURING 1928.

Cause.	Under one year.		Over one year.		Total.
	M.	F.	M.	F.	
Marasmus and cleft palate	..	1	..	..	1
Marasmus	2	1	..	..	3
Marasmus, whooping cough and convulsions	..	..	1	..	1
Marasmus, chronic enteritis and prematurity	..	1	..	..	1
Marasmus and chronic enteritis	1	..	..	..	1
Malnutrition and chronic enteritis	2	..	..	..	2
Prematurity and marasmus	..	1	..	..	1
Prematurity and inanition	1	3	..	..	4
Chronic enteritis	1	..	..	..	1
Pyelo-nephritis and congenital absence of left kidney	..	..	1	..	1
Broncho pneumonia and malnutrition	1	..	..	..	1
Broncho pneumonia and empyema	..	..	1	..	1
Tuberculous meningitis	1	..	..	..	1
Rickets and broncho pneumonia	..	..	1	..	1
TOTAL	9	7	4	..	20

Day Nursery.—There is accommodation in the Day Nursery for 40 children. The nursing staff consists of one matron, one staff nurse, and 9 probationers. The number of children who have been regular attenders for whole or half days during the year was 35. The total attendances are given in the accompanying table.

The Montessori teacher visits the Nursery four half days in the week.

There is always a waiting list of children for the nursery. An extension of the present premises, or preferably a more suitable and larger building, with grounds, is very necessary. The difficulty however, is to secure a building which, besides being suitable in itself, is centrally situated and easy of access to the working mothers.

Residential Nursery.—The number of cots in the Residential Nursery is 28 (two of which are kept for isolation purposes). The nursing staff consists of one matron, one sister, and 10 probationers.

The Montessori Teacher visits three half days in the week.

There were 22 children in residence on January 1st, 1928, 57 were admitted during the year and 20 remained in residence on December 31st. Sixteen of the children were illegitimate. The average length of stay was 107 days. The reasons for admission were as follows:—in 23 cases mothers expecting confinement; in 8 cases, mothers died; in 18 cases, mothers going to work; in 29 cases, illness of mothers; in 1 case, father at sea—mother at work.

I should like once more to express my appreciation of the work of the Executive Committees of the Day and Residential Nurseries, whose services given voluntarily and ungrudgingly have been of great value to both institutions.

TOTAL ATTENDANCES OF RESIDENT AND DAY CHILDREN AT THE NURSERIES, IN AGE GROUPS FOR THE YEAR ENDED 31ST DECEMBER, 1928.

Nursery.	Whole attendances.				Half attendances.			
	Under 3 years.	3-5 years.	Over 5 years.	Total.	Under 3 years.	3-5 years.	Over 5 years.	Total.
Red House Residential Nursery ..	8,479	35	..	8,514	..	..	..	..
Cobden Place Day Nursery	7,349	2,100	..	9,449	500	176	..	676

Convalescent Treatment for Mother and Babies.—Arrangements were made as in previous years for children from 3 to 5 years to have a period of convalescence after sickness at the Meanwood Convalescent Home. During the year 221 children went and all benefited greatly. The average stay was 26·6 days, and the cost to the Corporation was £3 18s. 3¾d. per head. The parents contributed towards the cost where means permitted. The total cost to the Corporation was £865 6s. 4d. of which £45 15s. 6d. was refunded by the parents.

During the year arrangements for the convalescence of mothers with babies through the Leeds Adult Convalescent Society were continued on behalf of the Maternity and Child Welfare Committee, as in the previous year. The number of mothers with babies for whom convalescence was thus arranged was 111 and for mothers without babies 6. The average stay at the Convalescent Homes was 14·1 days. The nett cost to the Corporation of this provision was £493 1s. 2d. or an average of £2 1s. 11½d. per case per week. Some of the mothers were able to contribute something towards their convalescence, the total amount contributed being £43 5s. 10d.

All the mothers and babies were greatly improved by their stay at the homes, and there was the added benefit in the majority of cases of being able to let the baby accompany the mother.

Inspection and Supervision of Food.

INCLUDING REPORTS BY

J. A. DIXON, M.R.C.V.S., Chief Veterinary Officer,

and

C. H. MANLEY, M.A., F.I.C., City Analyst.

The year was marked by changes in the staffing and re-organisation of the food section of the Department of an important and progressive character. In fact it may be said that for the first time in the history of the Public Health Services of the City "Food and Drugs" assumed its proper place as a sub-department of the Health Department under the immediate control of the Chief Veterinary Officer who is responsible for the executive work to the Medical Officer of Health.

For some time it had been recognised that with the increase of the work relating to the inspection of meat and food and the control of the milk supply resulting on the one hand from the promulgation of new legislation by the Government, and on the other, by the extension of the City boundaries, the augmentation of the inspectorial staff was inevitable. At the same time it was felt that the division of responsibility for the veterinary services required by the various Acts of Parliament relating to Diseases of Animals, Meat Inspection, the Inspection of Dairies and Cowsheds, etc., between the Markets and the Health Committees was no longer defensible. Proposals to co-ordinate them under the control of the Health Committee were therefore presented to the Council on August 1st, and duly approved. Incidentally the scheme also included the veterinary inspection of the horses employed by the Cleansing Committee.

In furtherance of the new proposals an additional whole-time veterinary officer (Mr. E. F. McCleery, M.R.C.V.S., D.V.S.M.,)

was added to the staff together with two lay inspectors, one for Cowsheds and Dairies and the other for the Inspection of Meat and other foods in shops, restaurants, and the kitchens and stores of large hotels. The food and drugs inspectors whose duties are largely concerned with the protection of the City's food supplies were also attached to the staff of the new sub-department, the whole being placed under the executive control of the Chief Veterinary Officer at whose disposal a suite of offices in the new portion of the meat Market was placed for the accommodation of the Assistant Veterinary Officer and Meat Inspectors, he himself retaining his own private office at 12, Market Buildings.

The establishment of this sub-department marks an epoch in the history of the Public Health Department which is significant of the increased attention being paid in these days to the food of the people as well as to the advantages to be gained from the linking up of cognate services.

The transfer of the administration of the Diseases of Animals Acts and all orders of His Majesty's Privy Council and the Minister of Agriculture and Fisheries in relation thereto from the Markets Committee to the Health Committee has already proved of immense value and has greatly strengthened and improved this service. The Chief Veterinary Officer is now in the most intimate touch with the breeding and keeping of food animals in the City as well as with their slaughter and disposal. He is also in a position to deal effectively, and without delay, with any outbreak of disease which may occur in the dairy herds, and to keep a close watch on the movement of animals into and out of the City.

That disease in animals has a relationship to human disease is not now disputed, and the responsibility for securing the health of food animals therefore not inappropriately falls upon the shoulders of the department concerned with the protection of the health of the human population. The administration of the new sub-department has been delegated by the Health Committee to a special Sub-Committee known as the Public Health (Diseases of Animals, Milk and Meat) Sub-Committee which meets monthly and to which all matters relating to diseases of animals, meat inspection, the inspection of dairies and cowsheds and food analysis are referred.

MEAT INSPECTION

BY

J. A. Dixon, M.R.C.V.S., Chief Veterinary Officer.

As already stated, during the year the staff available for the inspection of meat and other foods was increased by the appointment of an Assistant Veterinary Officer, and an additional lay assistant meat inspector. The staff engaged in the inspection of meat and other foods now consists of two Veterinary Officers and four lay Assistant Meat Inspectors.

The Public Abattoir which is the pivot of this section of the Department's activities is under constant observation and the private slaughterhouses in the City are divided for routine inspection amongst the lay assistants, one of whom has the special duty of the inspection of the kitchens and cookhouses of large hotels and restaurants, and all places where articles of food are stored.

During the year the new extension to the Public Abattoir and Wholesale Meat Market was completed and occupied, thereby increasing the facilities for the slaughtering and distribution of meat. Unfortunately the number of private slaughterhouses has not been reduced. Incidentally the extension of the Public Abattoir provides a large and well-equipped slaughterhouse for the killing and dressing of pigs, though the great majority of pigs continue to be slaughtered in private establishments.

Tuberculous Carcases.—The number of carcases condemned for tuberculosis during 1928 was as follows:—beef with organs 211, pork with organs 111.

Slaughterhouses.—During the year the number of private slaughterhouses was increased by one, this being a licensed slaughterhouse taken over on April 1st, by the extension of the City. The private slaughterhouses, both registered and licensed, have been well conducted.

The practice of sub-letting private slaughterhouses continues. For some reason butchers are reluctant to slaughter in the Public Abattoir; they prefer a private slaughterhouse, even though the space and conditions are not all they might be. Overcrowding is the result, but there are at present no powers to prohibit licensees sub-letting their slaughterhouses in this way. This will be remedied at the first opportunity by including a clause forbidding the practice in the next Local Bill promoted in Parliament.

SLAUGHTERHOUSES IN USE.

	1920.	January, 1928.	December, 1928.
Public Abattoir	1	1	1
Private laughter-houses (registered)	63	46	46
Do. (licensed)	8	9	10
Knackers' Yards	2	2	2

Of the 56 private slaughterhouses remaining on the register, some are used every day, whilst others are not used on more than one or two days a week. The inspectors paid a total of 8,980 visits to these slaughterhouses, or an average of 160 visits or 3 visits per week to each private slaughterhouse.

Humane Slaughtering.—Efforts to induce butchers to use a mechanical operated instrument for the slaughtering of animals for food have been continued, but without tangible result. I fear that this very desirable reform will only be effected by the City Council adopting and putting into force the special byelaw suggested in the Model Byelaws of the Ministry of Health.

Legal Proceedings.—During the year proceedings were taken under the Public Health Act, 1875, against a butcher for (*a*) having deposited in his shop for the purpose of sale a beast's liver affected with tuberculosis, and (*b*) having deposited in his slaughterhouse for the purpose of preparation for sale a beast's head and tongue affected with tuberculosis. On the first summons the butcher was fined £5, but on the second he was dismissed.

Public Health (Meat) Regulations, 1924.—The Public Health (Meat) Regulations have been fairly well observed throughout the City.

The butchers with very few exceptions give the required notices of slaughter, but Article 9 requiring a further notification on the finding of disease in its present form continues to occasion trouble. As stated in a previous report the word " forthwith " in the Article is regarded as meaning " immediately," and no effect is spared to impress upon butchers the importance of notifying immediately the finding of any unsound or unusual condition during the dressing of a carcase. One butcher was convicted and ordered to pay costs for an offence against this Article, but in two other instances the summons was dismissed on the ground that a notification sent by post and posted on the day of slaughter satisfied the regulations. This decision of the Court is regrettable as it means that Article 9 is for all practical purposes useless in this City, because whenever disease is found by the inspectors, so long as the carcase was slaughtered on the same day, the owner can always escape conviction by stating that he intended to notify by post.

The marking of meat continues to be entirely ignored. The protection of food exposed for sale from contamination by dust is not entirely satisfactory. It has been pointed out by the Ministry of Health that the Regulations were not intended to enforce the adoption of closed windows for all foodshops, and whilst a certain amount has been done by persuasion, there remain far too many food shops, the open windows of which permit the contamination of the food by street dust. To obtain a conviction in these cases on the ground that the food was not adequately protected would be very difficult because it would involve the proof that the food had in fact been contaminated.

The transport and handling of meat in this City is generally satisfactory and the Regulations in this respect are fairly well observed. During the year it was necessary to institute proceedings in two instances with the result that both persons were fined for conveying meat not in accordance with the Regulations.

The following is a Summary of the cases taken into Court under the Regulations during the year :—

THE PUBLIC HEALTH (MEAT) REGULATIONS, 1924.

PROSECUTIONS FOR THE YEAR 1928.

No.	Offences.	Result of Hearing.	Remarks.
1	Article 9.—Failing to give notice of the finding of disease	To pay costs	Butcher.
2	Article 19 (*a*).—Failing to have his name and address legibly marked on his stall, and	Fined 20/- and costs ..	Meat Purveyor.
	Article 19 (*b*).—Not having his stall suitably protected from mud, filth, etc., being blown on to the meat	Fined 20/- and costs ..	Meat Purveyor.
3	Article 21 (1), sub-para. (*a*).—Conveying meat in a dirty vehicle and	Fined 20/-	Meat Carrier.
	Article 21 (1), sub-para. (*b*).—Conveying uncovered meat in a vehicle	Fined 20/-	Meat Carrier.
4	Article 8.—Failing to give notice of intended slaughter and	Dismissed	Butcher.
	Article 9.—Failing to give notice of the finding of disease	Dismissed	Butcher.
5	Artilce 9.—Failing to give notice of the finding of disease, and	Dismissed	Butcher.
	Article 10.—For removing the organs of a diseased animal from his slaughter-house before inspection by the Inspector of the Local Authority	To pay costs	Butcher.

Shellfish.—Shellfish have been kept under close observation throughout the year and care has been taken that mussels have not been introduced from places prohibited by order of the Ministry of Agriculture and Fisheries. There has been no reason to complain of the quality of shellfish and no samples have been submitted for bacteriological investigation.

The appended table indicates the amount of diseased and unsound meat and other food condemned and disposed of during the year.

MEAT, ETC., DESTROYED BY CONSENT.

	1928.	1927.	1926.	1925.
Beef	177,389 lbs.	159,943 lbs.	122,471 lbs.	134,725 lbs.
Veal	8 790 ,,	5,295 ,,	7,580 ,,	7,767 ,,
Mutton	13,931 ,,	12,545 ,,	8,894 ,,	8,279 ,,
Bacon and Ham..	53 ,,	384 ,,	160 ,,	82 ,,
Pork	35 239 ,,	27,003 ,,	16,785 ,,	14,987 ,,
Goat Flesh ..	60 ,,	..	..	70 ,,
Offals	75,775 ,,	53,988 lbs.	43,521 lbs.	39,931 ,,
Rabbits	7 544 ,,	9,607 ,,	11,815 ,,	9,839 ,,
Poultry	3 154 ,,	1,954 ,,	3,267 ,,	2,758 ,,
Game	976 ,,	541 ,,	549 ,,	545 ,,
Cheese	.. ,,	1,456 ,,	..	..
Fish	84,693 lbs	75,363 ,,	91,537 lbs.	80,882 lbs.
Shellfish	55 325 ,,	43,718 ,,	72,901 ,,	70,621 ,,
Fruit	13 821 ,,	12,184 ,,	42,439 ,,	27,606 ,,
Vegetables ..	34 391 ,,	60,536 ,,	159,525 ,,	75,581 ,,
Inedible fungi ..	..	95 ,,	..	..
Edible fungi ..	255 lbs.	43 ,,	50 lbs.	634 lbs.
Yeast	1,080 ,,	736 ,,	4,794 ,,	2,381 ,,
Tinned Goods ..	1 601 ,,	3,430 ,,	1,538 ,,	7,883 ,,
Sundries	132	190 ,,	30 ,,	465 ,,
TOTALS ..	514,209 lbs.	469,011 lbs.	587,856 lbs.	485,036 lbs.
No. of Eggs ..	..	2,325	7,725	23,110

DISEASES OF ANIMALS ACTS

BY

J. A. Dixon, M.R.C.V.S., *Chief Veterinary Officer.*

Although the Public Health Department had administered the Tuberculosis Order of 1925 since its introduction, it was not until November 9th of this year that the Department was made responsible for the administration of the many other Orders made under the Diseases of Animals Acts. On that day the complete administration of the Diseases of Animals Acts and the Orders made thereunder was transferred to the Public Health Department, and the Chief Veterinary Officer and his Assistant were duly appointed Chief Inspector and Deputy Inspector respectively for purposes of this administration. These Officers are therefore responsible for the veterinary oversight of all Markets and sales of livestock held within the City, the issue of licences for the movement of animals and the control of animals which have recently been moved by licence and are subject to a period of detention. Tuberculosis, however, remains the most important subject dealt with under these Orders.

Tuberculosis Order of 1925.—During the year, 65 notifications of tuberculosis in cattle under the Tuberculosis Order were reported, 23 being from owners and three from veterinary surgeons, whilst 39 animals suspected of being affected by the disease were discovered by the veterinary officers during the course of their routine inspections under the Milk and Dairies Order, 1926. Thus again, as in previous years experience has proved that the Tuberculosis Order can be effective only when regular routine veterinary inspection is carried out.

The investigations conducted under the Order, involved the examination of 1,290 cows in milk, 156 other cows or heifers, and 26 other bovine animals. Forty animals were slaughtered all of which, on post-mortem examination, were found to be affected, 12 with tuberculosis of the udder, 15 with tuberculous emaciation, and 13 otherwise. The owners of the 40 cows condemned received compensation as follows :—34 at the lowest rate, namely, one-fourth of the agreed value or 45/–, whichever was the highest, whilst six received compensation at the rate of three-fourths of the agreed value. In addition to dealing with cows suffering from tuberculosis within the City, the Tuberculosis Order empowers the Veterinary Inspector to order the removal from a Market or Auction of any

animal which he considers to be affected with tuberculosis within the terms of the Order, and during the year such action was taken with respect to seven cows at the Victoria Cattle Market, and four at the Whitkirk Auction Mart. Eight animals were slaughtered and on post-mortem examination five were found to be suffering from advanced tuberculosis and the carcases and organs condemned ; two were suffering from localised tuberculosis and parts of the carcases only were condemned, whilst the remaining animal was found to be affected with Johnes disease and the carcase was passed. The remaining three animals were ordered to be removed and taken back to the farms outside the City to which they belonged, being dealt with by the local authority in whose district the respective farms were situated.

Regulation of Movement of Swine Order of 1922.—Under the above-mentioned Regulations it was found that the purchasers of pigs at the Whitkirk Auction Mart were, in some instances, careless in obtaining licences for their movement, and it was found necessary to institute proceedings in two cases. One pigkeeper was fined 10/– or 7 days imprisonment, whilst in the other case, the defendant was found guilty but dismissed under the Probation of Offenders Act. In both cases the offence was for moving pigs which were under detention to a slaughterhouse without first obtaining a licence. Another pigkeeper was warned by letter for moving pigs from Whitkirk Auction Mart without first having obtained a licence.

Parasitic Mange Order of 1911.—One horse affected with psoroptic mange was reported during the period under review and at the end of the year the horse was still under treatment and the premises remained infected.

Exportation and Transit of Horses, Asses and Mules Order of 1911.—The forwarding of horses to ports for the purpose of slaughter and the exportation of their carcases received considerable attention and every horse forwarded for such purpose is inspected immediately before entrainment to ascertain if it is free from contagious disease and fit to travel. During the portion of the year under consideration 26 animals were examined in this respect.

General routine work was carried on under the other Orders but as the period under review is so short, little can be said.

In future when the report under this heading covers a complete year, it is hoped that the Department will be able to make a more comprehensive statement.

Tuberculosis Order of 1925.

Annual Return on the working of the above-mentioned Order for the year ending December 31st, 1928.

