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COUNTY BOROUGH OF BOOTLE

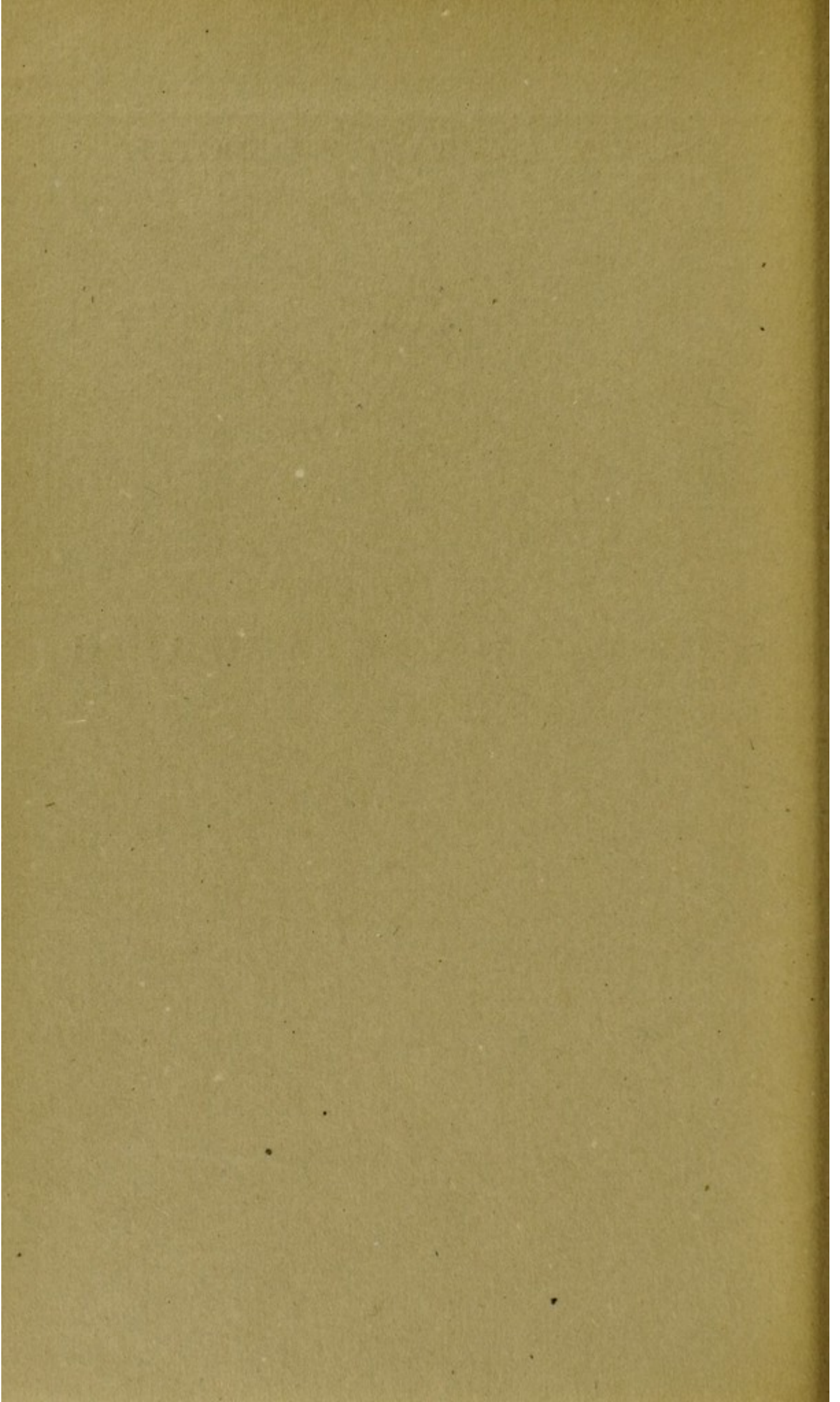


ANNUAL REPORT
OF THE
MEDICAL OFFICER OF HEALTH
FOR
1920.

F. T. H. WOOD, O.B.E., M.D. (Lond.), B.S., B.Sc., D.P.H.,
Medical Officer of Health, School Medical Officer, Administrative
Tuberculosis Officer, and Medical Superintendent of Corporation
Hospital and Sanatorium.

BOOTLE :
BOOTLE TIMES, LIMITED, 30, ORIEL ROAD.

1921.



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BOOTLE TOWN COUNCIL, 1919-1920.

§†His WORSHIP THE MAYOR (H. PENNINGTON, Esq.).

Mr. ALDERMAN BARBOUR, J.P.	*Mr. COUNCILLOR HARRIS.
†Mr. ALDERMAN BOOTH.	§Mr. COUNCILLOR HAYWARD.
*Mr. ALDERMAN CARRUTHERS, J.P.	*Mr. COUNCILLOR HUGHES.
ALDERMAN SIR WM. CLEMMEY, J.P.	†Mr. COUNCILLOR JOHNSTON, J.P.
*Mr. ALDERMAN HANLON.	§*Mr. COUNCILLOR F. W. KING.
Mr. ALDERMAN JONES, J.P.	§†*Mr. COUNCILLOR J. J. KING.
Mr. ALDERMAN MACK, J.P.	Mr. COUNCILLOR LITTLER.
†*Mr. ALDERMAN PEARSON,	†Mr. COUNCILLOR McLEOD, J.P.
M.R.C.S., J.P.	§†Mr. COUNCILLOR MAHON.
§†*Mr. ALDERMAN ROBERTS,	†*Mr. COUNCILLOR MARMION.
L.R.C.P., J.P.	Mr. COUNCILLOR MITCHELL.
Mr. ALDERMAN SMITH, J.P.	†*Mr. COUNCILLOR MUSKER.
Mr. ALDERMAN TOMLINSON.	Mr. COUNCILLOR QUIGLEY.
Mr. COUNCILLOR ASHTON.	†Mr. COUNCILLOR RANDALL, J.P.
§†*Mr. COUNCILLOR BAILEY.	§†*Mr. COUNCILLOR RAFTER,
†Mr. COUNCILLOR BAUCHER.	L.R.C.P.
†*Mr. COUNCILLOR BELL.	Mr. COUNCILLOR SCOTT.
§†*Mr. COUNCILLOR BLACKLEDGE.	§†*Mrs. COUNCILLOR SMITH.
Mr. COUNCILLOR CASSADY, J.P.	†*Mr. COUNCILLOR TURNER.
Mr. COUNCILLOR CONNOLLY.	M.A., M.D.
Mr. COUNCILLOR DOUGHERTY.	Mr. COUNCILLOR VAUX.
Mr. COUNCILLOR EACHUS.	Mr. COUNCILLOR WINSTANLEY, J.P.
§*Mr. COUNCILLOR ELLIS.	Mr. COUNCILLOR WOLFENDEN.
Mr. COUNCILLOR HANKEY.	

* Member of Health Committee.

† Member of Housing and Town Planning Committee.

§ Member of Maternity and Child Welfare Committee.

HEALTH COMMITTEE.

Chairman—Mr. COUNCILLOR TURNER, M.A., M.D., D.P.H., F.R.C.S.

Deputy-Chairman of the Health Committee and Chairman of the Hospitals

Sub-Committee—Mr. COUNCILLOR BAILEY.

MATERNITY AND CHILD WELFARE COMMITTEE.

Chairman—Mr. COUNCILLOR BLACKLEDGE.

Deputy-Chairman—Mrs. COUNCILLOR SMITH.

This Committee consisted of members of the Health Committee (as indicated), together with the following representatives of the Bootle Health Society:—

Chairman—Mrs. H. PENNINGTON (Ex-officio).

Honorary Secretary—Mrs. W. A. DALEY (Ex-officio), (to June).

Mrs. PEARSON (from June).

Mrs. J. G. BLACKLEDGE.

Mrs. L. SMALL.

and representatives of the Bootle Insurance Committee:—

Mrs. K. A. DODD.