Total Number of Animals Reported—			65
(*a*) By Owner			23
(*b*) By Veterinary Advisor to owner			3
(*c*) By Veterinary Inspector acting under the Milk and Dairies Order, 1926			39
Animals Examined—			
(*a*) Cows in milk			1,290
(*b*) Other Cows or Heifers			156
(*c*) Other Bovine animals			26
Animals tested with Tuberculin			—
Results of Post-mortem Examination—			
(*a*) Having Tuberculosis of the Udder			12
(*b*) Giving Tuberculous Milk and showing lesions of Tuberculosis			—
(*c*) Suffering from Tuberculous Emaciation			15
(*d*) Affected, but not as in *a*, *b*, or *c*			13

Compensation Payable—		£	s.	d.
(*a*) Full value	(0)	0	0	0
(*b*) Three-fourths value	(6)	66	0	0
(*c*) One-fourth value or 45/-	(34)	94	0	0
Total Compensation		£160	0	0
Total Salvage received		68	11	10
Nett Compensation		91	8	2
Recoverable from Government, 75% of Gross Compensation		120	0	0

Administration Expenses—	£	s	d.
(*a*) 1. Veterinary examinations	0	0	0
2. Cost of tuberculin	0	0	0
3. Notification fees	0	5	0
(*b*) Reference to a Pathological Institute	6	0	0
(*c*) Valuation of Animals slaughtered	1	6	0
(*d*) 1 Cost of travelling	83	10	4
2 Veterinary Officers' Expenses	0	14	0
Total Expenses	£91	15	4

In addition to the particulars mentioned above, seven animals were discovered by the Veterinary Inspector at the Victoria Cattle Market, and four at the Whitkirk Auction Mart, and ordered to be removed. Eight animals were slaughtered and on post-mortem examination five were found to be suffering from advanced tuberculosis and the carcases and organs condemned, two were suffering from localised tuberculosis and parts of the carcases were passed as fit for human consumption, whilst the remaining animal was found to be affected with Johnes Disease and the carcase was passed.

The remaining three animals ordered to be removed from the Market or Auction Mart were taken back to the farms outside the city from which they had come.

MILK AND DAIRIES.

BY

J. A. DIXON, M.R.C.V.S., *Chief Veterinary Officer.*

Cows and Cowsheds.—The total number of farms in the city visited for purposes of inspection of cows and cowsheds was 194, and the total number of visits paid was 788. Three farmers discontinued and three commenced the keeping of dairy cows during the year, whilst 46 farms were added by the inclusion of Templenewsam, Austhorpe, and Colton on the Eastern, and Eccup and Alwoodley on the Northern boundaries of the City on April 1st, leaving at the end of the year a total of 191 farms on the register or 46 more than in the previous year.

In the first quarter of the year the number of cows in the City was 2,136. In the remaining three quarters after the absorption of the new areas the average number was 2,927, an increase of 791 or 37·0 per cent. The total number of examinations made by the veterinary officers during the year was 10,945, an increase of 1,982 on the figure for last year. At 10,681 (or 97·6 per cent.) of the examinations the cows were found to be clean, and at 264 (or 2·4 per cent.) dirty. As regards the health of the 2,927 cows examined, 76 (or 2·6 per cent.), were found to be diseased, 10 (or 0·3 per cent.) having tuberculosis of the udder, 7 (or 0·2 per cent.), generalised tuberculosis, and 59 (or 2·0 per cent.), diseases other than tuberculosis. In all cases where tuberculosis was diagnosed the animals affected were dealt with under the Tuberculosis Order of 1925.

The 191 registered dairy farms comprise 315 separate sheds all of which are kept under close supervision by the Veterinary Officers assisted by the two lay Cowsheds and Dairies Inspectors. The Veterinary Officers made 1,161 inspections of cowsheds and the lay inspectors 1,683, a total of 2,844. In addition 290 special inspections were made in the early morning in order to supervise the methods of milking in practice at the various farms. At 1,091 (or 94·0 per cent.), of the Veterinary Officers visits the sheds were reported clean, whilst at the remaining 70 (or 6·0 per cent.), they were dirty. The number of yards inspected by the Veterinary Officers was 182, with a total number of inspections of 686. At 637 (or 92·9 per cent.) of the visits the yards were clean, and at 49 (or 7·1 per cent.), dirty. The visits of the lay inspectors were largely of the "follow up" variety to see that the instructions

of the Veterinary Officers were carried out and to give practical advice and help with regard to alterations to structure or improvements in methods of milking.

Milk and Dairies Order, 1926.—The standard of cleanliness observed by registered dairymen in the production and handling of milk continues to show improvement. In the great majority of places the cows are regularly groomed and a considerable number of farmers have adopted as a regular practice the clipping of the flanks and udders of the cows in order to facilitate cleansing. The udders are regularly washed immediately before each milking and generally speaking, the milkers wear overalls. These improvements in methods can be ascribed directly and solely to the strict enforcement of the Milk and Dairies Order and to the constant supervision by the Veterinary Officers and the lay inspectors.

The lighting, ventilation, and paving of cowsheds continues to receive attention. Two new cowsheds were built during the year, and whilst the cowsheds in the City prior to extension were fairly satisfactory, a considerable number of the sheds in the newly added areas were considerably below standard. Some were quite unusable. Notices have been served in accordance with the Order wherever improvement is required, but it is necessary to await the expiration of the 18 months allowed by the Order for the improvements to be effected before any further action can be taken.

In all cases some provision has been made for the storage of churns and other utensils, and for the cooling and storage of milk, but at many farms the provision is inadequate. At some it is purely of a temporary character made by the alteration of parts of existing buildings, whilst at others proper milk rooms have been erected.

Some difficulty has been encountered with reference to the cooling of milk. At first sight Article 24 of the Order relating to this subject appears to be quite satisfactory but in practice it is found that the exemptions are too general. It is desirable that all milk should be cooled immediately it is produced, but in practice by arrangement between the farmer and the retailer this is often evaded. An attempt to enforce the order was frustrated in one instance by the Court which held that the arrangement referred to above was quite legitimate and in consonance with the Order. The effective cooling of milk largely depends upon the water supply. Where that is unsatisfactory, cooling is impossible, especially in

warm weather. In several cases the water supply has been improved by connecting up the dairy to the town mains, and in all except two of the dairy farms within the area of the City prior to extension, the water supply is adequate. As in the case of structural alterations a period of eighteen months is allowed after service of the notice for provision of a proper water supply in which to comply. In the newly added areas the situation is less satisfactory. Many of the farms are without an adequate supply of water and are situated at such a distance from the town mains as to make any proposal to extend the latter uneconomical. Notices have been served wherever a satisfactory supply is available and efforts will be made to obtain compliance before the expiration of the fixed period of eighteen months.

On October 1st, Articles 27 and 29 of the Order relating to the pattern and structure of milk churns came into operation. The subject was taken up immediately with the local representatives of the Farmers' Union and the Retail Milk Purveyors' Association, and, although at the end of the year no prosecutions had been undertaken, some improvement in the type and condition of milk churns was observed. Many of the churns in use are unsatisfactory and should be scrapped. To put milk into a churn which by reason of its design or bad state of repair cannot be properly cleansed is simply to invite premature souring and waste.

During the year 15 dairies were removed from the register for various causes, and 46 new registrations were made, leaving at the end of the year 555 dairies on the register. These are now under the regular inspection of the food and drugs inspectors and during the year 1,777 visits of inspection were made. Although the registered dairies comply with the Milk and Dairies Acts and Order, the structure and management of a considerable number are not considered entirely satisfactory. There can be no doubt that too many " small men " are engaged in the distribution of milk which results in a large number of improvised and unsuitable places being used for the storage and handling of milk. In quite a number of cases where small shops have been registered as dairies, it has been found that from time to time other commodities have been introduced, which, though not objectionable in themselves, take up a large part—often the best part—of the available space to the detriment of the milk which is relegated to a corner or even removed to a position of less security as far as risk of contamination is concerned.

The following is a summary of the cases taken into Court under the Milk and Dairies Order during the year :—

MILK AND DAIRIES ORDER, 1926.
PROSECUTIONS FOR THE YEAR 1928.

No.	Article.	Result of Hearing.	Remarks.
1	Article 23 (2) ..	Dismissed under the Probation of Offenders Act on payment of 20/– costs	Farmer.
	,, 23 (2) ..	Do. do. ..	Employee.
	,, 15 ..	Do. do. ..	Employee.
2	Article 23 (2) ..	Fined 20/– or 7 days	Farmer.
	,, 23 (2) ..	Fined 40/– or 14 days	Employee.
	,, 23 (2) ..	Do. do.	Employee.
	,, 15 ..	Fined 20/– or 7 days	Employee.
3	Article 6 (3) ..	Dismissed and allowed costs against the Corporation	Retailer.
4	Article 24 (1) ..	Dismissed	Farmer.
5	Article 24 (2) ..	Dismissed and allowed costs against the Corporation	Retailer.

" Reading " Samples.—During the year at the request of the Director of the National Institute for Research in Dairying at Reading, a special investigation was made into the cleanliness of milk distributed in the City. Over 200 samples were taken and submitted to bacteriological analysis. Several other large towns undertook a similar investigation so that it will be possible to compare results and ascertain how far one town excels or falls short of another as regards the purity of its milk supply. The 200 samples examined in Leeds were selected partly from milk produced within the City, and partly from that imported by road and rail. All the samples were examined for the total bacterial content as well as for the presence of coliform organisms. The work was done in the departmental laboratory. It should be explained that the presence of coliform organisms indicate contamination of the milk with manure, and it has been found that the " life " of milk is associated very intimately with the amount of such contamination. It is interesting and gratifying to find that the quality of the milk produced within the City is considerably better than that imported.

The following tables show the results of the investigation.

"READING" MILK SAMPLES, 1928.

Bacterial Content per c.c.	Local farms.	Road borne.	Rail borne.	Total.
1– 50,000	59 78·7%	36 64·3%	49 71·0%	144
50,000– 100,000	8 10·7%	7 12·5%.	7 10·1%	22
100,000– 200,000	4 5·3%	5 8·9%	8 11·6%	17
200,000– 500,000	3 4·0%	3 5·4%	3 4·3%	9
500,000–1,000,000	1 1·3%	.. ..	.. ..	1
1,000,000 + ..	.. ..	5 8·9%	2 2·9%	7
Total Samples ..	75	56	69	200

Bacillus Coli Content.	Local farms.	Road borne.	Rail borne.	Total.
B. Coli present in 1 c.c.	15 20·0%	8 14·3%	16 23·2%	39
,, ,, 0·1 cc..	19 25·3%	13 23·2%	19 27·5%	51
,, ,, 0·01 c.c.	12 16·0%	11 19·6%	13 18·8%	36
,, ,, 0·001 c.c.	4 5·3%	20 35·7%	16 23·2%	40
B. Coli absent ..	25 33·3%	4 7·1%	5 7·2%	34

Graded Milk and Issue of Licences.—

LICENCES ISSUED UNDER THE MILK (SPECIAL DESIGNATIONS) ORDER, 1923, DURING THE YEAR, AND SHOWING COMPARISON WITH OTHER YEARS.

Description of Licences.	Number in force on 31st December.				
	1924.	1925.	1926.	1927.	1928.
(1) Producers' Licences to use the designation "Grade A" ..	..	4	5	4*	7
(2) Dealers' Licences to use the designation "Certified"	2	1	2	8	7
(3) Dealers' Licences to use the designation "Grade A (Tuberculin Tested)" :—					
(*a*) Bottling establishments ..	..	2	3	4	2
(*b*) Shops	..	57	53	35	22
(4) Dealers' Licences to use the designation "Grade A" :—					
(*a*) Bottling establishments ..	..	..	4	4	4
(*b*) Shops	2	100	140	179	196
(5) Dealers' Licences to use the designation "Pasteurised" :—					
(*a*) Pasteurising establishments	..	..	..	..	..
(*b*) Shops	..	..	..	..	..

*Two licences were revoked during the year by the City Council for failing to comply with the requirements of the Milk (Special Designations) Order, 1923, and are not included in the above figures for 1927.

The four producers holding "Grade A" licences at the end of 1927 all renewed their licences, whilst during the year three new licences to produce "Grade A" milk were issued, including one licence transferred from the West Riding County Council on April 1st when the City boundaries were extended. The number of distributors of "Grade A" milk increased from 179 to 196, whilst the number handling "Grade A (Tuberculin Tested)" milk decreased still further from 35 to 22. As was reported last year, this decrease can only be accounted for by the fact that the "Grade A (Tuberculin Tested)" milk has to be brought long distances, which to some extent affects its keeping qualities.

It will be seen from the above that whilst no progress can be recorded in the popularity of "Certified" and "Grade A (Tuberculin

Tested) " milks, the production and distribution of " Grade A " milk continues to show an increase. But the rate of increase is slow and the fact that tubercle free milk has practically no sale in the City is greatly to be deplored. In view of the considerable amount of propaganda which has been carried out in favour of graded milk, it is disappointing to find that the trade fails to respond to the demand for milk of an assured better quality at a price within the means of the average householder.

The people want the best milk (though they do not always succeed in making their demand articulate) but only the well-to-do can afford to pay 5d., or 6d., a pint for the top grades.

The amount of graded milk produced per day in the City approximates 600 gallons, 350 gallons of which is bottled at the place of production, 75 gallons bottled at a licensed bottling establishment, whilst the remaining 175 gallons are sold in bulk for consumption at the City Hospitals. The last mentioned is produced at the City Council farm at Templenewsam.

It is regrettable that, except for the City Council's herd at Skelton Grange Farm, there is not a single " Grade A " (Tuberculin Tested) " or " Certified " milk herd in the City. The farmers of Leeds appear to shrink from the outlay involved in establishing and maintaining a herd capable of withstanding the tuberculin test, though in explanation it may be said that it would be rather difficult for farmers who recruit their herds by purchase of young stock, in the open market, as do the majority of the local farmers, to secure a regular supply of non-reacting cows.

The slow progress made in the production and sale of graded milk in the city is to a large extent due to the continued hostility on the part of retail purveyors to graded milk of any kind, and their insistence on exacting such a high price for handling milk other than that sold from the old fashioned and unhygienic milk can. Expansion in the consumption of graded milk is further hindered by the extensive sale of spurious imitations. A large quantity of milk is sold in bottles under various " fancy " names which do not infringe the Milk (Special Designations) Order, but give the public the impression that they are buying milk of a superior quality when as a matter of fact they are not. All milk sold in bottles is not graded milk, a fact which the public has failed to grasp, indeed, some of it is distinctly inferior and quite unfit for the feeding of young children. Attempts have been and are being made to amend the Milk (Special Designations) Order so as to improve the designations and render them less ambiguous. The public cannot appreciate the distinction

between the various grades mentioned in the Order and often assume that " Grade A " milk is the first instead of (as it is) the third grade. The sale of milk in bottles also requires regulation so as to protect the public against fraud and wilful deception. I still entertain the hope that the time will arrive when all milk will be graded and delivered in sealed receptacles and that the present method of distribution by hand cans, etc., will disappear.

The cows and premises of all producers of graded milk are inspected monthly by the Chief Veterinary Officer or his assistant who report their findings to the Medical Officer of Health with any criticisms or remarks they have to make. This has entailed 152 visits to farms, 312 inspections of sheds, and 3,160 inspections of cows, all of which work is in addition to the routine inspections carried out under the Milk and Dairies Order of 1926. In the interval between the Veterinary Officers' visits, the farms are visited by the dairies and cowsheds inspectors who see that the premises are maintained in a clean and proper condition, that the methods of production employed are such as to conform with the requirements of the Order, and that any instructions issued by the Veterinary Officers are duly carried into effect.

In addition to the routine inspections of cows and premises, the product of all licensed " Grade A " producers is examined in the departmental laboratory every month. Generally speaking the " Grade A " milk produced in the city is of excellent quality and gives better results as far as the bacterial content is concerned than the imported.

Dairy Farms and Milkshops.—The following tables show the number of registered dairy farms and milkshops in the City on December 31st, 1928.

DAIRY FARMS.

Number of dairy farms in the City on the register on December 31st, 1927	145
Number added to register during the year .. .. (Including 46 in Templenewsam and Eccup, from April, 1928).	49
Number removed from register during the year ..	3
Number on register on December 31st, 1928	191

MILKSHOPS.

Number of milkshops in the City on the register on December 31st, 1927	524
Number added to register during the year	46
Number removed from register during the year ..	15
Number on register on December 31st, 1928	555

The following visits were paid during the year by the Food and Drugs Inspectors and Dairies and Cowsheds Inspectors in connection with the Milk and Dairies Acts and Orders :—

	VISITS
To milkshops	2,727
To cowsheds	2,007
To railway stations..	516
To farms or milkshops *re* infectious disease	48
To food shops and bottled milk stores	570

Guinea Pig Tests.—During the year in addition to the samples of milk submitted to the City Analyst, 75 samples were sent to the School of Medicine for examination for the presence of the tubercle bacillus. Two (or 2·7 per cent.) were returned as positive, both being from farms within the city. In both cases the cows (2) were found on slaughter to be suffering from tuberculosis and dealt with under the Tuberculosis Order of 1925.

Special Bacterial Tests.—Two samples were submitted to the City Bacteriologist for bacteriological analysis. Both were of milk produced in the city by farmers who had applied for graded milk licences. Both samples were returned as being well within the standard prescribed by the Milk (Special Designations) Order of 1923.

Public Health (Prevention of Tuberculosis) Regulations, 1925.—Although no official action was necessary under the above-mentioned Regulations, they have been found helpful in preventing persons handling milk whilst suffering from tuberculosis in an active and infectious form.

Departmental Laboratory.—During the year, 562 samples of milk were examined in the departmental laboratory, comprising 286 samples of graded milk, 44 taken on delivery to local institutions, 32 miscellaneous (*e.g.*, samples brought to the laboratory by farmers, retailers and others) and 200 taken at the request of Dr. R. Stenhouse Williams of the National Institute for Research in Dairying, Reading. The 562 samples involved the making of 1,686 tests. The average keeping quality of the samples of graded milk examined was 3·4 days and the average for the institution milks 2·5 days. Of the graded milk it is of interest to note in the examination for the presence of B. Coli that out of 19 samples that were positive (1/100 c.c. dilution), 12 were from outside the city and seven were produced within the city. In the case of the 1/1000 c.c. dilution, out of 15 samples that were positive, 13 were from outside the city and two were produced within the city. The four graded milks, each with a count above 200,000 bacteria per c.c. were from farms outside the city.

Particulars of the samples examined are as follows :—

SAMPLES EXAMINED AS TO BACTERIAL CONTENT.