Mrs. DAVIDSON.

HOUSING AND TOWN PLANNING COMMITTEE.

Chairman—Mr. COUNCILLOR JOHNSTON.

Deputy-Chairman—Mr. COUNCILLOR MARMION.

STAFF OF THE PUBLIC HEALTH DEPARTMENT.

Medical Officer of Health, Administrative Tuberculosis Officer, and Medical Superintendent of the Corporation Hospitals—

W. A. DALEY, M.D., B.S., B.Sc. (Lond.), B.A. (R.U.I.), D.P.H. (Camb.).
Resigned 30th June, 1920.

F. T. H. WOOD, O.B.E., M.D., B.S., B.Sc. (Lond.), D.P.H. (Durh.).
Appointed 1st July, 1920.

Tuberculosis Officer and Deputy Medical Officer of Health—

H. J. MILLIGAN, M.C., M.D., Ch.B. (Glas.), D.P.H. (Camb.).
Resigned June, 1920.

J. P. BROOM, M.B., Ch.B. (Glas), D.P.H. (Manchester)
Appointed November, 1920.

Assistant Medical Officer of Health and Medical Inspector of Scholars—

J. MAXWELL TAYLOR, M.A., M.B., Ch.B., D.P.H. (Aberdeen).
Resigned September, 1920.

Miss K. M. COWE, M.B., Ch.B. (Liverpool). Appointed October, 1920.

Corporation Hospital, Linacre Lane.

Matron - - Miss M. JOHNSON.

Maghull Sanatorium.

*Visiting Medical Officer (Part-time)—*A. HENDRY, M.D. (Liverpool).

Matron—Miss E. HOLDEN, R.R.C.

Chief Inspector of Nuisances, Inspector under the Food and Drugs Acts, and the Housing, Town Planning, etc., Acts, etc—

††R. J. McCULLOCH.

Inspectors of Nuisances—

††B. J. HOLDEN. †W. ROBSON. ††R. C. FORSTER. ††G. EVANS.

Clerical Staff—

Chief Clerk - - N. LOCKWOOD.

W. E. BLUNDELL. Miss WILSON. Miss EDWARDS. Miss THOMPSON.
Miss THOMAS. Miss MAXWELL.

Infant Welfare Visitors—

§†Miss A. STOTT. †Mrs. MCKOWEN. §*Miss HUGHES. §*Mrs. ROGER.

*Tuberculosis Nurse—*Nurse KELLY.

Tuberculosis Visitor—§*Mrs. MEREDITH.

Infant Welfare Clinics—

Medical Officer (Part-time)—

Miss EDNA MAWSON, M.B. (L'pool). Resigned 25/3/20.

Miss C. HANSON, M.B. (L'pool). Resigned 30/11/20.

Ante-Natal Clinic—

*Medical Officer (Part-time)—*R. A. HENDRY, M.D. (Lond.).

† Certified Inspector of Nuisances. † Certified Inspector of Foods.

* Certified Health Visitor. § Certified Midwife.

HEALTH DEPARTMENT,
TOWN HALL,
BOOTLE,

April, 1921.

*To the Mayor, Aldermen and Councillors
of the County Borough of Bootle.*

I have the honour to present herewith the forty-eighth Annual Report on the work of the Health Department. Dr. W. A. Daley was responsible for its supervision during the first half of the year, and I commenced duties on 1st July on his resignation to take another appointment. In June, Dr. H. J. Milligan, Tuberculosis Officer, also resigned, and temporary arrangements for the staffing of the Linacre Hospital and Tuberculosis Dispensary were continued until October, when you agreed to a redistribution of duties, resulting in the appointment of Dr. J. P. Broom to the hospital and dispensary and Dr. K. M. Cowe to Maternal and Child Welfare duties in addition to her work in connection with the Medical Inspection of School Children.

Attention may be drawn to the following features of interest during the year.

- (1) The lowest death rate ever recorded in Bootle.
- (2) The second lowest infantile mortality rate recorded in Bootle.
- (3) The occurrence of eight cases of smallpox in March and April.
- (4) The continued prevalence of diphtheria above the normal incidence.
- (5) The re-organisation of the work of the medical staff of the Council leading to a reduction in their number.
- (6) A resumption of systematic inspection of working-class houses.
- (7) Approval of the abolition of certain classes of large fixed ashpits and their replacement by small ashbins.
- (8) The establishment by the Bootle Health Society of additional welfare clinics.

The following subjects referred to in the body of the report are mentioned as deserving the special attention of members of the Sanitary Authority:—

- (1) The difficulty of after-care of the tuberculous patient (page 36).
- (2) The importance of efforts to diminish maternal and neo-natal mortality through the agencies of Ante-Natal Clinics and a Maternity Home (pages 44 to 46).
- (3) The importance of an adequate, clean and pure milk supply (pages 19 to 21).
- (4) The necessity of pressing on with new housing provision.

At the risk of repeating an obvious truism I would assert that this last matter of housing constitutes the most pressing question in measures for the promotion of public health; taking housing at its broadest, and including in it not only the provision of a sanitary dwelling but also the securing for it of a decent environment, it is clear that the satisfactory solution of the problem is necessary as a foundation on which to erect schemes to improve the health of the individual, whether as infant, child, mother, industrial worker, or tuberculous patient.

With the many changes in the staff of the department additional credit is due this year to Mr. McCulloch, Chief Inspector of Nuisances, and to Mr. Lockwood, Chief Clerk, for maintaining the efficiency and continuity of their work under difficult circumstances.

I wish to record my indebtedness to the Chairman and Members of the Health Committee for the sympathetic reception given to recommendations and suggestions which have been made for the maintenance and development of the various sections of Public Health work.

I have the honour to be,

Your obedient servant,

F. T. H. WOOD,

Medical Officer of Health

STATISTICAL SUMMARY FOR 1920.

Area in Acres (inclusive of Dock Estate)	...	...	...	...	1,946
Area in Acres (exclusive of Dock Estate)	...	...	...	...	1,610
Population at Census of 1911	...	...	...	...	69,876
Estimated Population in July, 1920	...	...	...	...	80,029
Population per Acre (excluding Dock Estate)	...	...	...	...	49·7
Number of Houses in the Borough on December 31st, 1920	...	...	...	...	13,450
Average Number of Persons in each inhabited Building (at Census, 1911)	...	...	...	...	5·63
Number of Births during 1920	...	...	...	...	2,289
Birth-rate per 1,000 of the population	...	...	...	...	28·60
Fertility-rate per 1,000 women aged 15 to 45 years	...	...	...	...	116
Number of Deaths	...	...	...	...	1,136
Death-rate per 1,000 of the population	...	...	...	...	14·19
Natural Increase of the population during the year	...	...	...	...	1,153
Number of Deaths of Infants (under the age of one year)	...	...	...	...	223
Infantile Mortality per 1,000 Births	...	...	...	...	97
Number of Uncertified Deaths	...	...	...	...	45
Deaths from Influenza	...	...	...	...	24
Death-rate from Influenza per 1,000 of the Population	...	...	...	...	0·3
Death-rate from the seven principal Zymotic Diseases—Smallpox, Whooping-Cough, Measles, Diphtheria, Diarrhoea, Scarlet Fever, and "Fever" (Typhoid, Enteric, and Typhus) per 1,000 of the population	...	...	...	...	1·52
Death-rate from Diarrhoea and Enteritis, of children under two years, per 1,000 births	...	...	...	...	9·6
Death-rate from Phthisis per 1,000 of the population	...	...	...	...	1·17
Death-rate from all forms of Tuberculosis per 1,000 of the population	...	...	...	...	1·60
The Rateable Value of the Borough for 1920-21 was	...	...	...	...	£499,154
The Assessable Value of the Borough for 1920-21 was	...	...	...	...	£420,296
A Penny Rate on the District Fund produced in 1920-1921	...	...	...	...	£1,714
In 1920-1921 the General District Rate was 6/5 and the total rates 14/2 in the pound (excluding water rate and charges).					