Bacterial Content per c.c.	Graded Milk.	Institution Milk.	Total.
1– 5,000 ..	157 54·9%	6 13·6%	163
5,001– 10,000 ..	53 18·5%	8 18·2%	61
10,001– 50,000 ..	57 19·9%	14 31·8%	71
50,001– 100,000 ..	7 2·4%	9 20·5%	16
100,001– 200,000 ..	8 2·8%	1 2·3%	9
200,001– 300,000 ..	1 0·3%	2 4·5%	3
300,001– 400,000 ..	1 0·3%	3 6·8%	4
400,001– 500,000 ..	1 0·3%	.. ..	1
500,001–1,000,000 ..	1 0·3%	.. ..	1
1,000,001+	.. ..	1 2·3%	1
Total Samples ..	286	44	330

SAMPLES EXAMINED AS TO B. COLI CONTENT.

	Graded Milk.	Institution Milk.	Total.
B. Coli present in 1/10 c.c.	44 15·4%	5 11·4%	49
,, ,, 1/100 c.c.	19 6·6%	11 25·0%	30
,, ,, 1/1000 c.c.	15 5·2%	8 18·2%	23
B. Coli absent	208 72·7%	20 45·5%	228
Total Samples ..	286	44	330

Milk Samples tested by the Gerber Method.—During the year 449 samples of milk were tested in the departmental laboratory by the Gerber method, the results of which were as follows :—

Total.	Genuine.	Deficient in fat only.	Deficient in Solids-not-fat only.	Deficient in fat and Solids-not-fat.
*449	343	37	52	17

* These were all informal samples.

The average composition of the 449 samples was :—

Fat	3·29 per cent.
Solids-not-fat	8·66 per cent.
Total solids	11·95 per cent.

Article 13 (1) of the Milk and Dairies Order, 1926, demands that the water supply to farms shall be suitable and sufficient, and 14 samples of water from farms and other premises have been examined as to their bacteriological purity with the following results :—

Containing B. Coli = 6. Free from B. Coli = 8

In addition the following investigations were undertaken :—

Milk examined for the presence of tubercle bacillus	42 samples
Diseased meat, blood and pus for microscopical examination	12 specimens

Other Work :—

Tubes of media prepared	3,010
Microscopic slides prepared, stained and examined in connection with various bacterial tests ..	167
Diseased meat specimens preserved by the Kaiserling method	25

During the year the laboratory has been found of considerable educational benefit and persons interested in a clean milk supply have been encouraged to attend. Individual farmers, dairymen, students, and members of the public have visited the laboratory and had the various steps in the examination of milk samples explained to them.

The greater interest taken in the cleanliness of milk lends importance to the departmental laboratory and if the present rate of expansion of the work continues it will be necessary in the near future to consider enlargement.

FOOD AND DRUGS.

FERTILISERS AND FEEDING STUFFS.

Food and Drugs.—The Food and Drugs Inspectors took 372 formal and nine informal samples of food other than milk and cream. The results of the analysis of which appear in the tables on pages 187 and 188. The total number of formal samples of all kinds taken during the year was 1,499 and informal 21.

Condensed and Dried Milk Regulations.—During the year 17 samples of condensed milk were submitted to the City Analyst for examination. In all cases the contents were reported upon as complying with the regulations, as also were the labels on the samples. It was found necessary however to warn a firm of wholesalers for selling a brand of condensed milk not labelled in accordance with the Public Health (Condensed Milk) Amendment Regulations, 1927. The remainder of the consignment was withdrawn from sale by the wholesalers and returned to the makers for re-labelling.

No samples of dried milk were submitted for analysis during the year.

Public Health (Preservatives, etc., in Food) Regulations.—Two samples of chopped meat were analysed and found to contain 1,100 and 120 parts per million of sulphur dioxide respectively. The Town Clerk's ruling was that chopped meat was not an article of food included in Part I. of the First Schedule of the Regulations and should therefore contain no preservative. In both cases the retailers were warned by letter from the Medical Officer of Health.

A sample of sausage was reported upon as containing 40 parts per million of sulphur dioxide. As this sample when purchased by the sampling officer was not labelled in accordance with the Regulations, the retailer was warned by letter.

A sample of cream submitted for analysis was reported to contain 0·29 per cent. of boric acid. The retailer was warned by letter. All other samples examined in accordance with the Regulations were found to be genuine.

Fertilisers and Feeding Stuffs Act, 1926.—During the year 29 samples were taken under the above-mentioned Act and submitted to the City Analyst for examination. Of this number 26 were samples of Feeding Stuffs, the remaining three being Fertilisers.

Fertilisers.—The work of sampling did not commence until September, and as the season during which fertilisers are chiefly used was over, it was decided to pay more attention to feeding stuffs for the remainder of the year. The three samples taken and submitted for analysis proved to be genuine.

Feeding Stuffs.—Of the 26 samples taken, 18 were taken as formal samples whilst eight were informal. Certificates of analysis have been returned for the samples submitted, and in six of the samples it was found that the material failed to comply with the standard stated on the warranty issued by the manufacturers. The deficiencies in the materials thus sampled were not such as would suggest dishonest methods on the part of the makers.

The visits of the Inspector to the dealers in the City seem to be appreciated. This is not surprising in view of the fact that the certificates issued by the City Analyst enable them to keep a check on the manufacturers without expense to themselves.

MUNICIPAL LABORATORY.

The death in July, 1927, of Mr. B. A. Burrell, F.I.C., F.C.S., who for twelve years had filled the office of Public Analyst for the City, raised the question of the advisability of establishing a municipal laboratory and appointing a whole-time City Analyst. A scheme embodying proposals on these lines received the approval of the City Council in January, 1928. Accommodation for the new laboratory was found at the Tramways Offices in Swinegate in rooms previously occupied by the Highways Department. Plans were prepared and the rooms laid out and equipped on the most up-to-date lines by Messrs. Baird and Tatlock of London. In March, 1928, Mr. C. H. Manley, M.A., F.I.C., was appointed City Analyst and subsequently a qualified assistant and a boy were added to the staff. The laboratory was opened in June and by the end of the Summer was in full working order. During the period intervening between the death of Mr. Burrell and the opening of the new laboratory, analyses of samples of food and drugs were carried out by Mr. F. W. Richardson, F.I.C. (Public Analyst for the West Riding) at Bradford and analyses of water and the contents of the smoke gauges by Mr. F. Firth, A.I.C., Park Square. To both these gentlemen thanks are due for the very efficient manner in which they did their work and for the valuable advice and help they gave the Department during a difficult period.

The inauguration of a Municipal Laboratory under the direction of a whole-time Analyst marks an important step in the development of the Health Services in Leeds and will, I venture to think, prove of great benefit to the City. Under the old regime, though the work was done with unexceptionable accuracy, there was a limit to the number of samples which could be examined in a given period, and this restriction sometimes proved irksome and tended to cramp the efforts of the inspectors and to retard progress. Now, though there is still a limit to the volume of work which the laboratory can undertake, the scope has been materially enlarged and there is no longer any need to consider the claims of outside interests. It is hoped to increase not only the number of formal but also of informal samples taken during the year and to use the laboratory for the examination of specimens of material other than those relating to food and drugs which are constantly cropping up in every Public Health Department.

ANALYSIS OF FOOD AND OTHER SUBSTANCES

by C. H. MANLEY, M.A., F.I.C., *City Analyst.*

Milk and Food Analysis.—The subjoined tables set out the number of samples of milk taken during the year and examined by the City Analyst, with information as to quality and composition and results of Court proceedings.

SAMPLES OF MILK AND CREAM SENT TO THE CITY ANALYST FOR EXAMINATION DURING 1928.

Article.	Genuine.	Adulterated.	Total.	Taken formally.		Taken informally.	
				Genuine.	Adulterated.	Genuine.	Adulterated.
Milk	958	149	1,107	947	149	11	..
Skim Milk ..	1	..	1	1	..	..	..
Cream	28	3	31	27	3	1	.
TOTAL	987	152	1,139	975	152	12	..
				1,127		12	

The average composition of the 1,107 milk samples taken during the year was :—

	1928.	Standard.
Non-fatty solids ..	8·77 per cent.	8·50 per cent.
Fat	3·79 „	3·00 „
Total solids ..	12·56 per cent.	11·50 per cent.

It should be emphasized that this average composition, which includes adulterated as well as genuine samples, is distinctly in advance of the standard demanded by the Sale of Milk Regulations, 1901, a fact which is borne out by figures published by other local authorities. Almost invariably, therefore, adulterated samples have been subjected to a greater degree of watering or abstraction of fat than the analysis actually discloses. Moreover, in instances

where milk from the farm purchased in the course of delivery has failed to conform to the standard, an " appeal to the cow " sample is usually well above the minimum demanded.

Of the 149 samples (13·5 per cent.) below standard, 96 contained added water, 46 were deficient in fat, and seven shewed both added water and fat deficiency.

The largest amount of water found in any sample was 28·2 per cent., and the greatest fat deficiency was 34·0 per cent. All the samples were free from formaldehyde and boric acid.

Cream.—Of three samples (9·4 per cent.) adulterated, one contained 0·29 per cent., boric acid. The vendor was warned by letter from the Medical Officer of Health. The other two samples had been thinned by the addition of 6·3 and 23·4 per cent., respectively of water. Strictly speaking, a thick cream should be thinned with milk, but a more uniform mixture is obtained by the use of water.

Baking Powder.—One sample (4·8 per cent.) contained 1/50 grain arsenic per lb., the recognised limit set up by the Royal Commission on Arsenic Poisoning being 1/100 grain per lb. The wholesaler was warned by letter.

Chopped Meat.—Two samples (40·0 per cent.) contained 120 and 1,100 parts respectively of sulphur dioxide per million. No preservative should be present in meat, sulphur dioxide tending to restore to decayed meat the characteristic red appearance of the fresh product. In each case the vendor was warned by letter.

White Pepper.—One sample (6·3 per cent.) contained 7·2 per cent. of black husk, the vendor being warned.

Potted Meat.—Four samples (17·4 per cent.) contained 0·8, 5·0, 6·0 and 7·5 per cent., respectively of starch. No action was taken. The remaining samples contained no starch. The water content varied between 55 and 80 per cent., the average being 68 per cent. It is suggested that no starch should be allowed in potted meat, and that as a limit to the amount of water a maximum of 70 per cent. should be fixed, the incorporation of excessively large amounts of water in certain brands being a notorious feature.

It is regrettable that as yet no standard of any kind has been made either by special regulations, or, in the absence of such, by the courts.

Sausages.—One sample (4·2 per cent.) contained 40 parts of sulphur dioxide per million without declaration of the presence of preservative either by attached label or by notice exhibited in a conspicuous place in the shop. The vendor was warned by letter. The maximum amount of sulphur dioxide allowed in sausages is 450 parts per million. This is the only preservative now permitted in sausages.

Vinegar.—One sample (8·3 per cent.) was 6 per cent. deficient in acetic acid, containing 3·76 per cent., instead of the 4 per cent. minimum demanded by the Local Government Board Standard. The vendor was warned by letter.

Whiskey.—One sample (14·3 per cent.) was 37·5 degrees under proof, instead of the maximum of 35 degrees allowable. No action was taken.

Boric Ointment.—One sample (50 per cent.) was three per cent. deficient in boric acid. No action was taken.

Zinc Ointment.—One sample (50 per cent.) was six per cent. deficient in Zinc Oxide. No action was taken.

Prescribed Medicine.—Two samples (66·7 per cent.) taken informally failed to conform to the strengths demanded. The chemist concerned in each case was warned by letter.

Sweet Nitre.—Three samples (75 per cent.) were below standard, and proceedings were instituted in two of the cases, the summonses being dismissed on payment of costs. In one case an imitation article known as " Nitre Sweating Mixture " had been sold which consisted of a diluted alcoholic solution of 3·7 per cent., ammonium acetate and 15 per cent., cane sugar.

The remainder of the samples were genuine and conformed to the Preservatives Regulations, 1925–1927.

Fertilisers and Feeding Stuffs.—Analyses have been carried out in connection with the Fertilisers and Feeding Stuffs Act, 1926 which came into operation on the 1st July, 1928.

Of 29 samples examined eight (27·6 per cent.), failed to conform to the particulars contained in the statutory statements.

Rag Flock.—Of six samples examined under the Rag Flock Acts, 1911 and 1928, one (16·7 per cent.), contained 150 parts chlorine per 100,000. The defendant was fined 40/- and ordered to pay costs.

Water.—The city water has been analysed each month, and detailed reports forwarded to the Waterworks Manager.

City Police.—Two samples of wine, one sample of tea and one set of safety film specimens were submitted by the Chief Constable.

The wine had been exposed for sale in a chemist's shop without the necessary licence. Analyses were made to ascertain the alcoholic content.

The tea which was in two packets (one closed and the other opened) proved to be exhausted and loaded with sand, iron filings, and magnetic iron oxide.

The safety films were certified as non-inflammable.

City Coroner.—A set of human organs was examined in connection with a case of alleged poisoning by sheep dip. No poison was found, the sheep dip proving to be of a non-arsenical nature, containing actually a creosote basis.

Smoke Gauges.—The monthly examination of the deposits in the smoke gauges has been continued.

Light Tests.—Since November 1st daily measurements of the intensity of light at Park Square and Headingley have been made. The method employed at Salford has been adopted, the values in each case being expressed as milligrams of iodine liberated from an acidified solution of potassium iodide contained in a 1 oz. glass bottle exposed for 24 hours on a white plate. By the end of December 95 of these tests had been carried out.

Miscellaneous.—In addition to the above work 42 other enquiries have been dealt with since the opening of the new laboratories in July. Of these 24 came from the Medical Officer of Health, three from the Acting Curator of the City Museum, and 15 from private sources.

General.—At the close of the year the number of samples of all kinds examined was at the rate of approximately 2,000 per annum, with an estimated increase to 2,500 per annum in 1929.

SAMPLES OF FOOD OTHER THAN MILK AND CREAM, SENT TO THE CITY ANALYST FOR EXAMINATION DURING 1928.

Article.	Genuine.	Adulterated.	Total.	Taken formally.		Taken informally.	
				Genuine.	Adulterated.	Genuine.	Adulterated.
Butter	18	..	18	18	..	..	..
Margarine	9	..	9	9	..	..	..
Lard	12	..	12	12	..	..	..
Pepper	15	1	16	15	1	..	..
Coffee	6	..	6	6	..	..	..
Tea	19	..	19	19	..	..	..
Sausage	23	1	24	23	1	..	..
Fruit Cake	4	..	4	4	..	..	..
Rice	6	..	6	6	..	..	..
Oatmeal	12	..	12	12	..	..	..
Epsom Salts	4	..	4	4	..	..	..
Carbonate of Soda ..	3	..	3	3	..	..	..
Aerated Waters ..	13	..	13	13	..	..	..
Baking Powder ..	20	1	21	20	1	..	..
Chopped Meat ..	3	2	5	3	2	..	..
Polony	2	..	2	2	..	..	..
Potted Meat	19	4	23	19	4	..	..
Zinc Ointment ..	1	1	2	1	1	..	..
Boric Ointment ..	1	1	2	1	1	..	..
Prescriptions	1	2	3	..	..	1	2
Beef Suet	4	..	4	4	..	..	..
Green Peas	7	..	7	7	..	..	..
Self Raising Flour ..	7	..	7	7	..	..	..
Cheese	2	..	2	2	..	..	..
Corn Flour	3	..	3	3	..	..	..
Condensed Milk ..	17	..	17	17	..	..	..
Vinegar	8	1	9	8	1	..	..
Malt Vinegar	14	..	14	14	..	..	..
Flour	18	..	18	18	..	..	..
Health Salts	1	..	1	1	..	..	..
Ground Rice	3	..	3	3	..	..	..
Carried forward ..	275	14	289	274	12	1	2

SAMPLES OF FOOD OTHER THAN MILK AND CREAM, SENT TO THE CITY ANALYST FOR EXAMINATION DURING 1928—*Continued*

Article.	Genuine.	Adulterated.	Total.	Taken formally.		Taken informally.	
				Genuine.	Adulterated.	Genuine.	Adulterated.
Brought forward ..	275	14	289	274	12	1	2
Pearl Barley	5	..	5	5	..	..	..
Whiskey	6	1	7	6	1	..	..
Liquid Paraffin ..	6	..	6	6	..	..	..
Demarara Sugar ..	2	..	2	2	..	..	..
Cocoa	5	..	5	5	..	..	..
Olive Oil	3	..	3	3	..	..	..
Sweet Nitre	1	3	4	1	3	..	..
Sponge Cake	1	..	1	1	..	..	..
Raspberry Bun ..	1	..	1	1	..	..	..
Cream Cake	7	..	7	7	..	..	..
Lemon Crystals ..	8	..	8	8	..	..	..
Raspberry Crystals ..	1	..	1	1	..	..	..
Mince Meat	1	..	1	1	..	..	..
Jams	2	..	2	2	..	..	..
Beer	13	..	13	13	..	..	..
Jellies	6	..	6	6	..	..	..
Prawn Paste	1	..	1	1	..	..	..
Pork and Beans ..	1	..	1	1	..	..	..
Chicken and Ham Paste	1	..	1	1	..	..	..
Sherbet	1	..	1	..	..	1	..
Table Salt	1	..	1	..	..	1	..
Winphos (Wine) ..	1	..	1	..	..	1	..
Beef dripping	4	..	4	4	..	..	..
Cream substitute ..	3	..	3	..	..	3	..
Ground Ginger ..	4	..	4	4	..	..	..
Salmon Roll	1	..	1	1	..	..	..
Cream Cheese	1	..	1	1	..	..	..
White Sugar	1	..	1	1	..	..	..
Total	363	18	381	356	16	7	2
				372		9	

SUMMONSES ISSUED DURING 1928, UNDER THE SALE OF FOOD AND DRUGS ACTS.

No. of Sample	Article.	Adulteration or Offence.	Fines. £ s. d.	Remarks.
83	Milk ..	5·6% added water ..	..	Dismissed on production of warranty; retailer.
93	Milk ..	6·0% added water ..	..	Dismissed on payment of 25/– costs; farmer.
140	Milk ..	11·0% added water ..	..	Dismissed on payment of costs; farmer.
194	M'garine	Not labelled in accordance with Section 6 of the Margarine Act, 1887 ..	0 10 0	Retailer.
195	M'garine	Do.	0 10 0	Retailer.
196	M'garine	Do.	0 10 0	Retailer.
242	Milk ..	5·4% added water ..	..	Dismissed under the Probation of Offenders Act; retailer.
248	Milk ..	9·4% added water ..	..	Dismissed on payment of 40/– costs; farmer.
348	Milk ..	11·3% added water ..	2 0 0	To pay 14/6 costs: farmer.
391	Milk ..	9·3% added water ..	..	Dismissed under the Probation of Offenders Act on payment of 14/6 costs.; retailer.
395	Milk ..	9·5% added water ..	..	Dismissed under the Probation of Offenders Act on payment of 14/6 costs; retailer.
401	Milk ..	8·5% added water ..	..	Dismissed under the Probation of Offenders Act on payment of 14/6 costs; retailer.
402	Milk ..	8·6% added water ..	2 0 0	To pay 14/– costs; farmer.
403	Milk ..	7·3% added water ..	2 0 0	To pay 14/– costs; farmer.