COUNTY BOROUGH OF BOOTLE.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH.

I. NATURAL AND SOCIAL CONDITIONS.

PHYSICAL FEATURES AND GENERAL CHARACTER.

The County Borough of Bootle has an area of 1,946 acres, excluding the bed of the Mersey, and of 1,610 acres excluding the Dock Estate. It is bounded on the south and east by the City of Liverpool, and on the north by the Urban Districts of Waterloo-with-Seaforth, and Litherland. The western boundary of the Borough abuts on the mouth of the River Mersey.

The land falls from east to west, i.e., towards the river. The highest parts are situate on the extreme north-east and south-east boundaries, and reach a height of 125 feet above mean sea level. The lower portion adjoining the docks is from 22 to 24 feet above mean sea level.

Geologically the upper layer consists of drift sand varying in depth, below which there is in places a layer of clay. Underneath this is red sandstone, which appears at the surface in certain parts of the town.

SOCIAL CONDITIONS.

No recent information is available as to the occupations followed, but there is no reason to suspect a large variation from the broad facts disclosed in the 1911 census. At that time about one-fifth of the occupied males were engaged as dock labourers or general labourers, and about one-tenth in the merchant service. The large proportion of families thus dependent on the earnings of casual labour is not without its effect on the health statistics of the town, and although these vital statistics show a progressive improvement during the last twenty or thirty years, this weighting of the figures must be taken into account in making comparisons with other areas.

The Clerk to the West Derby Board of Guardians has kindly supplied the following information relating to poor relief given in the Bootle district. The figures show a large increase in out-door relief, both medical and non-medical.

For the year 30th September, 1920, the total number of individual orders on the Medical Officer for out-door medical relief only, was 677 compared with 498, 609, 669, 864, 1,120, and 1,464 in the six preceding years. For the half-year ended 30th September, the cases for out-door relief were 735, compared with 457, 403, 546, 589, 618, and 835 in the same period of the six preceding years.

During the year 1,277 in-patients and 16,424 out-patients were treated at the Bootle Borough Hospital; this represents, compared with 1919, increases of 177 and 3,449 respectively. It should be noted that in addition the Liverpool Hospitals, both general and special, are also attended by Bootle residents.

VITAL STATISTICS.

Population. In the year immediately preceding the decennial census the estimates of population are less reliable than those immediately following the taking of the census. The Registrar-General's estimate of the population in 1920 was 80,029 and from this figure the various rates have been calculated.

Births. During the year 2,289 births were registered in the district and 60 children of Bootle parents were born in other districts. These 2,289 births represent a birth-rate of 28·6 per 1,000 of the population, that for England and Wales being 25·4. In 1919 the Bootle birth-rate was 23·9 and for the decennium 1910-19 it was 27·6. There were 1,138 males and 1,151 females. It should be noted that the birth-rate, which showed a progressive increase during each quarter of 1919, reached a maximum in the first quarter of 1920, and has since commenced to fall, and the figures for the fourth quarter give a rate of 25·2. It is not expected that the figure of 31·7 attained for the year 1914 will again be reached.

The Ward with the highest birth-rate was Knowsley 35·2; Mersey was the second highest 30·9, and Stanley Ward the lowest 21·4.

The illegitimate births numbered 88, and were 3·8 per cent. of the total; 15 took place outside the borough. In 1919 the total number was 60; in 1918, 59, and in 1917, 50.

The natural increase of the population, i.e., the excess of births over deaths was 1,153, being a rate of 14·4 per 1,000 of the population; in 1919 it was 760 or 9·4 per 1,000; in 1918 it was 381 or only 4·7 per 1,000.

Deaths. The number of deaths registered in Bootle during the calendar year was 1,000; this number includes the deaths of 59 non-residents which occurred in the borough, 37 of whom died in the Borough Hospital and 13 in Linacre Hospital. One hundred and ninety-five persons who died in other parts of the country were stated to have been inhabitants of Bootle; these include 128 who died in Poor Law Institutions, 38 who died in Voluntary Hospitals in the City of Liverpool, 15 in Lunatic Asylums, and 2 in the Smallpox Hospital, Rock Ferry.

When the necessary adjustments in these respects have been made the total number of deaths assigned to Bootle is 1,136, which is a death-rate of 14·2 per 1,000 of the population; in 1919 it was 15·0, and in 1918, 19·4. This rate is the lowest recorded in Bootle, the next best having been 15·0 in 1919, and 14·7 in 1910, while the death-rate in Bootle for the decennium 1910-1919 was 17·2, and for 1900-1909, 18·6.

The crude death-rate of the 96 great towns of England and Wales during 1920 was 12·5 compared with 13·8 in 1919, and 18·2 in 1918.

This year the highest death-rate was in Knowsley Ward, 20·1; Mersey Ward had the second highest rate, 18·6; Orrell had the lowest rate, 10·8.

The death-rate during the first quarter of the year was 19·3; during the second, 14·9; the third, 9·6, and the fourth 12·9.

The number of deaths which occurred in institutions was 335, i.e., 29 per cent. of the total deaths, compared with 33 per cent. in 1919, and 27 per cent. in 1918.

Mortality in relation to Sex. There were 625 deaths of males and 511 of females.

Infantile Mortality. There were 223 deaths of infants, compared with 184 in 1919; 210 in 1918, 187 in 1917, and 227 in 1916. The infantile mortality rate was 97 per 1,000 births compared with 96 in 1919, 116 in 1918, 99 in 1917, 109 in 1916, and 121 in the decennium 1910-1919. With last year as an exception it is the lowest ever recorded in the town. The rate of infantile mortality amongst males was 113, and amongst females 82. Throughout England and Wales the rate of infantile mortality was 80 per 1,000 births; in the 96 great towns it was 85.

This important subject is dealt with in detail in a later section on pages 47 to 49.

Forty-one children died before they were a week old, and a total of 82 or 37 per cent. of all the deaths under one year occurred in children under the age of one month. This is a neo-natal mortality rate of 36 per 1,000 births compared with 36 in 1919 and 31 in 1918.

Child Mortality. In 1920 there were 142 deaths of children aged 1 to 5 years. The principal causes were—respiratory diseases 50 (including 32 from broncho-pneumonia); diphtheria, 15; influenza, 2; tuberculosis, 7; diarrhoea, 7; scarlet fever, 7; measles, 22; whooping cough, 6. This mortality from 1 to 5 years of age reflects accurately the sanitary condition of the child's environment, and will be reduced in proportion as housing and other conditions affecting the lives of the people are improved.

Uncertified Deaths. Seventy-three deaths (56 of residents and 17 of non-residents) were the subject of a Coroner's inquest, while in 45 cases the death was registered without certification by a medical man or the Coroner.

Causes of Death. The causes of death, classified according to age, are shown in the table on page 64.

Pneumonia was responsible for 159 deaths, bronchitis for 90, and other respiratory diseases for 18, making the total deaths from respiratory diseases (excluding tuberculosis) 267, or 23·5 per cent. of the total deaths at all ages. This is in close correspondence with the figure of 279 deaths from respiratory diseases registered in 1919.

The cause of death next in importance was tuberculosis, which, in one form or another, accounted for 128, or 11·3 per cent. of the deaths as contrasted with 110 or 9·5 in 1919. This matter is further dealt with in the tuberculosis section of this report.

The group of cases included under the heading "congenital debility and malformation, including premature birth," accounted for 77 deaths, as contrasted with 64 in the previous year. This matter is again alluded to in the Maternal and Child Welfare section of this report.

Cancer was registered as the cause of death in 76 cases, as contrasted with 80 in the previous year. There appears little doubt that the deaths from cancer show a real increase during the last 30 or 40 years, which is not to be explained away on the score of more correct diagnosis or of the lengthened expectation of life enabling more people to live into the age groups in which cancer commonly occurs.

Deaths from violence numbered 51 as contrasted with 46 in the previous year.