SUMMONSES ISSUED DURING 1928 UNDER THE SALE OF FOOD AND DRUGS ACTS—*Continued.*

No. of Sample	Article.	Adulteration or Offence.	Fines. £ s. d.	Remarks.
422	Milk ..	6·6% added water and 18·0% deficient in fat	..	Dismissed under the Probation of Offenders Act on payment of 10/6 costs; retailer.
480	Milk ..	18·3% deficient in fat ..	..	Dismissed under the Probation of Offenders Act on payment of 14/6 costs; retailer.
488	Milk ..	12·0% deficient in fat ..	..	Dismissed; farmer.
504	Milk ..	20·0% deficient in fat ..	..	Dismissed on production of warranty; wholesaler.
507	Sweet Nitre	100·0% deficient in ethyl nitrite	..	Dismissed under the Probation of Offenders Act on payment of £1 15s. 6d. costs; retailer.
508	Sweet Nitre	31·0% deficient in ethyl nitrite	..	Dismissed under the Probation of Offenders Act on payment of £1 15s. 6d. costs; retailer.
524	Milk ..	4·6% added water and 17·0% deficient in fat	2 0 0	Including costs; retailer.
547	Milk ..	5·1% added water ..	..	Dismissed under the Probation of Offenders Act on payment of £1 5s. 6d. costs; retailer.
584	Milk ..	16·9% added water ..	10 0 0	To pay costs; farmer.
607	Milk ..	28·2% added water ..	20 0 0	To pay costs; farmers.
659	Milk ..	23·0% deficient in fat ..	..	Dismissed under the Probation of Offenders Act on payment of 25/– costs; retailer.
746	Milk ..	6·8% added water ..	..	Summons withdrawn. £5 costs against the Corporation; farmer.

Sanitary Circumstances.

BY

A. MASSEY, M.D., Ch.B., D.P.H., *Chief Assistant Medical Officer of Health.*

Extension of City Boundaries.—On April 1st, 1928, Eccup, Alwoodley, Templenewsam and Austhorpe were taken into Leeds. The area added to the City comprises 7,969¼ acres with an estimated population of some 5,000 persons. Rural sanitary conditions largely obtain in the added areas and with the extension came a legacy of 192 privies and 106 pail or earth closets. Wherever sewers are available the substitution of modern conveniences is being pressed. At the year end, 21 privies in the Templenewsam area and one in Alwoodley had already been converted. From April 1st to December 31st, 1928, 31 cesspools were constructed in the added areas in connection with newly erected houses. The cesspool at best is an unsatisfactory method of dealing with house drainage but owing to the absence of sewers in this area there was no option.

Below are figures relating to the sanitary circumstances of the added territory as taken over on April 1st, 1928.

Area.	Houses.	Houses not connected to sewer.	Privies.	Pail or earth closets.	Cess-pools.	Houses without Town's water.	
						Wells.	Springs.
Eccup ..	63	63	34	15	32	18	28
Alwoodley ..	263	234	15	54	128	6	16
Temple-newsam ..	1,432	152	139	37	4	—	2
Austhorpe ..	16	11	4	—	—	—	—
Total ..	1,774	460	192	106	164	24	46

Rivers and Streams.—The surveillance of water-courses and the administration of the Rivers Pollution Prevention Act in the Leeds Area devolve primarily upon the West Riding Rivers Board

and with this body the Health Department has collaborated as found necessary during the year.

Rivers have always been important natural factors in deciding the sites of towns and the location of particular industries. The Aire in this respect is typical. Along its banks as it crosses the City from West to East are manufactories in great variety. Some degree of pollution by trade effluents is therefore inevitable. The problem is so to regulate and modify the pollution that neither industry nor the public health is prejudiced. That this is accomplished is due to the unremitting care of the inspectorate concerned.

Water.—I am indebted to Mr. H. Shortreed, the Waterworks Manager, for the following particulars anent the water supply of the City during the year.

During the year ended 31st December, 1928, authorised works for additional storage within the City were put in hand in the construction of Concrete Covered Service Reservoirs at Middleton (capacity $1\frac{1}{4}$ million gallons) and at Tinshill (capacity 1 million gallons). In addition, a covered Concrete Water Tower (50 feet in height with a capacity of 100,000 gallons) is being erected at Tinshill. When these works are completed and brought into use in 1929, the total capacity of covered storage in various parts of the City will be equal to 35 million gallons.

During the year, 26,206 yards of new distribution mains, principally 4 inches and 6 inches in diameter, have been laid and 6,856 yards of old mains replaced by new pipes of not less than 4 inches diameter.

The Filter Beds have been maintained in good working order, the filtering media having been maintained at their full depth of $4\frac{1}{2}$ feet.

There has been an ample supply of water throughout the distribution mains and also for the bulk supplies to outside authorities.

The total consumption in the City for the year ended 31st December, 1928, was 6,675,850,000 gallons, equal to an average of 18·29 million gallons per day as compared with an average of 18·17 million gallons per day for the year ended 31st December, 1927.

Water Hardening.—During the year, plant for the introduction of further carbonates, in the form of chalk, has been installed at the Eccup reservoir outlet ; this will be operated when the water from the Ure Valley scheme, which is of a " soft " character, is brought in and mixed with the Washburn supply, or whenever it may be found necessary to increase the carbonates in the Washburn water.

Analysis—Chemical and Bacteriological.—Regular monthly analyses are made, the chemical tests being carried out by the City Analyst, and the Bacteriological tests by the School of Medicine (Leeds University).

The chemical analyses are uniformly good and the bacteriological tests shew that out of 24 samples of filtered water submitted (two per month) during the year, B.Coli were absent in volumes of 50 c.c. in 16 of these. In the 8 samples in which coliform bacilli were present, the samples were taken following floods, which prevented the sedimentation and decanting that the water normally receives in its course through the impounding reservoirs of Fewston and Swinsty and in the Eccup storage reservoir.

The standard of purity in the Leeds water increases year by year. The work of safeguarding the catchment area is going forward by afforestation around the reservoirs and their main feeders and by the substitution, on the area, of sheep for cattle farms. The Goodrick farm and buildings, which stood on the bank of Eccup reservoir have been demolished. A further advance will be the completion shortly of a bypass (now in hand) whereby the water from two areas can be diverted from the reservoirs as found necessary.

The area under afforestation in the Washburn Watershed now exceeds 1,100 acres and planting is being steadily carried on at the rate of some 40 acres per annum.

Sewage Disposal.—The whole of the sewage of the City, excepting that of a small area on the South-Western boundary which is served by the Rodley Works, is disposed of at the main outfall works at Thorpe Stapleton, some three miles from the centre of the City to the South-East. These main outfall works have been in process of construction since 1909 and their capacity when completed will be such as will enable them to deal with a dry weather flow of 26 million gallons per day from a population estimated at 650,000.

The extended and remodelled works at Rodley, designed to treat a dry weather flow of 660,000 gallons per day from a population of 20,000 are dealing with a dry weather flow of sewage of 620,000 gallons per day from an estimated population of 18,700.

Possessing, as it does, in its Thorpe Stapleton and Rodley works, treatment embodying the most modern principles, the City of Leeds may safely claim to be in the front rank as regards its sewage disposal system.

I have to thank Mr. E. H. Howatson, the Sewerage Engineer, for the above information.

Drainage and Sewerage.—During 1928, as in previous years, there was helpful response by the City Engineer's Department to requests from the Health Department for sewer extensions. Some 197 yards of additional branch sewers were constructed, allowing of the conversion of three privies, the abolition of one cesspool and the connection to sewers of the drains of nineteen houses.

Closet Accommodation.—The outstanding feature of the year in this connection, was the considerable progress made in trough-closet conversion. A comparison of the 1927 and 1928 figures with those of the years immediately preceding will serve to illustrate how the powers obtained in 1927 under Section 97 of the Leeds Corporation Act of that year have accelerated this work. During 1928, 2,007 trough-closets were converted into modern pedestal water-closets as compared with 1,737 in 1927 and 537 in 1926. The Corporation continued its policy of making a grant-in-aid to property owners of 75 per cent. of the actual cost of conversion as disclosed by the receipted accounts. The disbursements for the year amounted to £16,720 16s. 8d. On the credit side are (1) the annual saving of flushing costs and (2) the improved environment of some thousands of persons in the poorer parts of the City. Who will say that the expenditure is not justified or that the balance is on the wrong side?

On December 31st, 1928, there remained in the City 4,440 trough-closets. Of these, such as are convertible should be converted by the end of 1930.

Fifty-one privies were replaced by modern water-closets during the year.

The position with regard to the various types of sanitary conveniences in the City at the end of 1928 was as follows:—privies 435; pail-closets 267; trough-closets 4,440, and cistern water-closets approximately 102,000.

TABLE SHEWING NUMBERS OF TROUGH CLOSETS, PRIVIES AND PAIL CLOSETS IN THE CITY DURING THE LAST TWENTY-FOUR YEARS.

Year.	Trough Closets.	Privies.	Pail Closets.
1905	10,507	1,669	231
1906	10,461	1,193	229
1907	10,424	963	228
1908	10,410	875	202
1909	10,120	851	198
1910	10,047	821	165
1911	9,963	785	164
*1912	9,934	1,284	221
1913	9,790	1,269	217
1914	9,760	1,211	207
1915	9,738	1,047	188
1916	9,725	1,026	185
1917	9,723	1,023	169
1918	9,693	1,022	166
1919	9,655	1,014	166
†1920	9,594	1,051	155
1921	9,521	900	128
1922	9,324	651	111
1923	9,256	558	102
1924	8,781	472	101
1925	8,222	332	94
‡1926	7,685	332	219
1927	6,447	294	197
§1928	4,440	435	267

*Roundhay, Seacroft, Shadwell and Crossgates were added to the city in this year. In this area there were 502 privies and 61 pail closets.

†Middleton was absorbed in this year. In this area there were 148 privies.

‡Portion of Adel was added to the city in this year. In this area there were 65 privies and 136 pail closets.

§Eccup, Alwoodley, Templenewsam and Austhorpe were added to the city in this year. In these areas there were 192 privies and 106 pail closets.

Cleansing.—Household refuse collected by the Cleansing Department during 1928, amounted to 173,035 tons, of which 99,995 tons were dealt with at the destructors, 72,972 tons were disposed of at tips and for agricultural purposes and 68 tons were sold as manure to farmers. For this information, I am indebted to Mr. S. Thornley, the Cleansing Superintendent.

It is good to note that year by year there is an increase in the proportion of refuse dealt with at the destructors ; 1928 again showed to advantage in this respect. Tipping is open to many objections and is resented by the general public and sanitarians alike. It can be justified only when other means of disposal are impracticable and when the methods employed are of a modern and inoffensive type.

Ashbins and Ashpits.—In response to representations from the Department 3,931 metal ashbins were provided during the year and of these 234 were provided by the Corporation in default.

There were in Leeds at the year end no fewer than 9,903 ashpits of which 986 were of the sunken variety. Ashpits are quite out of place in a progressive city. Every ashpit is a nuisance or a potential nuisance no matter what its state of repair. There are far too many of these abominations in Leeds and every effort is being made to reduce the number. In many parts of the city, however, the immediate abolition of ashpits is impracticable owing to the lack of space for the disposal of the bins necessary to take their place. Property owners might do much to assist the Department in getting rid of these undesirable refuse dumps, which are not only unsightly and offensive, but do much to destroy the amenities of life and to injure the health of the inhabitants of the districts in which they exist.

Public Conveniences.—The demand for additional public conveniences becomes more insistent year by year. This is one of the manifestations of the change in the social habits of the people which has taken place in recent years. People to-day absent themselves from home much more than formerly. Ever increasing numbers of workers of both sexes and shoppers daily frequent our streets. The improved transport facilities have brought the outlying districts nearer to the centre of the town and increased the day population enormously.

The Railway Companies have met the need of their patrons by providing public conveniences at their stations, but so far the Bus Companies have done nothing in this direction even though they carry many more local passengers than do the railways. The need is not so urgent for the short distance passenger as for the long distance for whom some provision should certainly be made at the main termini.

At the end of 1928 there were in the city 54 public conveniences under the control of the Health Committee—exclusive of those in

the public parks and recreation grounds controlled by the Parks and Allotments Committee.

Proposals for the erection of new conveniences at Ley Lane, Armley, Copley Hill and York Road have been considered during the year and are expected to materialise during the current year.

The project for a public convenience on the Middleton Park Estate mentioned in last year's Annual Report, has reached its final stage, and the building is likely to be completed shortly.

In the 1927 Report was mentioned the necessity for a women's convenience at the North end of Vicar Lane. The need has however been met by the opening of a combined parcels office, waiting room and lavatory in the immediate vicinity by a private firm.

There is need for a public convenience in Town Street, Bramley, and at the year end efforts were being made to acquire a suitable site for the purpose.

The Rent and Mortgage Interest Restrictions Acts.—Since the introduction of the above Acts in 1920, up to the end of 1928, 1,386 applications for certificates have been received and 1,308 certificates and 32 reports issued by the Department. Of these, 64 applications, 64 certificates and five reports belong to the year under review. The number of decontrolled houses is increasing apace.

Section 3, Housing Act, 1925.—In last year's Annual Report, the need was mentioned of a revision of the departmental procedure in respect of insanitary property dealt with under Section 3 of the Housing Act, 1925. Owners are under an obligation to keep houses let by them " in all respects reasonably fit for human habitation." In Leeds up to the end of 1928, the administration of Section 3 was the concern of the Improvements Committee. This arrangement was inconvenient as it divorced what is a purely sanitary measure from the general sanitary work of the Department and prevented the Section having its full effect especially as regards defects which, though prejudicial to health, are not " nuisances " within the meaning of Section 91 of the Public Health Act, 1875.

Towards the end of the year, Section 3 was transferred from the control of the Improvements Committee to that of the Health Committee, and now the sanitary inspectors are in a position to deal directly with all defects—" nuisances " or otherwise—which affect the amenities of a dwelling or interfere with the health and comfort of its occupants.

Analysis of work done by District Inspectors in the several Wards, 1928.

Eastern Division.											Western Division.										
North.	North East.	New.	West.	North West.	Brunswick.	Central.	Mill Hill.	East.	Total.		South.	East Hunslet.	West Hunslet.	Holbeck.	New Wortley.	Armley and Wortley.	Bramley.	Headingley, Kirkstall and Adel.	Burley.	Total.	City Totals.
										HOUSE INSPECTION.										
315	224	95	163	178	168	62	43	315	1,563	1. Houses and premises completely examined on account of — Infectious disease ..	242	499	482	370	272	351	153	179	232	2,780	4,343
2	29	..	6	3	10	13	1	5	69	2. Houses and premises completely examined on account of — Alleged nuisances ..	1	31	2	4	78	1	..	13	40	170	239
3	141	84	62	53	..	46	61	93	543	. Houses and premises completely examined on account of — House-to-house work	70	94	52	103	104	124	95	141	156	939	1,482
15	1	..	6	24	..	6	1	6	59	4. Houses and premises examined only as to — Occupants	8	23	12	6	..	8	5	5	4	71	130
341	203	267	179	234	460	167	42	1,104	2,997	5. Houses and premises examined only as to — Alleged nuisances ..	526	380	611	126	414	265	153	481	223	3,179	6,176
25	..	18	3	..	48	11	2	48	155	6. Houses and premises examined only as to — Drainage	7	37	57	9	73	8	3	102	15	311	466
701	598	464	419	492	686	305	150	1,571	5,386	7. Number of houses wholly or partly examined	854	1,064	1,216	618	941	757	409	921	670	7,450	12,836
346	232	315	164	213	494	167	71	1,282	3,284	8. Total number of above houses where sanitary defects or nuisances were found	557	564	671	203	664	439	229	640	267	4,234	7,518
										NUISANCES FOUND DURING ABOVE EXAMINATIONS AND DAILY INSPECTIONS.											
9	10	1	15	7	13	1	17	47	120	9. Houses dirty	6	10	7	8	18	13	2	4	2	70	190
22	25	4	23	6	2	5	2	24	113	10. Overcrowded houses	8	21	6	8	18	7	4	3	4	79	192
422	365	243	452	210	395	313	108	917	3,425	11. Defective roofs, fallpipes and spouting, &c...	206	460	385	378	306	466	228	200	296	2,925	6,350
76	40	37	30	33	16	19	19	70	340	12. Defective drains	33	115	127	128	71	186	49	37	32	778	1,118
5	2	10	1	..	..	..	..	..	18	13. Houses without proper drains	..	1	..	3	1	9	15	75	2	106	124
4	1	3	2	..	..	..	..	..	10	14. ,, without proper water supply ..	..	..	11	..	..	15	..	..	..	26	36
3	1	..	..	..	..	..	..	..	4	15. ,, badly lighted or ventilated	..	..	..	..	1	..	..	5	1	7	11
2	1	50	..	..	1	..	..	3	57	16. Privies	..	6	10	..	..	..	7	2	..	25	82
8	7	..	7	..	..	1	..	4	27	17. Additional closets required	..	4	..	7	8	3	8	1	2	33	60
9	..	7	..	..	..	..	..	..	16	18. Pail closets	..	..	..	..	..	..	21	1	..	22	38
388	288	52	373	156	91	257	65	364	2,034	19. Defective or unsuitable trough or water closets	89	392	147	374	219	264	84	115	180	1,864	3,898
5	14	..	23	4	3	8	..	..	57	20. Ashpits (a) Sunken	..	11	28	7	3	8	56	4	17	134	191
47	14	..	25	4	1	37	..	2	130	Ashpits (b) Other than sunken	4	21	14	25	40	4	15	12	20	155	285
570	504	132	502	226	244	413	92	309	2,992	21. Houses with unsuitable or insufficient ashes accommodation	139	303	221	237	283	228	298	261	520	2,490	5,482
37	28	1	23	3	44	20	7	130	293	22. Dirty closets	7	29	4	9	6	13	2	3	16	89	382

Analysis of work done by District Inspectors in the several Wards, 1928—*continued.*