The epidemic diseases (excluding influenza) were responsible for more deaths in 1920 than in the previous year, although the number, 122, was less than the average of 149 which had obtained in the preceding ten years. There were 33 deaths from measles as contrasted with 12 during 1919, 31 deaths from diphtheria as contrasted with 16 during 1919, 19 deaths from whooping cough as against 2 in the previous year, and 11 from scarlet fever as against 8.

The deaths from diarrhoea and enteritis showed a satisfactory decrease from 41 during 1919 to 26 in the year under review; this is to be ascribed in part to the mildness of the late summer months, as well as to the educative work on the care of infants carried on in the homes and in the Welfare Centres.

II. SANITARY CIRCUMSTANCES.

Water Supply. The water supply is constant and the Analyst's reports, one of which is given in the table on page 67, show it to be of excellent quality. A little Green Lane Well water mixed with that from the other sources is supplied to the upper parts of the borough; most of the town is supplied with Vyrnwy or Rivington water or a mixture of these. The general public is so satisfied with the existence of a pure water supply that

the great part played thereby in promoting the public health is apt to be overlooked; but in addition to the extinction of water-borne diseases, a progressive drop in the general death-rate is found to follow the introduction and maintenance of a pure water supply.

Drainage and Sewerage. The sewerage system is entirely by gravitation, discharging direct into the River Mersey. The Borough is divided into four drainage districts, with four separate outfalls into the river. One of these outfalls is used solely for Bootle, and one in addition conveys the sewerage from Walton Gaol, situate within the City of Liverpool; one is used jointly with Liverpool, and the fourth drains a part of Seaforth and the greater portion of Litherland, both Urban Districts.

Speaking generally, the sewers within the Borough are, so far as is known, sufficient for the needs of the Borough, though occasionally, after very heavy rainfall, a few of the cellars in the lower part of the town are flooded.

The sewers have good falls, and, with the exception of some passage sewers, are self cleansing; to these latter, automatic flushing tanks, supplied with salt water, are fixed.

Since October, 1903, all new house drains have been subjected to a water test before finally being approved.

Closet Accommodation. Every house, with the exception of 23 in the outlying parts of Orrell, is provided with one water closet or more. The conversion of middens, with the exception of the 23 already mentioned, was completed in 1910. The Authority may be congratulated on having undertaken at that time a sanitary improvement of the first class, which has resulted in the almost complete disappearance of enteric fever from the town.

Public Conveniences. There are 28 public conveniences, 5 of which have water closets.

Scavenging. The following is the number of ashbins and ashpits in the Borough:—

	1920.	1919.	1918.	1914.
Ashbins	4780	4726	4722	4645
Ashpits, single ...	1436	1457	1465	1486
Ashpits, double ...	4311	4315	4323	4336
Pail Closets	Nil	Nil	Nil	Nil
Middens, single ...	21	21	21	21
Middens, double ...	2	2	2	2

During the year the number of ashbins increased by 54, single ashpits decreased by 21 and double ashpits decreased by 4.

The ashbins were emptied weekly; the ashpits were emptied every four to five weeks and middens every eight to ten weeks. Ashpits are emptied by shovelling their contents into baskets which are then taken through the back passages to the street to await collection by the horse-drawn or electrically propelled covered carts of the Sanitary Department. This method, which is necessarily adopted because of the existence of large ashpits, is not without its objectionable features and constitutes an additional argument for the substitution, as occasion permits, of small moveable ashbins for the large fixed receptacles.

Ashpit Conversions. The Bootle Order, 1914, enables the Corporation to contribute an amount not exceeding half the cost of substituting a moveable ashbin for a fixed ashpit which has been reported in writing by the Medical Officer of Health to be, by virtue of its situation, prejudicial to health. In connection with this matter a survey of the Borough was made in 1913, and six groups of houses numbering 1,615 in all, were described in which the situation was so prejudicial; estimates were prepared, and work was about to be put in hand in respect of one group early in 1915, but was abandoned owing to the war. In October last it was suggested that this was a sanitary improvement urgently required, and it was recommended that a commencement should be made with three groups of houses viz., (a) 132 houses in a congested area off Derby Road with very small yard space and ashpits within six feet of the house wall, (b) 99 houses in the Derby Road area in which the yard space is greater than in group (a), but where the ashpits are within four feet of the house wall, (c) 70 houses in various parts of the town in which the ashpits abut against the house wall. The principle was

approved and in November notices were duly served requiring the substitution of moveable ashbins in respect of twenty-four houses in group (a) and it is hoped to proceed systematically with the work from now onwards.

Refuse Disposal. The existing refuse destructor has been insufficient for some years to cope with the amount of refuse to be disposed of, and the surplus is being tipped on low-lying ground between Brookhill Road and Walton Gaol. During the latter portion of the year the Destructor was put out of action for overhaul and repairs, and an extra burden was then thrown on the limited space at the tip. In 1913 proposals were considered for the erection of additional destructor cells adjoining the present installation, but the execution of the plan was postponed on account of the war. At the present time the Authority is considering proposals based on the principle of salving all portions of the domestic and trade refuse having any commercial value as an alternative to the extension of the Destructor, but it must be pointed out that the area within the Borough available for tipping purposes is limited and the position must be faced that a new scheme should be in working order in about two years.

SANITARY INSPECTION OF THE DISTRICT.

The staff for this work consists of the Chief Inspector with four assistants, one of whom is engaged on special duties mainly in connection with food inspection. Under powers obtained in the Bootle Corporation Act, 1920, all four assistants are designated Inspectors of Nuisances and consequently have powers such as the serving of notices and the seizing of unsound food—a distinct advantage in the absence of the Chief Inspector. The staff was raised from three to four assistants in October in order to enable a recommencement to be made with the inspection of houses under the Housing (Inspection of District) Regulations, 1910.

Nuisances. On page 67 will be found a tabular statement setting out details of inspections made and notices served by the Sanitary Inspectors during 1920, together with the result of the service of such notices. A satisfactory feature of this work is the small number of prosecutions which needed to be instituted—a testimony both to the helpful attitude of property owners at a time when the cost of repairs is high, and to the patient and persuasive methods of the inspecting staff.

In respect of nuisances it will be noticed that the number of notices served on owners shows a small increase from 1,864 to 1,919, and notices served on occupiers an increase from 137 to 141. The work done under the Housing Acts is set out in the Housing Section on pages 55 to 61.

Lodging-houses. There are three common lodging houses — registered to accommodate 150 lodgers—in the borough which have received frequent visits of inspection, and have been found to be kept in accordance with the Bye-Laws. With regard to houses let in lodgings for regulation of which Bye-Laws exist, it should be pointed out that with the overcrowding consequent upon the cessation of building for the last few years there has been a large increase in houses of this class, and no pretence can be made of enforcing in all respects the Bye-Laws in question; although the occupation, by two or more families of small houses designed for occupation by one, results in serious faults of hygiene arising from the absence of a food store or a cooking grate and a convenient water supply or wash-place.

Canal Boats. As required by the Canal Boats Acts inspections have been made throughout the year and 115 boats have been inspected. Infringements of the Acts and Regulations were noted in respect of eight defects and notices were duly served on the owners.

Offensive Trades. The following are the offensive trades carried on in the Borough:—Tanneries 2, Fat Melter 1, Bone Melter 1, Rag and Bone Dealers 4. They were kept under sanitary supervision throughout the year, and in one or two instances action was taken to abate nuisances.

During the war a certain relaxation of the Bye-laws relating to the keeping of pigs was permitted, and the number of piggeries increased. Steps are now being taken to revert to pre-war conditions, and the eleven piggeries in the town are receiving frequent visits of inspection.

Factories and Workshops. Particulars of inspections made under the Factories and Workshops Act will be found on page 70. The number of visits paid shows a small increase over preceding years. A note on the condition of the bakehouses appears on page 72.