Eastern Division.											Western Division.									
North.	North East.	New.	West.	North West.	Brunswick.	Central.	Mill Hill.	East.	Total.		South.	East Hunslet.	West Hunslet.	Holbeck.	New Wortley.	Armley and Wortley.	Bramley.	Headingley, Kirkstall and Adel.	Burley.	Total.	City Totals.
34	8	6	23	1	5	13	16	22	128	23. Defective or dirty yard surfaces	3	8	22	37	3	3	5	19	24	124	252
106	174	71	44	76	143	113	151	174	1,052	24. Stopped drains	100	142	96	126	80	114	27	59	120	864	1,916
501	297	98	523	162	242	135	115	479	2,552	25. Other nuisances	95	326	198	180	206	345	107	110	218	1,785	4,337
2,562	2,145	631	2,326	1,035	1,224	1,497	587	2,436	14,443	26. Number of houses affected by above nuisances	779	2,057	1,303	1,584	1,229	2,025	841	881	1,828	12,527	26,970
38	15	12	20	5	19	21	43	9	182	27. Offensive accumulations and other outside nuisances including manure pits and cess-pools	10	13	31	4	3	14	8	57	22	162	344
2	..	..	..	..	..	..	..	..	2	28. Pollutions of river or streams	..	..	..	..	..	..	..	..	..	..	2
13	1	..	5	2	7	1	2	10	41	29. Animals (pigs, poultry, etc.) improperly kept	1	3	4	2	..	6	7	3	4	30	71
7	3	2	2	..	1	..	2	..	17	30. Offensive urinals	..	..	..	..	11	2	..	4	8	25	42
2,308	1,798	729	2,093	895	1,227	1,357	639	2,564	13,610	31. Total nuisances found	701	1,865	1,311	1,533	1,277	1,700	943	975	1,488	11,793	25,403
33	24	1	24	19	15	12	1	7	136	32. Complaints unfounded	..	11	2	3	37	4	5	32	26	120	256
1,143	429	187	415	696	124	148	79	725	3,946	33. Additional visits paid to houses for — Infectious disease	129	203	236	261	170	192	514	264	357	2,326	6,272
1,864	1,819	114	2,785	1,194	1,673	1,311	76	1,321	12,157	34. Additional visits paid to houses for — Non-abated Nuisances	381	1,160	1,705	592	505	729	507	402	1,681	7,662	19,819
892	487	234	654	345	359	362	101	769	4,203	35. Additional visits paid to houses for — Inspection of work in progress ..	635	586	796	880	680	448	318	221	403	4,967	9,170
885	408	536	441	204	142	175	1,003	23	3,817	36. Additional visits paid to houses for — Other causes	312	332	226	17	162	34	260	37	235	1,615	5,432
329	2	48	1	641	2	2	..	917	1,942	37. Visits on account of special enquiries ..	1	102	732	449	683	305	22	232	494	3,020	4,962
52	93	46	155	22	6	86	54	228	742	38. Visits to offensive trades	..	33	137	185	5	143	210	24	146	883	*1,625
3	11	48	17	9	14	7	28	10	147	39. Visits to premises of ice cream vendors ..	14	29	61	22	..	31	32	33	16	238	*385
95	239	134	209	119	109	144	201	318	1,568	40. Visits to bakehouses	284	224	232	204	56	231	233	262	181	1,907	3,475
142	79	72	71	71	56	41	25	141	698	41. Appointments	22	79	121	106	115	116	105	54	65	783	1,481
1,147	707	118	721	432	653	618	194	799	5,389	42. Number of informal notices served	532	770	561	708	424	720	297	319	506	4,837	10,226
460	292	56	312	143	180	237	57	234	1,971	43. Number of statutory notices served.. ..	171	311	243	213	150	219	174	119	180	1,780	3,751
										NUISANCE ABATEMENT.										
359	273	65	271	191	107	219	98	301	1,884	44. Metal ashbins provided	126	265	188	160	220	262	245	227	354	2,047	3,931
8	16	1	16	4	2	2	12	48	99	45. Houses cleansed..	3	10	7	4	19	12	..	2	1	58	157
3	3	1	5	1	..	..	5	9	27	46. Overcrowded houses dealt with	1	2	..	6	1	1	3	1	4	19	46

*In addition to the above, 133 visits were paid by the Workshops Inspectors to Offensive Trades; also 1,401 visits to premises (other than shops) where ice-cream is manufactured were paid by the two special inspectors who carry out this inspection along with other duties.

Analysis of work done by District Inspectors in the several Wards, 1928—*continued.*

Eastern Division.											Western Division.										
North.	North East.	New.	West.	North West.	Brunswick.	Central.	Mill Hill.	East.	Total.		South.	East Hunslet.	West Hunslet.	Holbeck.	New Wortley.	Armley and Wortley.	Bramley.	Headingley, Kirkstall and Adel.	Burley.	Total.	City Totals.
421	293	234	436	233	419	282	97	801	3,216	47. Defective roofs, fallpipes and spouting, &c. repaired	204	451	308	354	178	435	207	216	318	2,671	5,887
16	12	9	3	9	8	4	7	45	113	48. Disconnection of house drains	13	29	80	32	22	169	31	13	3	392	505
69	14	26	33	27	23	18	14	29	253	49. Other drainage works	12	82	74	90	25	44	26	31	32	416	669
..	3	..	..	..	..	..	..	..	3	50. Houses provided with proper drains	..	1	..	..	2	1	11	42	..	57	60
3	1	1	2	..	..	..	..	..	7	51. Houses supplied with town's water	..	..	14	..	..	..	..	..	..	14	21
1	1	..	..	..	..	..	..	..	2	52. Improved lighting and ventilation for houses	..	..	..	..	..	..	..	2	..	2	4
2	1	27	..	..	1	..	..	2	33	53. Privies abolished or converted into water closets	..	6	..	..	..	..	10	2	..	18	51
4	4	3	3	2	..	..	..	..	16	54. Water closets erected (a) Outside	3	4	2	13	16	6	3	1	..	48	64
1	..	1	..	..	..	..	..	..	2	(b) Inside	..	..	1	3	..	..	1	..	1	6	8
7	..	..	..	..	..	..	..	..	7	55. Pail closets abolished or converted into water closets	..	..	..	5	..	..	24	..	..	29	36
135	117	..	77	93	69	90	6	234	821	56. Trough closets converted into water closets	161	191	128	244	161	57	74	46	124	1,186	2,007
279	141	27	296	37	58	160	42	9	1,049	57. Trough and water closets repaired	70	201	81	120	45	140	53	53	99	862	1,911
11	14	..	30	4	2	6	..	5	72	58. Ashpits abolished (a) Sunken	5	12	19	6	1	16	8	2	14	83	155
61	12	..	24	3	11	25	..	..	136	(b) Other than sunken	14	22	24	23	30	10	14	7	10	154	290
545	487	66	474	221	149	337	100	307	2,686	59. Houses provided with suitable ashes accommodation	210	308	240	206	211	289	317	270	493	2,544	5,230
30	22	..	21	31	41	20	5	122	292	60. Closets cleansed (limewashed, etc.)	2	28	4	12	19	23	14	3	5	110	402
30	2	4	24	1	8	7	19	19	114	61. Yard surfaces repaired or renewed	2	8	8	36	3	1	3	12	10	83	197
110	146	59	44	79	129	101	146	187	1,001	62. Stopped drains cleared	100	155	91	107	58	127	29	57	120	844	1,845
451	278	71	529	111	170	104	105	375	2,194	63. Other nuisances remedied	81	317	85	139	85	334	73	86	196	1,396	3,590
2,484	1,853	499	2,343	971	1,135	1,353	514	2,144	13,296	64. Total houses for which above work done	1,051	2,128	1,315	1,426	991	2,090	777	797	1,865	12,440	25,736
35	10	13	23	6	5	10	39	5	146	65. Offensive accumulations removed	9	12	20	3	2	8	3	12	16	85	231
3	1	1	2	..	..	..	..	..	7	66. New manure pits or metal receptacles provided	1	2	2	..	..	2	..	3	..	10	17
1	1	..	..	..	..	..	..	..	2	67. Manure pits repaired	..	1	..	..	..	..	..	..	1	2	4
2	..	..	..	..	..	..	..	..	2	68. Pollutions of river or streams abated	..	..	..	..	..	..	1	..	..	1	3
7	1	1	5	1	4	2	1	4	26	69. Animals improperly kept removed	1	3	2	1	1	9	4	2	2	25	51
6	2	1	2	..	..	..	1	..	12	70. Offensive urinals dealt with	..	..	..	..	5	1	1	3	3	13	25
..	..	..	..	..	..	..	..	..	..	71. Cesspools filled up	..	..	..	..	..	..	..	21	..	21	21
..	..	..	..	..	..	..	..	..	..	72. Public or private wells abolished	..	..	..	..	..	..	..	..	..	..	..
2,241	1,572	546	2,049	863	1,099	1,168	599	2,201	12,338	73. Total nuisances abated	892	1,845	1,190	1,404	884	1,685	910	887	1,452	11,149	23,487

Offensive Trades.—Below is a list of the scheduled offensive trades carried on in the City at December 31st :—

Nature of Trade.	Number of each Trade.
Bone Boiler	4
Fellmonger	2
Fat Melter	9
Glue Maker	1
Gut Scraper	4
Leather Dresser	23
Rag and Bone Dealer	28
Size Maker	3
Soap Boiler	4
Tanner	16
Tripe Boiler	12
Fish Frier	526
Total	632

Fish Frying.—Eleven applications were made during the year for permission to establish the offensive trade of fish-frying and in all cases the application was granted. The majority of these new fish-shops are located on or near the new Council housing estates. While eager to preserve the amenities of the latter, the Department is not in a position to prevent the occasional setting up thereon of fish-frying businesses so long as they conform to the requirements of the Department as regards premises and fittings.

Offensive Trades discontinued.—The following were discontinued during the year, viz., Rag and Bone Dealers 4, Leather Dressers 2, Fat Melters 2, Glue Maker 1, Tanner 1.

During the year 1,625 visits of inspection were made to premises in which offensive trades are carried on.

District Sanitary Inspection.—On April 1st, 1928, the areas of Eccup, Alwoodley, Templenewsam and Austhorpe were taken into Leeds. This widening of the city boundary towards the North, North-East and East necessitated a revision of the respective administrative areas of the two divisional sanitary inspectors. Previously, the River Aire which divides the city approximately into Northern and Southern halves formed the boundary between the two divisions. It was a convenient line though not the best line from the inspector's point of view. The expansion of the Northern

Division due to the addition of Eccup and Alwoodley, however, caused considerable disparity between North and South both as regards area and type. The Northern became disproportionately large and embraced for the most part the central and residential areas whereas the Southern division was smaller and chiefly industrial. An adjustment was accordingly effected by substituting Eastern and Western divisions for the former Northern and Southern. The new system came into operation on July 1st, 1928, and is working well.

Routine sanitary inspection has been maintained on a satisfactory level during the year and the volume of this work performed will be seen on reference to the tables on pages 198, 199 and 200. Smallpox and the extensive epidemic of scarlatina during the latter part of 1928 as well as the intensive campaign for the conversion of trough-closets, made heavy claims on the inspectors' time which is reflected in the lessened amount of routine sanitary work including house-to-house inspection.

The number of preliminary notices served during the year for the abatement of nuisances was 10,226 and the number of statutory notices 3,751. Of the latter 3,288 were effective and 463 were outstanding at the year end. In one case only were legal proceedings necessary.

Training of Sanitary Inspectors.—Seven student sanitary inspectors received training in the Department during the year. The type of student was distinctly good, and all of them should make thoroughly reliable and competent inspectors.

Common Lodging Houses.—At the year end there were in the city 31 registered common lodging-houses, 28 for men and three for women comprising 1,748 male beds and 134 female and children's beds. In the men's houses there were accommodated during the year 2,480 permanent and 45,478 casual lodgers, whilst in the women's the numbers were 248 permanent and 1,306 casual lodgers and 512 children.

A satisfactory standard of cleanliness and personal conduct was maintained.

Three changes of Keeper and four changes of Deputy were approved.

During the year, No. 9, Railway Street, Marsh Lane, was registered as a women's common lodging-house with 22 beds. The women's lodging-house (15 beds) at 9 Lumb's Square, York Street was closed down.

The lodging-house for women at 54 Lady Lane is very soon to be demolished as part of an extensive street improvement scheme in that area. At the end of the year alternative accommodation of a temporary nature for this lodging-house was under consideration and it has since been decided to adapt for the purpose part of the premises known as Templar Works, situate in Templar Street. The adaptation of buildings not originally intended for common lodging-houses is, generally speaking, a risky procedure and not one to be recommended except as in this case as a temporary measure.

In addition to the above mentioned, there are three unregistered lodging-houses for men which are controlled by the Salvation Army and Church Army. These houses together have 413 beds, which were occupied on 142,693 occasions during the year.

COMMON LODGING-HOUSES.

Number registered—		
Men's 28 Beds available 1,748		
Women's 3 ,, ,, 134	..	..
Routine visits to all common lodging-houses	..	1,030
Visits as to drain tests and abatements	..	217
Visits to smallpox contacts	..	3,476
Visits for infectious disease	..	6
Drain tests (in 4 houses)	..	18

Nuisances found and abated :—	FOUND.	ABATED.
Dirty closets	6	6
Dirty rooms	27	27
Dirty bedding	88	88
Defective or stopped drains	34	33
Defective roofs or eaves spouts	26	26
Other nuisances	77	77
Total	258	257

HOUSES-LET-IN-LODGINGS.

	HOUSES.	ROOMS.
Registered during 1928, let as furnished rooms	..	..
Removed from Register	..	..
On register at end of 1928	71	409
Houses-let-in-lodgings visited though not registered	789	2,347
Houses examined (new lodgings)	73	233
Drains tested 208, in 59 houses		
Drains re-tested 7, in 2 houses		
Visits for abatement of nuisances .. 1,386		
,, infectious disease (22 cases) 29		
,, additional inspection .. 1,149		

Nuisances—	FOUND.	ABATED.
Dirty or bad bedding	36	36
Dirty rooms	257	257
Overcrowding	37	36
Dirty closets	29	29
Other nuisances	308	286
Structural defects	224	204

University Lodgings.—As in other years, the lodgings on the register of approved premises for the use of University students were duly inspected and the results reported to the University Authorities. In this connection the following details are given :—

	Houses.	Rooms.
New lodgings inspected during 1928 ..	56 ..	198
Old lodgings re-inspected	78 ..	236

Drains tested—416 drains in 131 houses.

Details of sanitary defects found and rectified are included in the table under houses-let-in-lodgings.

Residential Flats.—In 67 houses there are 365 flats to which 86 visits of inspection were made by the appropriate inspector ; eight sanitary defects were found and all were abated.

Houses-Let-in-Lodgings.—The amount of inspection undertaken during the year in connection with these is set out in the table above. Those who occupy rooms in registered houses let-in-lodgings are in the unfortunate position of not being able to find accommodation elsewhere. The Council housing schemes do not touch the problem of these families. They want dwellings at rentals

not exceeding 7s. 0d. per week. Unable to find the latter, they fall into the hands of rapacious sub-lessors who often extort for miserable rooms as much rental as the whole houses are worth. Families must have a roof over their heads and the only solution to this sub-letting evil is the provision of low-rented dwellings. Admirable as the houses built by the Corporation on the various housing estates are, the rentals are entirely beyond the means of the very poor who still crowd into houses intended for one family only, and by their presence perpetuate the evil of overcrowding. The problem is serious and cries out for solution. But where the solution is to be found is a question as yet unanswered. There is scope here for voluntary enterprise. There surely must be those who would lend money at $2\frac{1}{2}$ or 3 per cent. for such a commendable object as the erection of houses for poor families. If only money could be obtained at a cheap rate of interest, dwellings might be erected to let at rents comparable to those now being paid in the poorest districts of the City. Even then it is questionable if the problem would be solved.

Cellar Dwellings and Underground Sleeping Rooms.—There are only eight cellar dwellings in the City. These are situate in Bath Street, York Road, and are occupied by old-age pensioners who pay 1s. 8d. per week for each dwelling.

Some 17 underground rooms, used as combined rooms, were found during the year. Alternative accommodation was arranged in 19 cases (three from last year) and the remainder were still under consideration at the end of the year.

Below are particulars of visits, nuisances found and abated and notices issued :—

Visits to cellar dwellings	22	
Visits to underground sleeping-rooms ..	74	
Visits on account of nuisance abatement ..	27	
Preliminary notices served	23	
Statutory notices served	—	
Verbal notices given	1	
Nuisances :—	FOUND.	ABATED.
Underground sleeping-rooms	17	19
Other nuisances	1	1

Tents and Vans.—The number of camping grounds for van-dwellers decreased from 32 at the end of 1927 to 28 on December 31st, 1928. At one time during the year the number was as high as 36, but eight were closed down.

Visits to vans (279 vans)	1,596
Visits to tents (18 tents)	108
Visits on account of infectious disease ..	10
Visits to camping grounds	266
Visits on account of nuisances	311

Nuisances :—	FOUND.	ABATED.
Dirty camping grounds	15	14
Dirty vans	9	9
Overcrowded vans	13	9
Camping places without sanitary accommodation	24	24
Other nuisances	200	129

Canal Boats.—The work in connection with the registration and inspection of canal boats has been carried on as in past years.

Details appear in the table appended.

CANAL BOATS.

Registered during the year 1928	4
Re-registered and Transferred to fresh owners ..	7
Struck off register (on revising register)	5
Remaining on register at end of year..	165
Visits of inspection to wharves and locks	831
Complete inspections of boats (242 boats)	620
Cases of infectious disease	..
Cases of overcrowding	1
Dirty cabins	8
Absence of registration certificate	18
Boats not marked with registered number	25
,, not properly ventilated	..
,, requiring painting or repairing	22
,, found to be not registered	6
Number of children of school age found on registered boats—12 boats, 19 children	

Ice Cream—Manufacture and Vendors—Premises.—Section 96 of the Leeds Corporation Act, 1927, which came into operation on the 29th July, 1927, made the registration of premises compulsory—except hotels and restaurants—on which ice-cream is made or sold. Some difficulty has been experienced in the enforcement of this Section due to the fact that many of the street vendors are illiterate. Generally speaking, however, the new powers have resulted in more satisfactory control in respect both of the production and sale of this commodity.

ICE CREAM STREET VENDORS AND PLACES OF MANUFACTURE.

Number of ice-cream places on register at the end of 1928	58	
Number of ice-cream vendors at the end of 1928	92	
Number of visits to ice-cream places (80 places)	1,401	
Number of ice-cream vehicles inspected (253 vehicles)	1,279	
Unsuitable ice-cream places	22	
Ice-cream places repaired	13	
Places closed on account of unsuitability ..	9	
Visits on account of nuisance abatements ..	101	
Nuisances :—	FOUND.	ABATED.
Dirty ice cream places	21	21
Defective walls and floors	19	19
Defective or stopped drains	9	9
Other structural defects	58	56
Ice-cream vehicles not marked with owner's address	8	8
TOTAL ..	115	113

Schools.—A separate report is issued by the School Medical Officer, and this includes particulars relating to the sanitary circumstances of the Leeds schools.

Rat Repression.—A constant campaign against rat infestation has been carried on during the year under the direction of the two Executive Rats Officers. The Annual Rat Week was held in November and during this period every effort was made to foster

in the public an attitude of active enmity towards these destructive and dangerous rodents. The co-operation of the City Engineer was enlisted and special measures were taken by him to deal with sewer rats. The Cleansing Superintendent also made a special effort to exterminate the rats in refuse tips and like places.

A rat week is merely an annual reminder that rat repression must be continuous and unremitting.