Smoke Abatement. In the endeavour to cut down the nuisances from smoke, 101 observations of works chimneys were made, and in 12 cases intimations were sent requesting

that steps should be taken to reduce the emission of black smoke. In two instances prosecution was necessary, and abatement orders were obtained with awarding of costs to the amount of £1 7s. 6d. Reference should be made, however, to the Interim Report of the Departmental Committee on Smoke and Noxious Vapours Abatement in which it is stated that even in industrial areas domestic chimneys contribute at least 50 per cent. of the total smoke nuisance. Having this in mind the Departmental Committee urged the great importance of providing, in connection with new housing schemes, smokeless arrangements for ordinary rooms, for supplying hot water, and for cooking, and they added that such arrangements to obviate the production of smoke were practicable. In this connection it may be pointed out that the plans of the new houses in course of erection at Orrell provide for the fitting of a gas cooker in each dwelling.

Schools. The sanitary oversight of the schools in the Borough is in the hands of the Medical Officer of Health, who is also the School Medical Officer, and full details of the work done in this connection are set out in the Annual Report to the Local Education Authority. During the year school closure was required in two instances, viz., at the Infants' Departments of St. John's C. E. and St. Winefride's R. C. Schools, from 5th to 22nd March on account of the prevalence of measles, which had reduced the attendances to 70 per cent. and 71 per cent. respectively.

Cinematograph Shows. There are six cinematograph halls in the Borough and 90 visits of inspection have been paid to them during the year. As requested in a circular letter dated 20th August, 1920, from the Ministry of Health, a report on the sanitary condition of Theatres, Music Halls, and other places of Public Entertainment was forwarded to the Licensing Authority at the conclusion of the year. In general it may be said that the sanitary provisions of the Regulations adopted by the Justices in November, 1918, were complied with by licensees, and that attention was given by them to minor defects which were pointed out during the course of the year.

The important matter of eyestrain in children attending cinematograph shows was brought to the notice of the Licensing Authority in March, 1921, on the hearing of applications made for extensive alterations in respect of two existing picture houses. For some years past the risk of injury to children's eyesight on account of flicker, glare and intensity of illumination of the screen as contrasted with that of the rest of the hall, had been in the

minds of ophthalmologists, and in 1919 the Illuminating Engineering Society appointed a joint Committee of illuminating engineers, medical men, and representatives of the cinema industry to investigate the matter.

The most important of this Committee's recommendations deal with the distance of the front row of seats from the screen, and the recommendations were framed not only from theoretical considerations but from experience of the discomfort and fatigue to vision produced when pictures are viewed from certain positions in a number of cinema halls. The Committee unanimously agreed that the possibility of eyestrain would be much diminished if the angle to which the eye has to be directed upwards could be limited, and they recommend that the angle of elevation measured from the top of the screen to the eye should not exceed 35 degrees; or in other words, that the distance of the front seats from the screen should be about one and a half times the height of the screen. This formula for expressing the distance between seat and screen was arrived at in preference to a flat rate of distance in feet, because different halls have varying practices as regards the size of the picture screen, and its height above floor level. In one of the two cases in question the angle of elevation proposed by the applicants was as much as 62 degrees, on account of the unnecessarily large and unnecessarily high picture screen in relation to the size of the hall.

It is agreed that compliance with the Joint Committee's recommendation will entail some loss of seats and consequently of revenue, but one is certain that when architects are faced with the necessity for such compliance they will so modify their plans by lowering, setting back, or reducing the size of the picture screen that only the minimum number of seats will be lost.

Ammonium Sulphate Works. Reference was made in the last Annual Report to nuisance arising from the emission of sulphuretted hydrogen from the Ammonium Sulphate Works of the Liverpool Gas Company. As the manufacture of this product is included in the schedule of the Alkali, etc., Works Regulation Act, 1906, the Local Authority could only take steps through the Chief Inspector of Alkali, etc., Works. Several representations were duly made to him, with the result that modifications of the purifying plant were put in hand.

Contagious Diseases of Animals Acts. The administration of these Acts in so far as relates to the disinfection of premises is in the hands of the

Health Department. During the year eight cases of parasitic mange were reported, compared with eighteen in 1919. In four cases the disease occurred in wooden stables which previous experience had shown could not be efficiently disinfected. Powers to meet this position were obtained in the Bootle Corporation Act, 1920, and under Section 19 of this Act, notices will be served on the owners of these wooden stables requiring them to demolish the structures in cases where it is established that they are not capable of thorough disinfection. Fifty-six visits were paid to the eight premises in which the horses were stabled.

Rag Flock Act. Rag flock is used at only one shop in the town; a sample of this was taken, and on chemical examination it was found to be clean.

Fabrics Misdescription Act. No samples were taken.

III. SANITARY CONTROL OF THE FOOD SUPPLY.

One of the Inspectors of Nuisances holding the special food certificate of the Royal Sanitary Institute is engaged for the greater part of his time on work connected with the sanitary supervision of the food supply.

Milk Supply. The milk supply of the Borough is in part brought in by rail and in part derived from cows kept in shippens within the town. Before the war the number of cows kept in the Borough was about 550, but in January 1920, it had fallen to 330, at which figure it now stands. They are housed in 24 shippens which received 243 visits from the Food Inspector. The cow-keepers comply readily with the requirements of the Inspector, and the shippens are constructed in accordance with regulations made under the Dairies, Cowsheds, and Milkshops Order. These regulations, however, prescribe but a modest standard in respect of such important requirements as that natural light should reach all parts of the cowshed, and that good artificial light should be provided during the hours of darkness when milking often has to be done. The ventilation requirements, too, are not in keeping with modern views of the value of cool moving air, and in a few instances the conditions of darkness, dampness, warmth and stillness of air are such that it is surprising that any animal can endure them for six months without contracting tuberculosis.

Considerable importance is attached to the necessity for a higher standard in the production and distribution of milk, but it is recognised that as long as milk remains the one article of food for which one price is given irrespective of its quality or its cleanliness there is little or no inducement for the producer to alter his present methods. It is, however, clearly established that the production of clean milk is not a question of expensive buildings or equipment; it is almost entirely a matter of careful cleanly methods on the part of those engaged in handling the milk, and there is accordingly some hope that the clean article will ultimately be obtained at an increase of only about one penny per quart.

Recent Milk Orders of the Food Controller have laid down conditions under which licences for the use of the designations "Grade A Certified Milk" and "Grade A Milk" may be obtained. In both cases the milk must be produced under particularly clean conditions by herds that contain no animal which reacts to the tuberculin test, and must be bottled before leaving the farm or the retail distributors' premises. One criticism levelled against this grading of milk has been based on the assumption that it will result in one quality of milk reaching the well-to-do and another the poorer classes. Experience in New York and elsewhere has established it clearly that this does not happen, but that the demand for clean milk has educated producers and distributors in the methods they employ with the result that in New York Grade C milk (in which class practically all milk sold in England will fall) has disappeared from the market, six-sevenths of the milk supply is Grade B, one-seventh is Grade A, and all milk is distributed in bottles.

In November the Health Committee made an effort to bring home to the general public and to those engaged in the dairy industry the importance of the whole question of a clean and plentiful milk supply, and arranged a public meeting at which a film was shown depicting the production of "Grade A Certified Milk" on an English farm, and an address was given by Mr. Wilfred Buckley, C.B.E., Chairman of the National Clean Milk Society. The meeting was well attended by cow-keepers and dairymen of the neighbourhood, and the following up of the advice thus given cannot fail to have results.

The need for improvement on the present methods was illustrated in the last Annual Report, when figures relating to the number of bacteria in Bottle milk were given. Further bacterial counts have been made this

year and a sample analysis of milk, taken immediately it had left the cooler in the dairy of one of the Bootle cow-keepers by no means unsympathetic to the general question of clean milk, showed similar results; there were 20,000,000 bacteria per cubic centimetre, and *Bacillus Coli* (indicating contamination with manure) was present in sufficient numbers to be found in 1/1000th part of a cubic centimetre.