Particulars of the work done during 1928 under the Rats and Mice (Destruction) Act, 1919, are given hereunder :—

Complaints received	150
Premises inspected	337
Premises cleared	141
Rats caught or found poisoned	2,265
Visits for purposes of observation of work in progress	501
Visits for other purposes—interviews with owners of infested premises and the like	133
Informal notices served	25
Notices complied with	12

Factory and Workshop Act, 1901.—On pages 211 and 212 will be found a complete summary of work done during the year under the above Act ; this includes a record of bakehouse inspections.

Offices.—It is regrettable that the scope of the Factory and Workshop Act does not include offices. There are hundreds of offices in the City which leave much to be desired in respect of air space, ventilation, lighting and sanitary provision. This is a matter of moment, for the business office constitutes an increasingly important factor in modern life. A considerable proportion of our population—male and female—spend quite one third of their lives in offices. That so many of the latter do not conform to the modern ideas of hygiene redounds to the disadvantage of the public health. If healthy surroundings are necessary for the factory worker they are no less essential for the office worker. This is what up to the present our legislators have failed to appreciate. A well-lighted, airy and cheerful office has not only a physical but also a psychological effect which is reflected in the better quality of the work done as well as in the increased output. Legislation requiring satisfactory standards of lighting, ventilation, cubic space, etc., in offices is long overdue and ought to be pressed forward without delay.

OTHER VISITS PAID BY MALE WORKSHOPS INSPECTORS.

	Factories.	Workshops.	Workplaces.
Non-abatements	285	214	83
Drain Inspection	139	15	10
Drains tested	75	11	40
Disease enquiries	300	52	202
River pollution	3	..	..
Complaints	30	22	2
Measurement of workrooms ..	..	72	..
Other causes	215	138	46
TOTAL	1,047	524	383

Plans.—The system whereby plans submitted to the Building Surveyor and dealing with schemes involving sanitary works are reviewed by this Department before being finally approved by the Corporation, was continued throughout the year. The total number of plans examined and commented upon was 245, as compared with 278 for the previous year.

Work of Women Inspectors.—There are two women sanitary inspectors employed in the Department. Their routine duties comprise the visiting of outworkers, the investigation of outbreaks of infectious disease in factories, workshops and schools, the routine inspection of workshops and certain restaurants and the investigation of complaints received from the factory inspectors or other sources relating to sanitary defects affecting the health of female workers. The following is a summary of their year's work :—

Infectious Diseases.—The following visits were made :—

To schools (on account of 2,171 cases)	1,431
To absent pupils	82
To factories (123 cases)	158
To workshops	3
To workplaces, including restaurants (19 cases)	30
To absent employees	2

Factories and Workshops.—Part of the work done by the women inspectors under this heading appears on pages 211 and 212.

In addition to that appearing in the table the following visits were paid :—

Outworkers' homes	891
Outworkers, employers' premises ..	125
Factories	29
Workshops (routine and complaint) ..	113
Workplaces and restaurants do. ..	708
Special visits	50
	1,916
Inspections of public sanitary conveniences for women	108

Nuisances found 70, abated 63.

Holbeck Public Wash-house (Photographs appended).—The Stocks Hill Public Wash-house was opened on February 23rd, 1928, and has since been in full commission under the direction of the Baths Superintendent, Mr. Charles Burgess. It occupies a very convenient situation and supplies a long felt want in the neighbourhood. The charges are reasonable and should impose no hardship even on the very poor. The wash-house is equipped with the most up-to-date apparatus for the speedy washing, drying and ironing of household linen. It also possesses an installation of 24 baths which are a boon to the district. The success of the scheme can be adjudged by the fact that, from the date of opening on February 23rd up to the year end, the attendances numbered no less than 38,115. The value of the service, however, cannot be expressed alone in terms of attendances for apart from its utilitarian value the wash-house is a means of propagating the gospel of cleanliness and thereby of furthering the cause of public health.

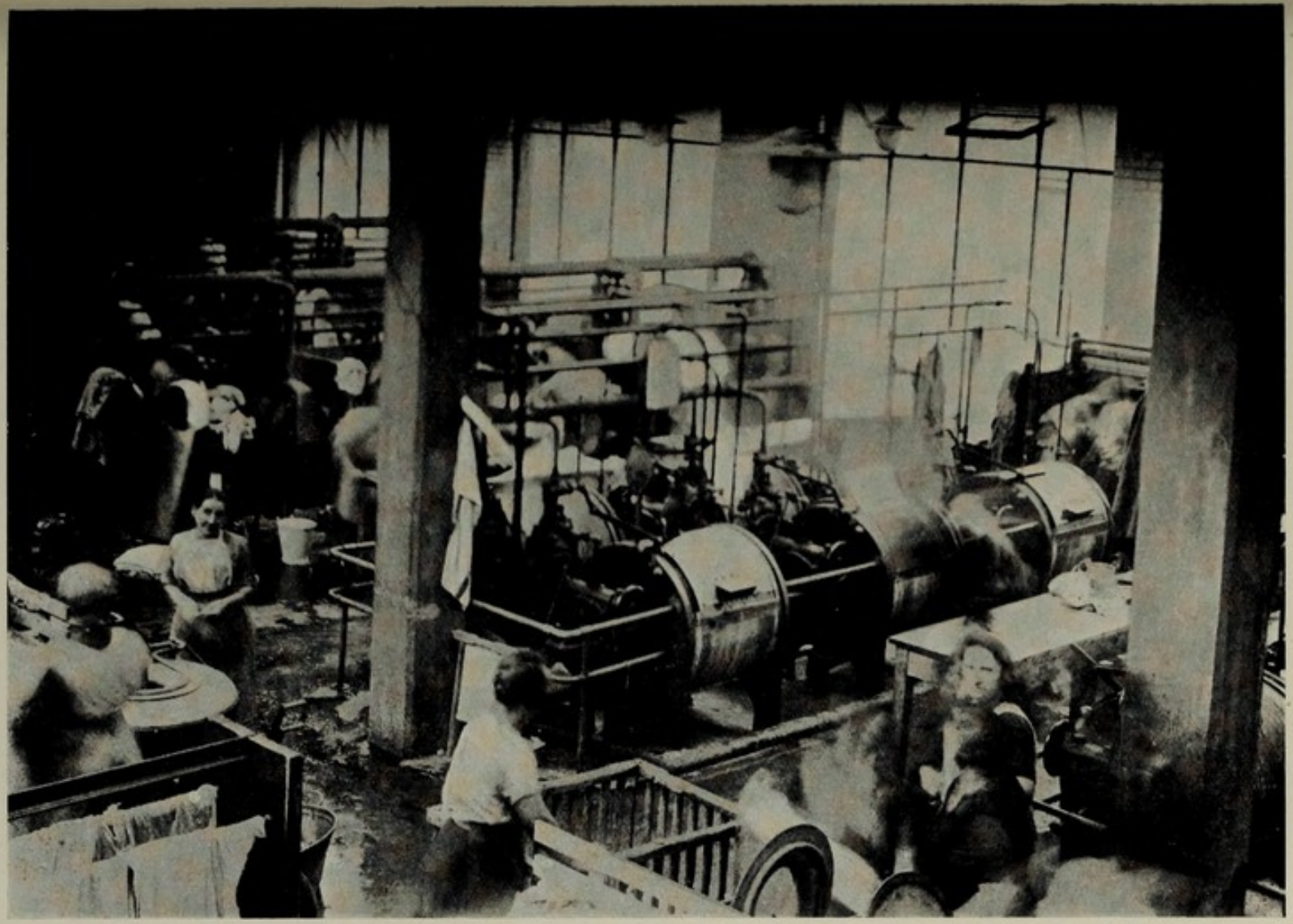
The accompanying photographs of the wash-house are reproduced by the permission of the Baths Superintendent.

Rag Flock Acts, 1911 and 1928.—During the year, 20 visits were made to premises engaged in the manufacture or use of rag flock. Five samples were taken and submitted for analysis. Four of these were found to comply with the legal standard ; one obtained from a sofa which, it was admitted, had been in use for 20 years, contained 150 parts of chlorine per 100,000 or 120 parts in excess of the legal standard. Proceedings were instituted against the offender and a penalty of £2 and costs inflicted.

Although the number of manufacturers of rag flock in the city has not increased, there is evidence that a fair amount of this material is being brought into the city from neighbouring towns. Samples of this material have been analysed during the year and the low chlorine content reported by the City Analyst indicates that washing is being effectively carried out.

The use of white cotton flock in the city appears to be on the decline and this indicates that upholsterers and manufacturers of furniture have more confidence that a clean and reliable supply of rag flock can now be obtained and used with safety.

HOLBECK PUBLIC WASH-HOUSE.



HOLBECK PUBLIC WASH-HOUSE.

FACTORIES AND WORKSHOPS.

1.—INSPECTION.

Premises.	Number of		
	Inspections.	Written Notices.	Prosecutions.
Factories .. .. (Including Factory Laundries.)	758	207	..
Workshops .. .. (Including Workshop Laundries.)	2,412	140	..
Workplaces	840	53	..
Total	4,010†	400	..

2.—DEFECTS FOUND.

Particulars.	Number of Defects.			Number of Prosecutions.
	Found.	Remedied.	Referred to H.M. Inspector.	
*Nuisances under the Public Health Acts :—**				
Want of cleanliness	99	93	..	..
Want of ventilation	7	4	..	..
Overcrowding	1	1	..	..
Want of drainage of floors ..	1	2	..	..
Other nuisances	639	594	..	..
Sanitary accommodation. Sec. 22 in force. — insufficient ..	19	16	..	..
Sanitary accommodation. Sec. 22 in force. — unsuitable or defective ..	143	138	..	..
Sanitary accommodation. Sec. 22 in force. — not separate for sexes ..	31	40	..	..
Offences under the Factory and Workshop Act :—				
Illegal occupation of underground bakehouse (S. 101)	..	..	..	..
Breach of special sanitary requirements for bakehouses (SS. 97 to 100)	31	27	..	..
Other offences	..	..	..	..
Total	971	915	..	..

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

† Exclusive of 3,475 visits to 635 bakehouses by ward inspectors, see page 213.

3, 4, 5.—OTHER MATTERS.

	Number of		
	Lists.	Outworkers.	
		C.	W.
Homework :—			
List of Outworkers (S. 107) :—			
(No homeworkers on our register except amongst those engaged in making wearing apparel) .. .	..	..	..
Lists received twice in the year	350	634	917
,, once in the year	36	26	37
Addresses of outworkers received from other Authorities ..		125	
Addresses of outworkers forwarded to other Authorities		..	
Notices to occupiers as to keeping or sending lists ..		501	
Prosecutions..		..	
Inspection of Homeworkers' premises		1,054	
Homework in unwholesome premises :—			
Instances		28	
Notices		28	
Prosecutions..		..	
Homework in infected premises :—			
Instances		17†	
Orders made (S. 110)		17	
Prosecutions (SS. 109, 110)		..	
[Infectious cases removed, disinfection carried out under ordinary powers.]			
Workshops on the Register (S. 131) at the end of year :—			
Ordinary (138 trades)		1,115	
Domestic (5 trades)		54	
Bakehouses on register as workshops		306	
Do. domestic		329	
Total number of workshops on Register		1,804	
Matters notified to H.M. Inspectors of Factories :—			
Failure to affix Abstract of the Factory and Workshop Act (S. 133)		41	
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts, but not under the Factory Act (S. 5) — Notified by H.M. Inspector ..		70	
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts, but not under the Factory Act (S. 5) — Reports (of action taken) sent to H.M. Inspectors..		100	
Other		..	
Underground Bakehouses (S. 101) :—			
Certificates granted during the year		..	
In use at the end of 1928		27	

† 1 Typhoid, 2 Diphtheria and 14 Scarlet Fever patients.

The above table is that required by the Home Office and represents work done by the male workshops inspectors and by the women inspectors.

BAKEHOUSES.

Ward.	Overground.			Underground.			
	Employees beyond family.	Workshop bakehouses.	Domestic bakehouses.	Employees beyond family.	Workshop bakehouses.	Domestic bakehouses.	Total visits to all.
Central	118 in	16	5	3 in	2	1	144
North	83 ,,	31	11	4 ,,	3	1	95
North-East	35 ,,	18	36	2 ,,	1	..	239
*New Ward	19 ,,	11	2	..		..	134
East	48 ,,	26	19	..		..	318
South	10 ,,	5	20	2 in	1	..	284
East Hunslet ..	15 ,,	8	30	5 ,,	2	..	224
West Hunslet ..	34 ,,	18	32	4 ,,	2	..	232
Holbeck	194 ,,	13	26	..		..	204
Mill Hill	47 ,,	12	9	..		..	201
West	36 ,,	17	18	..		..	209
North-West ..	78 ,,	18	27	9 in	3	3	119
Brunswick	42 ,,	10	13	3 ,,	1	..	109
New Wortley ..	41 ,,	19	..	..		..	56
Armley & Wortley	29 ,,	22	18	..		..	231
Bramley	23 ,,	15	18	..		..	233
Headingley	67 ,,	28	37	9 in	4	3	443
Totals.. ..	919 in	287	321	41 in	19	8	3 475

* Roundhay, Seacroft, Shadwell and Crossgates.

These visits made by Ward Inspectors only. This work is included in the figures given in table on page 199.

Smoke Abatement.

The cleansing of the atmosphere of the city has continued to occupy the attention of the department, and not without result for it will be agreed that Leeds is a less grimy place to-day than it was even ten years ago. Fogs still visit the city in the Autumn and Winter but they are not of the substantial nature they used to be neither are they so irritating or so destructive.

Factory smoke is steadily diminishing, largely due to the increasing popularity of electricity which has replaced steam power in many of the factories, as well as to the more efficient management of boiler plant resulting from the more rigorous enforcement of the Smoke abatement laws. The continued depression in the iron and steel trades which in times of prosperity are one of the main sources of smoke has also contributed. There is really no reason why factory smoke should not almost entirely disappear because with modern plant well regulated and properly handled and burning a good class of fuel, smoke is unnecessary except perhaps at times of lighting up and cleaning out. It is as much in the interest of the owner as the Public Health that smoke should disappear.

I find an impression abroad that such places as hotels, restaurants, warehouses and offices are exempt from the operations of the smoke laws. That is not the case ; only private dwelling-houses are excluded. Hence it is expected that the same precautions to avoid smoke will be taken by the occupiers of these premises as is the case with factories. Much of the smoke in Leeds air emanates from this source and is avoidable by substituting coke or some other kind of smokeless fuel for raw coal.

The domestic chimney, however, is the worst offender of all and accounts for quite the major proportion of the aerial pollution due to coal smoke. For some reason it has been placed outside the

law, though the smoke it produces is of a more destructive kind than that emanating from the factory chimney. The manufacturer owing to unforeseen and uncontrollable circumstances may on occasion have difficulty in keeping his chimney-top clean, but the domestic user should never experience that difficulty. All the latter wants is heat to warm his dwelling, cook his food, and ensure a constant supply of hot water. Coke, " Coalite," or any other fuel of a similar type will achieve that at the same cost or even less. If he prefers he can discard solid fuel for warming altogether and use gas or electricity.

Low temperature coke has passed the experimental stage, and it is generally agreed is a good fuel. It ignites easily, gives a clear fire, has a high thermal efficiency and is easy to handle. The ash residue is somewhat high and being of a light flocculent nature creates a good deal of dust. But by careful selection of the coal from which the fuel is made and by proper washing this earthy matter can be reduced to less than five per cent. In the extended use of this fuel is the solution to the domestic smoke problem. But before that can be achieved the price of the fuel will have to be reduced. The present price is altogether too high and when one considers that the manufacturer makes a profit from the sale of the bye-products extracted from the coal during distillation, unnecessarily high. The supplies are also short—at present, quite inadquate to meet the constantly increasing demand. New plants for the manufacture of the fuel are being erected up and down the country, but even so the output is likely to fall very much below the consumption for many years to come. In these circumstances might it not be possible to erect plant in connection with gas undertakings and thus subserve the dual office of making gas and providing a supply of low temperature coke for local needs.

This aspect of the matter has been recently considered by the West Riding Regional Smoke Abatement Committee and the following resolution has been adopted :—

> Resolved—That in the opinion of this Committee, in view of :—
> (*a*) The impossibility of burning raw coal in a domestic grate without the emission of black smoke.

(*b*) The unwillingness of owners of property to bear the expense of converting existing ranges to gas or electricity;

and further

(*c*) The restricted supplies of smokeless fuel;

and

(*d*) In consideration of the fact that the Local Authorities who own gas undertakings are in a position to erect low temperature carbonisation plant;

The Ministry should take measures to urge the adaptation of all Gas Works throughout the country as being the most suitable media for the production of smokeless fuel by the low temperature carbonisation of coal so as to overcome the present shortage of supplies.

Byelaws.—In my last report I mentioned that the City Council had decided to adopt the model Byelaw of the Ministry of Health which fixed the time standard for the emission of black smoke from any building other than a private dwelling-house at two minutes in the aggregate within any continuous period of thirty minutes. When the Byelaw was submitted to the Ministry of Health for approval, however, certain manufacturing interests took exception to the suggested standard.

An Inquiry was ordered by the Minister of Health and held at the Town Hall, Bradford in July and resulted in the Byelaw being modified and the standard changed from two minutes to three minutes in the aggregate in any continuous period of thirty minutes.

The Council decided to accept the suggested modification and the revised Byelaw came into operation on November 26th. Three minutes in the half hour or six minutes in the hour must be admitted to be a generous allowance, and few manufacturers should have any difficulty in keeping within the prescribed limit.

The old standard in Leeds was three minutes in the hour so that the new Byelaw gives a very substantial concession. But such a concession imposes an obligation on the manufacturer to do his best to observe the new standard, because with a 100 per cent. greater margin to work upon he will be expected to make a proportionately greater effort not to offend.

West Riding of Yorkshire Regional Smoke Abatement Committee.—A full report of the work of this Committee has been issued and may be had on application to the Secretary.

Smoke Gauges.—The soot and ash deposit has continued to be recorded at the Headingley, Park Square, York Road and Hunslet Smoke Stations. The Station at Roundhay was discontinued in May and the gauge removed to Templenewsam on the South-East boundary of the city.

The position of the gauge in Hunslet was also changed from Powell Street, where it has been since its establishment, to Hunslet Vicarage in Moor Road. These changes have had the result of varying the figures somewhat as will be noticed by the table on page 219.

Templenewsam Park where the Roundhay gauge is now placed is more in the line of the smoke drift than was the station in Roundhay, though the difference in the records of the two places is not so marked as one would have anticipated.

It will be noted from the table on page 219 that there has been a considerable decrease in the deposits recorded by the gauges in York Road and Hunslet in 1928 as compared with 1927. In Park Square and Headingley, on the other hand, increases were recorded.

Sunlight and Daylight Gauges.—Towards the end of the year gauges for the measurement of daylight were fixed at two stations, namely, Park Square and Headingley. These gauges consist of a solution of potassium iodide in dilute sulphuric acid. When exposed to light free iodine is liberated, the quantity of free iodine in solution being an index of the amount of daylight. Records of these gauges are not yet available but will be given in my next report.