One cannot leave this matter, which is taken up largely in order to control tuberculosis and intestinal disease in infants and young children, without a recognition of the fact that a pure and clean milk supply is not the whole story; milk is easily contaminated, and dirty methods of storing and using in the home may nullify all efforts taken elsewhere.

The Use of Dried Milk. The above considerations lead on to mention of the increasing use of dried milk powders, which, by addition of water, can be reconstituted into liquid milk of absolute purity and having most of the important properties possessed by fresh milk. Not only have we many years of experience on a large scale of healthy children whose staple article of food in infancy has been one or other form of dried milk, but we also have research work which has been devoted to ascertaining the presence of the vitamins or accessory food factors, which play such an important part in nutrition; from both these sources of information one is assured that dried milk constitutes a satisfactory infant food which possesses obvious advantages in purity, distribution and storage over liquid milk as at present retailed.

Public Health (Milk and Cream) Regulations. One hundred and sixteen samples of milk were examined under these Regulations for the presence of preservatives; none was found. Two samples of preserved cream were submitted for analysis and both contained less than the maximum amount of preservative allowed by the Regulations.

Meat Inspection. As in 1914 there is only one slaughter-house registered in the Borough, and this was not used during 1920.

There are 61 butchers' shops, and these have received frequent visits of inspection from the Food Inspector; the table below indicates the amount of meat and other food destroyed under his supervision. None was formally seized, but all was voluntarily surrendered—on account of decomposition

except in the case of 37 lbs. of tuberculous meat and 45 lbs. of meat affected with cystic disease.

	Tons.	Cwts.	Qrs.	Lbs.
Meat	—	19	1	20
Fruit and Vegetables ...	—	17	2	—
Condensed Milk	1	8	1	11
Fish	—	1	0	15
Miscellaneous	—	—	1	12

Other Foods. Food shops, other than butchers, in the town number:—grocers 161, fish 60, fruit and vegetables 102, bread and flour 218. All have received frequent visits of inspection, and the amount of unsound food detected is shown in the table above. In October a serious fire occurred at premises in Hemer Place occupied by a firm of agents for the sale of tinned food; much damage was done and the subsequent sorting under the supervision of the Food Inspector occupied many weeks, and resulted in the rejection of approximately 80 tons of tinned fruit and fish as being unfit for food. The remaining large quantity was sold to wholesale firms in various parts of the country, and in each case the Sanitary Authority concerned was communicated with in order that a more detailed examination might be made before the goods were passed for consumption.

Food Factories. There are 13 food factories in the town, several of them of large size. Two hundred and fifty-two visits of inspection were paid to these factories, and it is satisfactory to note that the conditions in these large establishments require no adverse comment.

In August, 1920, the Corporation obtained powers under the Bootle Corporation Act requiring the registration of premises used for the preparation of potted or preserved foods. Suitable notice was given of the coming into force of this section, and as a result of applications received, 38 such premises are now registered for the manufacture of sausages.

Bakehouses. There are 33 bakehouses (16 being underground) of which latter however, one is not in use, and 20 confectionery bakehouses. Two hundred and ninety visits of inspection were paid to them during the year. The general condition is good, those underground being in many instances as airy, well lighted and well ventilated as those on ground level.

Dining Rooms. Attention has been given to the sanitary condition and methods prevailing in the cafés, dining rooms, and coffee houses of the Borough. In all 30 establishments have received visits of inspection from the Food Inspector and in general they may be said to be without serious sanitary defect. The most numerous class, however, comprises coffee shops doing a working-class trade, and in these an attempt has been made to improve the washing-up methods to that standard at least which prevails in their customers' homes; a common fault with these smaller coffee shops arises from the facts that the utensils are not washed over a sink with running hot water, and that the drying cloths are used after their condition well warrants a fresh supply.

Sale of Food and Drugs Acts. The Public Analyst is Mr. W. H. Roberts, M.Sc., F.I.C. Table 9 on page 73 shows that 198 samples were taken of which 116 were milk. The reports show that 15 samples or 12·9 per cent. were adulterated or not up to standard. The majority of the samples were taken informally through purchase by an agent, and in cases where adulteration was detected a formal sample was then taken in order that the necessary legal action might be instituted; in 70 milk cases and in 27 other instances, however, the procedure prescribed by the Act was adopted straight away. Twelve of the milk samples or 6 per cent. were not up to the standard provided by the Regulations of the Board of Agriculture, and in seven of these the deficiency was marked; three were informal samples, and the vendors of the remaining four were prosecuted and fines and costs amounting to £42 2s. 6d. were inflicted. Furthermore two informations were laid against one of the cow-keepers in the Borough; one for "obstruction" and one for "refusing to sell" a sample of milk to the appointed inspector, and as a result the offender was mulcted in fines and costs amounting to £2 7s. and £5 on the respective charges.

The Public Analyst has kindly supplied me with the result of the analysis of every sample of milk submitted to him from Bootle, and it is interesting to note that including the samples returned "not genuine" the average amount of cream was 3·77 per cent. and of non-fatty solids 8·83 per cent.; the minimum standards fixed by the Board of Agriculture in the Sale of Milk Regulations, 1901, are 3 per cent. fat and 8·5 per cent. non-fatty solids, below which figures the milk is presumed to be not genuine. In two cases this year the Analyst certified that the milk had been deprived of 10 per cent. and 6 per cent. of its cream respectively;

further that four samples contained 8, 6, 5 and 5 per cent. of added water respectively; five other samples were reported to be slightly watered and another to be deficient in fat to the extent of 16 per cent. and to contain added water to the amount of 12 per cent. Forty-three of the one hundred and sixteen milk samples were taken at railway stations in the town and thirty-eight of these were certified to be genuine; in three of the remaining cases the variation from the standard was not serious and no action was taken; prosecutions were instituted and convictions were obtained in the case of the other two.

A careful following up in the case of one cow-keeper in the Borough cast serious doubts on the efficacy of the fines inflicted in securing the object in view, viz., the securing to the public of an article of proper nutritive value for use as an infant food. This man had seven convictions against him in the course of eighteen months for offences under the Food and Drugs Acts, and on the last occasion, when he was fined £25, it was shown that the addition of water to the extent of which he was convicted was resulting in a fraudulent profit of at least 27s. 6d. per day, whereas the amount of fine and costs levied on his fifth and sixth convictions amounted only to £7 7s. This matter of inadequate penalties has been discussed with reputable dairymen, and they are in agreement with my views that such treatment is not wanted by the honest trader, and that powers, which may shortly be obtained under the new Milk and Dairies Bill by the Local Authority, of revoking a licence are much to be desired.

Twenty-two samples of butter were taken for analysis and all were found to be genuine with the exception of one sample which contained 50 per cent. margarine. This being an informal sample steps were taken to comply with the procedure of the Sale of Food and Drugs Acts, and the sample thus obtained was found to be genuine. Seven samples of margarine were purchased and found to be genuine. One sample of potted shrimps purchased informally was found to contain 0.77 per cent. borates.

During the continuance of the food control the Chief Sanitary Inspector rendered such assistance as was necessary, and two prosecutions were taken; one for making an overcharge for sausages, the delinquent being fined £2 and ordered to pay £1 16s. special costs; and the second for adding colouring matter to milk, for which a fine of £2 was inflicted.

IV. PREVALENCE OF, AND CONTROL OVER, INFECTIOUS DISEASES.

Zymotic Diseases. During the year there were 122 deaths from the seven principal zymotic diseases, which are smallpox, measles, whooping-cough, diphtheria, scarlet fever, diarrhoea, and fever (including typhoid, enteric, and typhus). This is a death-rate of 1·52 per 1,000 of the population; it compares with a decennial rate for 1910-1919 of 2·08. The rate for 1919 was 1·03 and for 1918, 1·8. The number of deaths from zymotic diseases during the past 11 years is shown in table 10 (page 74).

The number of cases of infectious diseases notified during the year is given in table 2 (page 63). There was no notification of cholera, plague, typhus fever, relapsing or continued fever, or trench fever.