The amount of actinic light in the atmosphere continued to be recorded by the acetone methylene blue method at five of the smoke stations as well as at Middleton. The results are set out in the table on page 220.

The records at Roundhay ceased when the soot gauge was transferred to Templenewsam.

Notwithstanding the increased hours of sunshine recorded during the year, it will be noted from the table that there was a definite reduction in the amount of actinic light recorded at the various stations. In no single instance was there an increase. The explanation of this is probably that in the hot weather of the

Summer and particularly in the Autumn, the amount of ground mist present during the early portion of the day prevented the ultra violet rays reaching the gauges.

The work of the smoke inspectors is given in detail in the subjoined table.

(1)	1928	1927
Furnaces inspected	1,851	1,721
Observation of chimneys (1 hour each)	3,492	4,185
Number of minutes dense smoke	1,633	2,164¾
Average duration of dense smoke per observation of one hour	0 mins. 28 secs.	0 mins. 31 secs.
Number of chimneys offending against the regulations	38	58
Smoke prevention appliances adapted to furnaces	12	16
Furnaces altered or reconstructed	100	41
Furnaces superseded, plant electrified (8 firms)	—	26
Firms who have adopted smokeless fuel	41	41
Chimneys newly erected	10	10
Furnaces in connection with new chimneys	10	10
Notices served on manufacturers	33	40
Prosecutions	1	2

SMOKE OBSERVATIONS, 1922-1928.

(2)

Year.	Observations of Chimneys (1 hour each).	No. of Chimneys found offending against the regulations.	Percentage to observations.
1922	3,853	275	7·1
1923	6,007	202	3·3
1924	6,773	113	1·7
1925	4,373	92	2·1
1926	4,114	63	1·5
1927	4,185	58	1·4
1928	3,492	38	1·1

Soot and Ash Gauges.
Monthly Deposit in English Tons per Square Mile.
Years 1927 and 1928.

Period.	Stations.											
	Headingley.		Park Square.		York Road.		Hunslet.		Roundhay.		Templenewsam	
	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.
January ..	10·2	14·4	43·5	39·0	28·6	31·7	25·9	28·5	..	4·0	..	..
February ..	7·7	11·5	24·8	28·7	22·7	22·0	28·6	26·2	..	7·7	..	..
March	11·0	18·4	35·9	22·7	28·6	26·4	36·1	34·5	..	7·3	..	..
April	15·8	11·6	23·0	25·9	34·4	24·4	27·3	35·5	..	5·2	..	..
May	6·1	13·4	25·2	28·9	35·0	27·1	73·0	37·1	..	7·3	..	..
June	11·1	11·1	29·3	31·7	41·0	32·9	53·7	26·6§	12·9	.. †	..	10·6†
July	20·6	11·0	29·1	14·6	34·9	27·8	41·4	16·8	11·6	..	..	8·9
August	11·2	13·7	32·2	37·6	50·4	29·5	45·4	17·6	17·0	..	..	11·8
September ..	14·3	4·6	29·3	16·6	25·6	13·9	39·2	15·7	13·5	..	..	4·8
October ..	16·4	12·1	38·4	32·5	36·8	28·2	57·0	20·0	15·8	..	..	9·0
November ..	9·1	11·0	19·0	49·2	27·2	31·0	36·0	26·1	5·2	..	..	9·5
December ..	.. *	9·1	24·8	31·1	26·7	24·3	37·6	19·7	3·3	..	..	6·6
Year	133·5 (11 m'ths)	141·9	354·5	358·5	391·9	319·2	501·2	304·3	79·3 (7 months)	31·5 (5 months)	..	61·2 (7 months)

* Gauge broken by frost.
§ Hunslet Gauge transferred from Powell Street to Hunslet Vicarage, Moor Road, June 1st, 1928.
† Roundhay Gauge transferred to Templenewsam, June 1st, 1928.

Table showing the Average Daily Amount of Actinic Light Registered during the Years 1927 and 1928, by the Acetone Methylene Blue Method.

Period.	Stations.											
	Headingley.		Park Square.		York Road.		Hunslet.		Roundhay.		Middleton.	
	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.
January ..	1·93	1·00	1·50	0·63	1·40	0·60	1·37	0·63	1·52	1·04	1·60	0·83
February ..	2·14	1·18	1·65	0·68	1·49	0·64	1·62	0·72	1·96	1·12	1·62	0·87
March	2·84	1·68	2·51	1·13	2·35	0·96	2·48	1·18	2·82	1·73	2·67	1·24
April	3·86	2·52	3·17	1·90	2·78	1·76	3·09	1·91	3·43	2·56	3·39	2·02
May	4·90	2·90	4·03	2·18	3·62	2·12	4·09	2·50	4·71	3·00	4·30	2·30
June	4·46	3·57	3·88	2·73	3·68	2·46	3·93	2·72	4·50	..	4·43	2·86
July	4·74	4·80	4·06	4·00	4·04	3·75	4·07	3·86	5·01	..	4·46	3·88
August	4·00	4·40	3·27	3·28	3·16	3·31	3·34	4·14	3·87	..	3·60	3·56
September ..	3·40	3·24	2·74	2·37	2·60	2·67	2·95	3·23	3·50	..	2·82	2·42
October ..	2·74	2·02	2·10	1·38	1·95	1·21	2·03	1·77	2·65	..	2·33	1·56
November ..	2·19	1·12	1·65	0·72	1·43	0·69	1·65	1·03	2·00	..	1·83	0·87
December ..	0·99	1·04	0·72	0·63	0·58	0·53	0·60	0·68	0·99	..	0·84	0·62
Year (average) ..	3·24	2·45	2·59	1·78	2·44	1·72	2·67	2·02	3·10	1·87	2·79	1·89

Note.—1927. Number of Daily Observations :—Headingley 359 ; Park Square 350 ; York Road 362 ; Hunslet 346 ; Roundhay 362 ; Mid. 338.
1928. " " " " Headingley 365 ; Park Square 356 ; York Road 365 ; Hunslet 365 ; Roundhay 151 ; Mid. 349.
The Station at Roundhay was discontinued on May 29th, 1928.
The Station at Hunslet was moved from Powell Street to the Hunslet Vicarage, Moor Road, on June 1st, 1928.

Housing.

The housing problem still looms large in the public eye. Hardly a day passes but reference to it is made on platform or in the press. On the one hand is the need for new houses to meet a demand which seems insatiable, and on the other, is the even greater and more urgent problem of slum clearance. As regards the former Leeds has a good record but her slum problem remains practically untouched.

Since the War more than 12,000 houses have been built of which 5,846 were erected by the Corporation. In addition, the Corporation have now some 614 in course of erection, 200 more are about to be commenced, and further schemes are under consideration.

During the same period 6,202 houses have been built by private enterprise, of which 4,102 were subsidy houses ; 575 are in course of erection, and a further 247 are contemplated.

These figures are highly satisfactory, and the needs of the better paid artisan and the skilled worker have been fairly well met.

But the problem of the poorer paid worker, the man with an income of 35/- to 40/- a week, has not been touched. He occupies the worst type of house because the rental is low. For him a house on one of the new housing estates would be an economic impossibility, he could not pay the rent. What he wants is a house with a rental including rates not exceeding 6/- or 7/- but houses of this type are hard to get and there are none being built. Cottage flats after the style of those built by the Corporation on the York and Selby Road estate are an attempt to meet the situation. The flats are of two storeys (ground and first floor) and are built in blocks of four with small gardens attached and so disposed on the site as to give the maximum of air and sunlight.

They are conveniently arranged, with separate entrances thus obviating the difficulties generally associated with common staircases. They are very popular and at present the demand exceeds the supply. The number of these flats erected to date is 160 but many more are likely to be built during the current year, indeed arrangements are now in train for the erection of a number on both the Hawksworth and Middleton Housing Estates.

I am interested in this type of house because it appears to me that it, or a modification of it, might prove the best solution of the slum problem. It is useless to expect the average slum dweller to settle down comfortably in a house such as one finds on the new housing estates. For one thing he cannot pay the rental, and even where the rental is within his means he cannot adapt himself to his new surroundings. The cottage flat is different. It can be built anywhere on any open piece of land suitable for building purposes and the rental is within the means of at least a fair proportion of slum tenants.

Number of Houses.—The total number of houses in the city on December 31st, 1928 was 125,043, made up of approximately 77,586 back-to-back houses, and 47,457 through houses.

Empty Houses.—There were at the same date approximately 1,212 empty houses mainly of the large old fashioned type found in those parts of the city which in former years were the quarters of the well-to-do.

New Houses.—The total number of new houses completed during the year was 1,731, of which 1,259 were working class houses, and the remaining 472 of a larger type.

Housing Shortage.—The number of applications registered for Corporation houses on December 31st was 6,308.

Overcrowding.—The number of notices served by the Department for overcrowding during the year was 192, of which 46 were abated. There still remains untouched a considerable volume of overcrowding, which has been the subject of correspondence between the Health and Engineering Departments on several occasions during the year. In a letter recently addressed to the City Engineer I described what I thought to be the best way of tackling the problem. I wrote as follows :—

> There is only one way, in my opinion, of dealing with the problem, and that is for the Corporation to acquire a number of back-to-back houses of a good type (I do not mean the newest type, but the type which is intermediate between that the oldest) and let them at small rentals to these poor people. This would have the double advantage of providing a good home and giving the Corporation an opportunity of supervising them in that home so as to prevent their abusing it either by taking in lodgers, as many of them are prone to do, or by misconduct. Quite a number of these people, if left to themselves, would make the best house into a hovel in a very short time, but under supervision might be induced to keep themselves and their families in a fairly clean and healthy condition.
>
> Personally I feel that this plan not only offers a solution to the problem of overcrowding, but also to the greater and no less urgent problem of slum treatment.

Details of the housing work done by the City Council are set out in the table appended.

TABLE SHEWING THE NUMBER OF HOUSES ERECTED IN LEEDS DURING THE LAST TWENTY-SEVEN YEARS, ENDED 31ST MARCH, 1929.

Year.	Number of Houses.
1903	2,572
1904	2,923
1905	2,442
1906	1,748
1907	1,135
1908	919
1909	836
1910	584
1911	505
1912	350
1913	220
1914	287
1915	228
1916	146
1917	51
1918	5
1919	4
1920	7
1921	196
1922	1,048
1923	1 918
1924	618
1925	951
1926	1,376
1927	2,378
1928	2,383
1929	1,872
TOTAL	27,702

Unfit Houses.—The number of houses inspected and found to be unfit for human habitation was 82 as against 125 in the previous year, whilst 433 were found not to be in all respects reasonably fit for human habitation.

In response to notices served 376 houses were repaired and rendered fit.

In addition, 25,736 houses were found to be defective in some respect or other and were repaired.

Closing orders were made in respect of 41 dwelling houses, whilst 11 houses were demolished in furtherance of such orders. Much useful work has been done in this way in getting rid of small portions of the worst of the congested areas. Some of the houses closed during the year were as much as 150 to 200 years old in an advanced state of decay and entirely unfit for human habitation. There are many small groups of houses which might be dealt with in this way by closure and demolition, but the difficulty is to find alternative accommodation for the dispossessed tenants. The tenants are usually penniless and quite unable to pay the rents of new houses. To turn them out means hardship and suffering which one is loath to inflict even on people who have shown very little desire to help themselves or to better their lot.

To facilitate the continuance of work of this kind it is absolutely necessary that a reserve of houses such as I have mentioned in the previous paragraph on overcrowding should be placed at the disposal of the Health Department. In the absence of such a reserve it is neither fair to the Department, which has to take the responsibility of turning the tenants out of condemned houses nor to the tenants themselves who are unable to procure alternative accommodation at a rental within their means, to insist upon the condemnation of property no matter how unhealthy. If the city is in earnest about slum clearance it ought to make the necessary provision for dealing with small groups of houses under Section 11 of the Housing Act, 1925, and so avoid the cumbersome formalities required for larger areas. With a reserve such as I have mentioned this would be quite possible.

Street Improvements.—In connection with the acquisition of property for street widening schemes, inspections and reports were made regarding 239 houses during the current year. In connection with these schemes the following houses suffered demolition during the year. Most of these were in the Regent Street Insanitary Area.

Scheme.	No. of Houses demolished.
Sheepscar	19
Regent Street	25
Burley Street	11

Unhealthy Areas.—Houses are now being built for the transference of the tenants from the West Street Unhealthy Area, and certain of the properties on the area have been acquired by the Corporation in readiness for demolition at the earliest possible moment. A good deal of preliminary work has been done in connection with other unhealthy areas in the city which await representation. It was hoped that it would have been possible to represent one or more such areas, but difficulties have arisen mostly as a result of the findings of the High Court in the Derby appeal case. Until the position arising out of that judgment is clarified it will be impossible to deal with any areas where it is not proposed to re-house on the site.

The question of compensation to owners is another cause of delay but there is every likelihood of a Bill being presented to Parliament in the near future to deal with this matter. Until something is done in this direction it is very unlikely that the representation of unhealthy areas will be received with favour.

Table shewing the Total Amount of Housing Work Done by the Leeds City Council to 31st March, 1929.

Assisted Schemes.

Name of Estate.	Sewers laid. Length in yds.	Roads formed, pitched and ashed. Length in yds.	No. of Houses for which Contracts have been signed.	No. of Houses upon which work has been commenced.	No. of Houses completed included in previous column.
Hawksworth Wood ..	4,436	5,109	402	402	402
Wyther House ..	3,857	4,048	492	492	492
Meanwood	4,394	5,931	800	800	800
Crossgates	4,510	6,063	488	488	488
Middleton	4,239	5,477	697	697	697
Ivy House	Existing	Existing	46	46	46
Section 12/3 Houses	do.	do.	398	398	398
Demonstration Houses, Meanwood	included	above.	6	6	6
Totals	21,436	26,628	3,329	3,329	3,329

Other than Assisted Schemes (including 1923 and 1924 Acts).

Wyther House ..	1,058	1,595	184	184	184
Meanwood	2,363	2,727	442	440	320
Crossgates	included	in A.S.	176	176	176
Middleton	3,022	3,524	696	646	516
Hollin Park	2,647	2,396	345	345	345
York Road	6,090	7,051	1,082	998	938
Harehills	603	703	72	72	72
Hawksworth	639	541	130	18	18
Greenthorpe	1,161	1,290	216	86	..
East End Park (purchased for re-housing)	Existing	..	192	192	192
Grand Totals ..	39,019	46,455	6,864	6,486	6,090

HOUSING ACT, 1925.

Table showing the number of houses examined by the Medical Officer of Health as part of the general survey of the town during the year ending December 31st, 1928, and the numbers represented or otherwise dealt with, pursuant to the Housing Acts, with the corresponding figures for 1926 and 1927.

	1926.	1927.	1928.
Number of new houses erected during the year :—			
(*a*) Total including numbers given separately under(*b*)	2,065	2,815	1,731
(*b*) With State Assistance under the Housing Acts:			
(i) By the Local Authority	780	971	544
(ii) By other bodies or persons	1,004	1,520	715
1. *Unfit dwelling-houses.*			
Inspection—(1) Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts)	11,695	11,260	13,351
(2) Number of dwelling-houses which were inspected and recorded under the Housing (Inspection of District) Regulations, 1910, or the Housing Consolidated Regulations, 1925	651	492	515
(3) Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation	226	125	83
(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 ..	325	367	433
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	302	321	376
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 ..	..	..	..
(2) Number of dwelling-houses which were rendered fit after service of formal notices :—			
(*a*) By owners	286	367	382
(*b*) By Local Authority in default of owners	..	..	..
(3) Number of dwelling-houses in respect of which Closing Orders became operative in pursuance of declarations by owners of intention to close	1	2	10
B.—Proceedings under Public Health Acts.			
(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied	26,869	24,435	26,970
(2) Number of dwelling-houses in which defects were remedied :—			
(*a*) By owners	26,959	24,507	25,736
(*b*) By Local Authority in default of owners	..	..	..
C.—Proceedings under Sections 11, 14, and 15 of the Housing Act, 1925.			
(1) Number of representations made with a view to the making of Closing Orders	1	9	44
(2) Number of dwelling-houses in respect of which Closing Orders were made	1	9	41
(3) Number of dwelling-houses in respect of which Closing Orders were determined, the dwelling-houses having been rendered fit	..	..	..
(4) Number of dwelling-houses in respect of which Demolition Orders were made	1	9	1
(5) Number of dwelling-houses demolished in pursuance of Closing or Demolition Orders..	21	3	11

Health Education, and Propaganda.

BY

ARTHUR MASSEY, M.D., Ch.B., D.P.H., Chief Assistant Medical Officer of Health.

The activities of a Public Health Department are intended to prevent disease and to foster the physical well-being of the community. To this end it is necessary to treat with both the individual and his environment. It is probably better, certainly easier, to adjust environment to man, rather than man to his environment. It is hardly right, for example, to essay to make the slum-dweller conform with his surroundings; far better it is to stimulate his health conscience, his desire for better things, and to endeavour to bring his sanitary circumstances into accord with his newly found ideal. It has ever been that ignorance and superstition go hand in hand with squalor. Squalor shrinks before the light of knowledge. Health education therefore is by no means unconnected with problems of environment. The connection between health propaganda and the individual is apparent. Upon the attitude of the individual towards matters of health depends very largely the success or otherwise of preventive medicine. Medical and social workers can attain much, but after all the individual is not unusually the final arbiter in respect of his own health. Health is maintained by a way of life which is impossible of enforcement upon the unwilling. The value of health propaganda then cannot be overstated. Prevention is the rightful business of public medicine and popular education in health is the foundation stone of prevention. Money spent on this work is an ultimate economy.

Health Week.—The Annual Health Week in Leeds was held in 1928 from October 8th to 14th. The arrangements included verbal,

printed, and screen publicity. Sixteen health talks were given during the week at different works and clubs in the city, also to various religious and social organisations. The meetings were well attended and by their means some 6,000 citizens were directly informed of the more important aspects of health and personal hygiene.

A circular letter was sent to Ministers of Religion in Leeds requesting the inclusion of the subject of health in their sermons for the Sunday of Health Week, and to this letter a ready response was made.

By kind co-operation of the City Librarian, some 50,000 book-marks bearing suitable health slogans were distributed in books issued during the week from the different public libraries in the city. This is thought to be a particularly valuable way of reaching an intelligent public.

By favour of the Tramways Manager, health slogans were shown in the tramcars and Corporation buses during the week. Suitable posters were also displayed at points of vantage throughout the city and also in many of the large works and factories. Instructive literature was distributed to the mothers at the Welfare Centres and to those attending the various meetings.

A health propaganda film was put on during the week at the "Majestic," "Rialto," and "Scala" Picture Houses and was well received. The thanks of the Department are due to the respective managements for their ready co-operation.

Wayside Pulpits.—During the year three "Wayside Pulpits" were erected in central positions. They are situated respectively (*a*) at the Central Clinic in Calverley Street, (*b*) outside the Tuberculosis Dispensary at the junction of New Briggate and Vicar Lane, and (*c*) near the junction of Cookridge Street and Woodhouse Lane. The health slogans displayed at these points are changed weekly.

Press.—The press in Leeds is always ready to give publicity to topical health subjects. Frequent interviews are given to press representatives, and this is a valuable and far-reaching method of imparting health knowledge to the public.

At the end of the year arrangements were in progress for the introduction and distribution in the city of the periodical "Better Health," and it is hoped these arrangements will be completed early in the current year (1929). "Better Health" is produced and adapted to local requirements by the Central Council for Health Education. It will contain both national and local health items.

Leeds Committee for Social Hygiene.—The existence of this Committee should be more widely known. It is the Leeds Branch of the British Social Hygiene Council, and though on a voluntary basis, it is to all intents and purposes financed by the Health Committee. The membership of the body is representative and includes two members of the Health Committee. The President is Dr. E. Welch and the Medical Officer of Health and the writer are Joint Honorary Secretaries. The role of the Leeds Committee for Social Hygiene is that of an organizer of health propaganda. The Committee met on six occasions during the year and under its auspices much useful work was done. Of the latter, the inauguration of Parents' Conferences in certain of the Leeds schools warrants special mention.

Parents' Conferences.—With the valuable co-operation of the Director of Education (Dr. James Graham), four conferences were held on November 12th, 13th, 14th, and 16th respectively. The meetings were collective, consisting of parents from groups of schools, and were arranged at the following centres:—

(1) Brudenell Council School (7 schools).
(2) Richmond Hill Council School (5 schools).
(3) Princes Field Council School (6 schools).
(4) Hunslet Low Road Council School (5 schools).

At each meeting the film "The Gift of Life" was shown, preceded by a comprehensive health talk. The attendances were 300, 100, 300, and 600 respectively. It was thus evident that the experiment was justified, and it is projected to organize a larger series of these conferences during the current year (1929).

The total number of health lectures and addresses given under the auspices of the Health Department and Leeds Committee for Social Hygiene during the year was 58.

Staff Changes.

W. L. Fleming, L.D.S., appointed Dental Officer for Maternity and Child Welfare and Tuberculosis Work, February, 1928.

Cyril H. Manley, M.A., F.I.C., appointed City Analyst, March, 1928, in place of B. A. Burrell, F.I.C. F.C.S., died July 10th, 1927.

E. F. McCleery, M.R.C.V.S., D.V.S.M., appointed Assistant Veterinary Inspector, May, 1928.

Gladys J. C. Russell, M.B., Ch.B., D.P.H., appointed Assistant Medical Officer, June, 1928, in place of Cecilia Shiskin, B.A., M.B., Ch.B., resigned April, 1928.

J. Pickard, M.B., appointed Assistant Medical Officer at Seacroft Hospital for six months, June, 1928.

R. W. Sutton, B.Sc., F.I.C., appointed Assistant to the City Analyst, June, 1928.

J. S. Anderson, M.A., M.D., Ch.B., D.P.H., appointed Medical Superintendent of City Hospitals, Seacroft, August, 1928, in place of A. E. Pearson, M.R.C.S., L.R.C.P., retired on superannuation, September 1928, after 39 years service.

Gladys J. C. Russell, M.B., Ch.B., D.P.H., appointed Assistant Medical Officer of Health for Maternity and Child Welfare, September, 1928, in place of Gladys E. Ainscow, M.B., Ch.B., D.P.H., resigned July 1928.

Hester E. de C. Woodcock, B.A., M.B., Ch.B., appointed First Assistant Resident Medical Officer at Seacroft Hospital, September, 1928, in place of J. Science, M.B., Ch.B., D.P.H., resigned September, 1928.

J. R. O'Neill, M.B., appointed Second Assistant Medical Officer at Seacroft Hospital for a period of six months, October, 1928, in place of J. Pickard, M.B., resigned September, 1928.

Maria L. Gaunt, M.B., Ch.B., appointed Assistant Medical Officer, October, 1928.

APPENDIX 1.

BYE-LAW MADE IN PURSUANCE OF SECTION 2 OF THE PUBLIC HEALTH (SMOKE ABATEMENT) ACT, 1926.

WHEREAS Section 2 of the Public Health (Smoke Abatement) Act, 1926, provides that any Local Authority may make Byelaws regulating the emission of smoke of such colour density or content as may be prescribed by the Byelaws and that where such Byelaws are in force the emission of smoke of the character so prescribed for such period as may be prescribed in the Byelaws either from buildings generally to which the enactments relating to smoke nuisances apply or from such classes of those buildings as may be so prescribed shall until the contrary is proved be presumed to be a nuisance.

The Lord Mayor, Aldermen and Citizens of the City of Leeds, acting by the Council, do by this Byelaw prescribe that the emission of black smoke for a period of two minutes in the aggregate within any continuous period of thirty minutes from any building other than a private dwelling-house shall until the contrary is proved be presumed a nuisance.

The foregoing byelaw except in so far as :—

(1) it determines that the emission of black smoke for a period less than three minutes in the aggregate within any continuous period of thirty minutes shall be presumed to be a nuisance ;

(2) in calculating the said aggregate it includes the emission of smoke from more than one chimney of the same building ;

is hereby allowed by the Minister of Health this twenty-sixth day of November, 1928.

MINISTRY OF HEALTH TABLES.

TABLE I.

VITAL STATISTICS OF WHOLE DISTRICT DURING 1928 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.						Under 1 Year of Age.		At all Ages.	
			Number.	Rate.	Number.	Rate.	Of Non-residents registered in the District.	Of Residents not registered in the District.	Number.	Rate per 1,000 Nett Births.	Number.	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1918	427,589	7,609	7,392	17·3	8,452	19·8	318	395	984	133	8,529	19·9
1919	430,834	7,837	7,564	17·6	7,099	16.5	401	294	899	119	6,992	16.2
1920	448,913	11,587	11,229	25·0	6,725	15·0	417	283	1,232	110	6,591	14·7
1921	465,500	10,427	10,144	21·8	6,424	13·8	408	269	997	98	6,285	13·5
1922	466,700	9,500	9,253	19·8	6,589	14·1	425	315	935	101	6,479	13·9
1923	469,900	8,991	8,684	18·5	6,128	13·0	451	309	773	89	5,986	12·7
1924	471,600	8,862	8,558	18·1	6,824	14·5	435	358	921	108	6,747	14·3
1925	472,900	8,518	8,180	17·3	6,286	13·3	570	321	748	91	6,037	12·8
1926	473,400	8,437	8,065	17·0	6,285	13·3	531	308	748	93	6,062	12·8
1927	477,600	8,075	7,790	16·3	6,438	13·5	578	338	629	81	6,198	13·0
1928	474,800*	7,978	7,665	16·1	6,419	13·5	545	259	606	79	6,133	12·9

Area of District in acres (land and inland water) } 38,106

Total population at all ages at the 1921 Census 458,232

Do. adjusted for the 1921 Census 465,500

* Population adjusted to allow for change in boundary during the year. The mid-year population after the change is 476,500.

APPENDIX 2.

TABLE II. CASES OF INFECTIOUS DISEASES NOTIFIED DURING THE CALENDAR YEAR 1928.

NOTIFIABLE DISEASE.	NUMBER OF CASES NOTIFIED.								TOTAL CASES NOTIFIED IN EACH LOCALITY. (*e.g.* Parish or Ward) of the District.																Total Cases removed to Hospital.
	At all Ages.	At Ages—Years.							Central.	North.	North-East.	New Ward.	East.	South.	East Hunslet.	West Hunslet.	Holbeck.	Mill Hill.	West.	North-West.	Brunswick.	New Wortley.	Armley and Wortley.	Bramley.	Headingley.	
		under 1.	1 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																		
Small-pox	53	..	..	14	12	11	16	..	1	11	4	..	13	..	..	4	2	1	5	5	..	..	1	5	1	53
Chicken-pox	1,717	89	615	987	22	4	..	..	34	170	88	64	80	17	208	129	213	8	40	46	42	104	125	137	212	36
Cholera (C) Plague (P) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diphtheria (including Membranous croup)	634	13	125	352	93	47	3	1	18	72	49	24	36	19	84	53	37	26	20	61	42	19	16	14	44	601
Erysipelas	361	4	6	12	41	109	148	41	18	33	30	8	37	12	32	24	22	22	16	11	13	11	23	16	33	158
Scarlet Fever..	3,515	22	660	2,202	451	170	10	..	56	218	151	91	215	229	432	380	300	62	123	107	127	247	303	121	353	2,226
Measles	3,638	230	2,168	1,215	20	4	1	..	85	154	253	17	379	103	231	359	508	36	246	367	168	112	106	23	491	94
German Measles	41	2	20	17	1	1	..	..	3	4	2	1	1	..	4	4	5	..	3	1	1	3	5	..	4	..
Typhus Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Enteric Fever	6	..	..	2	1	3	..	..	..	..	..	..	..	1	..	1	..	..	1	..	1	..	..	..	2	1
Relapsing fever (R) Continued fever (C)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Fever	47	..	..	..	8	39	..	..	2	3	2	1	7	..	5	3	4	2	5	1	1	2	5	2	2	26
Puerperal Pyrexia	119	..	..	..	48	71	..	..	1	7	10	3	9	8	10	7	6	1	30	3	7	5	2	3	7	23
Cerebro-Spinal Meningitis ..	3	1	1	1	..	..	..	..	..	..	..	..	1	1	..	..	..	..	1	..	..	..	..	..	..	..
Poliomyelitis	3	..	1	..	1	..	1	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..
Ophthalmia Neonatorum ..	66	66	..	..	..	..	..	..	3	3	3	..	3	1	7	4	6	..	16	2	4	4	2	2	6	1
Encephalitis Lethargica ..	10	..	..	..	4	2	3	1	..	..	..	1	..	..	4	1	..	..	..	..	2	..	1	..	1	..
Malaria	6	..	..	..	..	5	1	..	..	1	..	..	1	..	2	..	..	..	..	..	..	..	1	..	1	..
Dysentery	3	..	1	1	..	1	..	..	..	..	..	1	..	..	..	..	..	2	..	..	..	..	..	..	..	..
Other Diseases	188	14	33	49	49	37	6	..	5	9	7	51	10	6	14	2	9	10	8	10	9	3	14	7	14	188
Pulmonary Tuberculosis ..	766	..	11	105	176	298	159	17	32	71	68	13	72	40	67	47	41	3	35	51	54	39	38	28	67	673
Other Forms of Tuberculosis	158	4	25	61	37	19	10	2	4	18	13	3	16	6	22	15	10	..	5	9	8	4	12	7	6	21
Pneumonia (Acute primary)	993	50	227	187	129	188	175	37	14	161	60	16	94	39	129	59	79	7	31	69	54	44	69	13	55	41
Do. (Acute Influenzal)	159	7	21	17	28	35	36	15	3	35	23	4	17	8	9	6	4	..	5	11	5	..	8	9	12	..
TOTALS	12,486	502	3,914	5,222	1,121	1,044	569	114	279	971	763	298	991	490	1,260	1,099	1,246	180	590	754	538	597	731	388	1,311	4,142

Isolation Hospital or Hospitals, Sanatoria, &c. :—City Fever Hospital, Seacroft and Killingbeck.

In addition to the 673 Pulmonary Tuberculosis and 21 Tuberculosis (Other Forms), removed, 102 Pulmonary Tuberculosis and 13 Tuberculosis (Other Forms), were admitted to "The Hollies," Weetwood Lane, and 134 Pulmonary Tuberculosis and 1 Tuberculosis (Other Forms), were admitted to Gateforth Sanatorium which is outside the City. They are included in the 766 and 158 notified.

APPENDIX 3.

APPENDIX 4.

Causes of, and Ages at Death during the Calendar Year 1928.

REGISTRAR GENERAL'S FIGURES.

Causes of Death.	Sex.	All Ages.	0–	1–	2–	5–	15–	25–	45–	65–	75–
All Causes	M.	3,253	382	69	55	77	97	373	1,033	713	454
	F.	2,876	224	53	58	77	132	353	759	632	588
1. Enteric Fever	M.	..	..	..	..	..	..	..	..	..	..
	F.	1	..	..	..	..	..	..	1	..	..
2. Small-pox	M.	..	..	..	..	..	..	..	..	..	..
	F.	..	..	..	..	..	..	..	..	..	..
3. Measles	M.	11	1	4	5	1	..	..	..	..	..
	F.	10	2	2	5	1	..	..	..	..	..
4. Scarlet Fever	M.	7	2	..	2	2	1	..	..	..	..
	F.	10	..	..	4	6	..	..	..	..	..
5. Whooping Cough ..	M.	28	15	12	1	..	..	..	..	..	..
	F.	10	6	3	1	..	..	..	..	..	..
6. Diphtheria	M.	12	1	1	5	4	..	..	1	..	..
	F.	9	..	1	3	4	..	1	..	..	..
7. Influenza	M.	55	4	1	1	..	8	7	20	12	2
	F.	51	1	..	1	..	2	13	14	12	8
8. Encephalitis Lethargica	M.	4	..	..	..	..	..	1	2	1	..
	F.	9	1	..	..	..	2	2	4	..	..
9. Meningococcal Meningitis	M.	2	2	..	..	..	..	..	..	..	..
	F.	5	4	1	..	..	..	..	..	..	..
10. Tuberculosis of respiratory system	M.	272	..	..	3	2	26	114	107	18	2
	F.	182	1	2	2	6	48	85	33	5	..
11. Other Tuberculous Diseases	M.	50	9	7	6	18	2	4	4	..	..
	F.	37	2	3	10	6	8	5	3	..	..
12. Cancer, malignant disease	M.	326	..	..	..	..	3	24	162	110	27
	F.	368	..	..	..	..	3	39	173	98	55
13. Rheumatic Fever ..	M.	7	..	..	..	2	..	3	..	2	..
	F.	15	..	..	..	5	5	4	1	..	..
14. Diabetes	M.	31	..	..	..	1	1	2	15	10	2
	F.	40	..	..	..	..	1	5	14	15	5
15. Cerebral Hæmorrhage, &c.	M.	149	..	..	..	..	..	3	52	59	35
	F.	196	..	..	..	..	1	9	64	76	46
16. Heart Disease	M.	454	..	..	..	6	11	32	163	139	108
	F.	525	1	..	..	8	9	43	153	161	150
17. Arterio-sclerosis ..	M.	318	..	..	..	..	..	2	64	128	124
	F.	217	..	..	..	..	..	..	35	83	99
18. Bronchitis	M.	192	11	2	1	2	1	15	57	58	45
	F.	175	4	3	1	1	1	6	30	61	68
19. Pneumonia (all forms)	M.	302	51	27	17	6	7	51	104	30	9
	F.	177	25	21	19	14	10	24	34	12	18
20. Other respiratory diseases	M.	32	1	..	..	2	2	6	15	4	2
	F.	11	..	1	1	..	..	..	4	4	1
21. Ulcer of stomach or duodenum	M.	46	..	..	..	..	..	13	27	4	2
	F.	10	1	..	..	1	..	3	2	3	..
22. Diarrhœa, &c.	M.	72	58	7	..	..	..	4	1	2	..
	F.	40	29	6	..	..	..	1	..	3	1
23. Appendicitis and Typhlitis	M.	9	..	..	1	1	..	1	4	1	1
	F.	16	..	..	..	5	5	2	3	..	1
24. Cirrhosis of Liver ..	M.	18	..	..	..	..	..	3	14	..	1
	F.	6	..	..	..	1	..	1	3	1	..
25. Acute and Chronic Nephritis	M.	97	1	..	..	..	1	11	37	36	11
	F.	106	..	..	..	1	4	18	53	17	13
26. Puerperal Sepsis ..	F.	18	..	..	..	..	5	13	..	..	..
27. Other accidents and diseases of pregnancy & parturition	F.	17	..	..	..	..	3	14	..	..	..
28. Congenital debility Malformation, and premature birth	M.	166	161	1	3	1	..	..	..	..	..
	F.	102	99	1	..	1	..	1	..	..	..
29. Suicide	M.	34	..	..	..	..	2	3	18	8	3
	F.	21	..	..	..	..	1	4	15	1	..
30. Other deaths from Violence	M.	122	10	2	2	12	13	37	27	12	7
	F.	77	7	2	3	4	5	9	15	17	15
31. Other defined diseases..	M.	436	54	5	8	17	19	37	139	79	78
	F.	415	41	7	8	13	19	51	105	63	108
32. Causes ill-defined or unknown	M.	1	1	..	..	..	..	..	..	..	..
	F.	..	..	..	..	..	..	..	..	..	..

APPENDIX 5.

INFANT MORTALITY. CALENDAR YEAR 1928. NETT DEATHS FROM STATED CAUSES AT VARIOUS AGES UNDER 1 YEAR OF AGE.

CAUSES 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 1 year.
Small-pox	..	..	..	..	..	..	..	..	..	..
Chicken pox	..	..	..	..	..	..	..	..	..	..
Measles	..	..	..	..	..	..	1	1	1	3
Scarlet fever	..	..	..	..	..	..	1	..	1	2
Whooping Cough	..	..	..	..	..	2	5	9	3	19
Diphtheria	..	..	..	..	..	..	..	..	1	1
Influenza	..	..	..	..	..	1	2	..	2	5
Erysipelas	..	..	..	..	..	..	..	..	..	..
Tuberculous Meningitis	..	..	..	1	1	..	2	1	2	6
Abdominal Tuberculosis	..	..	..	..	..	..	1	1	..	2
Other Tuberculous Diseases	..	..	..	..	..	1	1	1	..	3
Meningitis (not Tuberculous)	..	..	..	..	..	1	1	1	2	5
Convulsions	6	6	4	2	18	3	2	3	1	27
Bronchitis	..	..	..	1	1	3	5	1	4	14
Pneumonia (all forms)	1	4	..	2	7	8	23	18	24	80
Other diseases of respiratory organs	..	..	..	..	..	..	..	..	..	..
Diarrhœa / Enteritis	1	4	1	1	7	24	28	22	8	89
Gastritis	1	..	..	..	1	1	..	..	..	2
Syphilis	1	1	..	..	2	4	2	..	..	8
Rickets	..	..	..	..	..	..	..	..	..	..
Suffocation, including overlying	10	1	..	..	11	2	3	..	..	16
Injury at birth	10	..	..	..	10	1	..	..	..	11
Atelectasis	16	..	..	..	16	..	..	..	..	16
Congenital Malformations	8	2	1	3	14	9	3	2	..	28
Premature birth	118	17	12	6	153	13	3	..	..	169
Atrophy, Debility and Marasmus	18	2	5	..	25	21	4	1	1	52
Other Causes	11	5	1	3	20	8	7	11	2	48
Totals	201	42	24	19	286	102	94	72	52	606