Scarlet Fever. Three hundred and sixty-nine cases were notified, being a rate of 4·6 per 1,000 of the estimated population, compared with 4·6 in 1919 and 4·7 in 1918. The previous year had ended with scarlet fever notifications well above the normal, there having been 107 notifications in the third quarter and 171 in the fourth quarter of 1919. The outbreak began to quieten down in the new year, and there were 129 notifications during the first quarter, 77 during the second quarter and 64 during the third quarter; there was a small rise again to 99 during the fourth quarter, but not large enough to make one think there was a question of a recurrence of the epidemic. The largest number of cases came from Linacre Ward, the ward incidence being Linacre 129, Derby 84, Knowsley 57, Stanley 43, Mersey 32, Orrell 24.

The disease continued to be relatively mild in type as contrasted with the experience of the year 1918 (which had a case mortality of 6·5 per cent.), and resulted in eleven deaths or a case-mortality of 3 per cent. as contrasted with 2·3 per cent. last year and 2·5 per cent. during the decennium 1910-1919. The schools with the largest number of cases were St. James' 28, Gray Street 24, Linacre 21, and St. Mary's 19. Enquiry into the source of infection gave much the same results as in previous years; only in a minority of 17 per cent. could the infection be traced, leaving the origin undetermined in 307 cases; there is little doubt that a part of this infection is spread by mild missed cases, the symptoms of which are so slight as to be overlooked by the parents. During the year three of these missed cases came to light in the course of investigations made into known cases.

Multiple Cases. In each of 41 houses two cases of scarlet fever occurred; in each of 13 houses there were three cases, and in each of three others four cases of scarlet fever occurred.

Return Cases. The causation of "return cases," in which discharge of a scarlet fever patient from the hospital is followed by the occurrence of a new case in the home, has been discussed in previous reports. During 1920 there were nine such infecting cases in Bootle, resulting in twelve new cases of scarlet fever, and taking all the hospital discharges (including those to Litherland and Formby) they were 10 or 3·8 per cent. of those discharged; this compares with 4·9 in 1919, 3·9 in 1918, nil in 1917, and 1·9 per cent. in 1916. The length of stay in hospital averaged 27 days and varied from 24 to 34 days in these cases, and the interval elapsing before the onset of the new case exceeded ten days in three instances; all were noted as being free from nasal or aural discharge when leaving the hospital.

Hospital Accommodation. Two hundred and fifty-six or 69 per cent. of the cases notified were treated in Linacre Hospital, with a case mortality rate of 3·5 per cent. as against the figure of 2·4 per cent. in the previous year.

Diphtheria. The number of cases notified—167—shows no decrease from the relatively high figure of 168 notifications during 1919 as contrasted with the average of 83 for the ten years ending 1919. The incidence was 2·10 per 1,000 of the estimated population; there were 39 cases in Stanley Ward and 32 in Linacre Ward. The case mortality was regrettably high, being 18·6 as compared with 9·5 in the previous year and was an advance even on the figure of 17·1 per cent. reached in 1918. One hundred and thirty-one cases or 78 per cent. of those notified were removed to hospital. An examination of the 31 fatal cases shows that 8 were treated at home and 23 in hospital; of the latter, six died within twelve hours of admission, it being reported that the first onset of symptoms had appeared the day before admission in two cases, three days before in one case, four days before in two cases, and four weeks before in another case. Five of the hospital fatal cases were complicated with broncho-pneumonia, two with scarlet fever, and one with measles.

Multiple Cases. Multiple cases of diphtheria, as in the previous year, accounted for a proportion of the notified cases, two cases having occurred in each of 10 houses, three in each of 2 houses, and four in each of 2 houses.

In the case of diphtheria patients nursed at home, antitoxin is supplied by the Authority, and during the year 20,000 units were so supplied to doctors for the use of patients.

Smallpox. Eight cases of smallpox were notified, resulting in two deaths. The first case was discovered on the 31st March in a scaler, aged 46, who was suffering from the haemorrhagic form of the disease; he died within a few hours of admission to the New Ferry Hospital of the Port Sanitary Authority. Following upon that, seven cases were notified or discovered, namely, his sister (who subsequently died), his son, his brother, and his nephew, together with a dock labourer who probably came into contact with the original case in the course of his work on the docks, and a girl in the same street who was a playmate of the children of the first patient; finally, the mother of this last girl contracted the disease. In all, five separate houses were infected. The contacts in these cases, numbering 380, were kept under daily surveillance by the Public Health staff, and vaccination or revaccination was pressed upon the contacts and other residents in the vicinity of the case; 483 vaccinations were performed, all, with the exception of five who were vaccinated by the Assistant Medical Officer of Health, receiving the attention of the Public Vaccinator. All eight patients were treated in the Port Sanitary Authority's Hospital, the longest duration of treatment being 56 days; the cost of hospital treatment amounted to £132.

According to information kindly supplied to me by the Clerk to the West Derby Union, 1,619 successful primary vaccinations and 271 successful revaccinations were performed; this represents a satisfactory increase over the previous year's figure of 975 and 91 respectively, and is probably to be ascribed to the smallpox outbreak, but it is regrettable that in a seaport town, where the risk of introduction of smallpox is ever present, the practice of vaccination should be consistently neglected between outbreaks of the disease.

Enteric Fever. There were four notifications of enteric fever. All were admitted to the Corporation Hospital, where the diagnosis was revised in two cases; in neither of the other cases was the source of infection traced. The practical disappearance of enteric from Bootle (there having been an average of only 4.6 cases during the last five years) can confidently be ascribed to the conversion from privy-middens to the water carriage system throughout the Borough, which was completed in 1910.

Measles. During 1920 measles caused 33 deaths compared with 12 in 1919 and an average of 26 during the 10 years ending 1919. The Bootle death-rate from this cause was 0·41 per 1,000 compared with 0·19 throughout England and Wales. The compulsory notification of measles ceased as from the 31st December, 1919, but a limited notification from parents, through school teachers, to the Health Department was resumed in August through powers obtained under the Bootle Corporation Act, 1920. The deaths resulted from a small outbreak which had commenced in the latter end of 1919 and was carried through into the first four months of the year. Twenty-eight deaths occurred in the first quarter and five in April. Seventeen cases of measles complicated by pneumonia were nursed by arrangement with the District Nursing Association; one of these died. Since April the district has been free of measles with the exception of a few isolated cases reported towards the end of the year.

The sanitary measures for the control of measles on the accepted lines of notification, isolation, disinfection and quarantining of contacts, are disappointing in as much as cases are infectious in their early catarrhal stage before the disease is recognised as measles, and Public Health activity is accordingly limited to such steps as will postpone the age of attack and hence diminish the case mortality rate, and to the provision of nursing assistance in cases where the serious lung complications supervene. There is still much to be done in educating the public up to the knowledge of the fact that measles and whooping-cough (so called minor infectious diseases) are responsible year by year for many preventable deaths.

Whooping-cough. Whooping-cough caused 19 deaths during 1920 compared with 2 during 1919, 25 in 1918 and 32 in 1917. The death-rate was 0·24 per 1,000 of the population compared with 0·11 throughout England and Wales.

Cerebro-Spinal Fever. Two notifications were received, one in a child of 2½ years, whose family had left the district, and the second in a boy of five years. In the latter case continued observation of the patient, who died five weeks later, led to a doubt of the accuracy of the diagnosis and to the belief that it was probably one of tubercular meningitis.

Acute Poliomyelitis. Two notifications were received, the first in a boy of two years who recovered without permanent paralysis or other disablement and the second in a boy of 3½ years who subsequently died.

Encephalitis Lethargica. One case of this disease was notified in a girl, aged 17, who died on the day of notification, having presented clinical signs of the disease during the preceding fortnight.

Erysipelas. Thirty-one notifications of this disease were received.

Influenza. Influenza was not present in epidemic form at any time during the year. Twenty-four deaths were ascribed to this disease and four cases of influenzal pneumonia were notified.

Pneumonia. Acute influenzal pneumonia and acute primary pneumonia continued notifiable and four cases of influenzal pneumonia and twenty-three of acute primary pneumonia were reported. Pneumonia caused 159 deaths or 2.0 per 1,000 of the population, compared with 2.2 in 1919, 3.14 in 1918 and 2.22 in 1917. Nine cases of pneumonia received the attention of the District Nursing Association and seven of these recovered.

Trench Fever, Malaria, Dysentery. No notification of trench fever was received; two cases of dysentery and five of malaria were notified in persons who had contracted the diseases abroad.

Diarrhoea. Deaths from this disease numbered 26 which is at a rate of 0.32 per 1,000 of the population as compared with 0.53 last year. Twenty-two of the deaths occurred in children under the age of two years, giving a rate per 1,000 births of 9.6 in Bootle, as compared with 8.3 throughout England and Wales.

Arrangements by which this disease is notifiable during the third quarter were continued, and 15 notifications were received as compared with 11 in 1919 and 65 in 1918. It seems probable that the drop in notifications and in deaths represents a real decrease in the incidence of the disease; the decrease cannot be wholly ascribed to the comparative mildness of the summer, but is partly due to the instruction in infant feeding given through the medium of the Infant Welfare Visitors and the Bootle Health Society; one point on which attention is concentrated in working class houses (especially in the warmer months of the year) being the protection of food from dust and flies.

Plague and Rat Destruction. No cases of plague occurred either in man or in rats during the year, but the measures previously instituted for encouraging rat destruction were continued. The part-time official rat

catcher is employed not only as such but as an advisory officer who can assist occupiers with hints as to the best way in which to carry out the responsibility laid on them by the Rats and Mice (Destruction) Act, 1920. On the suggestion of the Ministry of Agriculture a National Rat Week arranged for November 1st to 6th was observed in Bootle; posters and newspaper advertisements reminded the public of their duties in the matter and, as in previous years, the sum of sixpence per rat brought in for destruction was paid. The number of rats brought in by private individuals during the week was 93 and by the rat catcher 149, making a total of 242 for the week, as compared with 86 during the previous rat week. During the year, in addition to his advisory work, the rat catcher brought in 2,172 rats for destruction, in addition to laying a number of poison baits.

V. SANITARY ADMINISTRATION.

Hospital Accommodation. Mention was made in the last Annual Report of the new pavilion for the accommodation of an additional 28 patients suffering from pulmonary tuberculosis; various reasons have delayed its completion, and at the time of writing it is expected to be ready for use in July. It will not, however, be possible to take it immediately in to full use, on account of the lack of accommodation for the additional nursing and domestic staff who will be required. The provision of this necessary accommodation has received attention from early in 1920, but difficulties in obtaining a suitable hut for conversion and other reasons have so delayed the commencing of the work that now, in April, a start with the erection of the building has not yet been made.

The following table gives a summary of the cases dealt with during 1920; in appendix 20 (page 83) will be found full particulars.

		In hospital 1st January.	Admitted.	Died.	In hospital on 31st December.	Case Mortality.
Scarlet Fever ...	...	58	315	12	38	3·6 %
Diphtheria ...	...	11	153	27	4	16·9 %
Enteric Fever ...	...	—	5	1	—	20·0 %
Phthisis ...	...	15	83	10	17	12·3 %
Other Diseases ...	...	1	85	4	1	4·7 %
Total ...	...	85	641	54	60	8·1 %

Excluding cases of phthisis, the case mortality was 7·5 per cent.

Eighteen of the scarlet fever cases, 1 of phthisis, 1 enteric fever, and 53 of the diphtheria cases were re-diagnosed before they left the Hospital. The cases are classified in the table as finally diagnosed at death or discharge. Bootle cases admitted numbered 540, Litherland 59, Formby 24, Seamen's National Insurance Society 14, and Lancashire County Council 4. The total number of patients treated during 1920 was 726, compared with 681 in 1919, 630 in 1918, and 444 in 1917. Deaths totalled 54; Bootle 42, Litherland 10, and Lancashire County Council 2.

The net cost of the hospital for 1919-1920 was £4,042. The approximate expenditure during 1920-1921 was £5,402; the estimated expenditure during 1921-1922 is £5,461.

Bacteriological Laboratory Work. The following are particulars of the examinations carried out at the Linacre Hospital Laboratory, Tuberculosis Dispensary and Maghull Sanatorium:—

Examinations required.	Positive Result.	Negative Result.	No. of Specimens examined.
Swabs for Diphtheria	249	780	1029
Sputa for Tubercle Bacilli	339	437	776
Hairs for Ringworm	16	12	28
Others	1	2	3
	605	1231	1836

In addition, 28 samples of milk, 7 specimens of blood for Widal reaction, 6 specimens of excreta for parasites, 11 shaving brushes for anthrax, 2 specimens of cerebro-spinal fluid, and 337 specimens for venereal disease were examined bacteriologically by Professor Beattie at the Liverpool University.

VI. TUBERCULOSIS.

Deaths. The number of deaths caused by tuberculosis during 1920 was 128 or 1 death in every 9, giving a death-rate from this cause of 1.6 per 1,000 of the population as compared with 1.4 in 1919 and 1.99 in 1918; it was 1.86 for the 10 years ended 1919 and 1.79 for the 10 years ended 1909.

PULMONARY TUBERCULOSIS.

Incidence. One hundred and sixty-eight persons were notified as suffering from pulmonary tuberculosis, of whom 31 were ex-service men. Their age and sex distribution will be found in appendix 12 (page 75). The numbers notified in the three preceding years were 150, 176 and 205 respectively. In the case of 15, the first intimation was obtained from the death returns, while in 23 other cases notification was made at intervals less than three months before death. This experience is in close correspondence with that of previous years, and, although in a few instances the disease has run an acute course, in others it means that the patient has suspected the nature of his complaint and has hesitated to get his fears confirmed by seeking medical advice; the result of such delay is of course to handicap still further the treatment of a disease which, at the best, presents many difficulties even when taken in its early stages.

Deaths. During the year 94 deaths were certified to be due to pulmonary tuberculosis, representing a rate of 1.17 per 1,000 of the population as compared with 0.99 per 1,000 in the previous year. This latter was the lowest rate ever recorded in Bootle, while the maximum had been reached during 1916 when the figure stood at 1.95 per 1,000.

Scheme for Prevention and Treatment. The measures taken by the Council to deal with the problem of tuberculosis provide for the general administration of the scheme by the Medical Officer of Health, aided by a Tuberculosis Officer resident in Linacre Hospital who devotes his whole time to the work except for the care of the infectious disease wards. The scheme has been carried on on the same lines as in previous years in spite of difficulty caused through changes occurring in the medical personnel. In the interval between June and November, the clinical work was in the hands of the Medical Officer of Health, the Assistant School Medical Officer and a local practitioner, but in November Dr. J. P. Broom was appointed as a whole-time officer to carry on the work of Dr. H. J. Milligan, Tuberculosis Officer, who had taken up another appointment in June. The scheme is comprehensive and provides for a dispensary as a clearing house, sanatorium for early cases at Maghull, hospital accommodation for later cases at Linacre, advice and supervision by tuberculosis visitors, the provision of dental treatment, extra nourishment and domiciliary nursing.

Tuberculosis Visitors. Two whole-time Tuberculosis Visitors share the duties of attendance at the Dispensary and of visiting the homes of notified and suspected cases, with a view to improving the hygienic conditions under which the patients live and of assisting in the carrying out of medical instructions; an important part of their work lies in the persuasion which they bring to bear on relatives who have been in contact with the sufferer to present themselves for expert examination irrespective of their own feelings of health. At the beginning of the year 975 persons suffering from, or suspected to be suffering from, pulmonary tuberculosis, resided in Bootle; during the year 94 cases died and 213 new cases were added, making a total of 1,184 persons on the visitors' lists during the year, of whom 1,117 remained at the end of December; at the end of the year 48 cases were in institutions and 48 had left the district or were not traced. 5,071 visits were paid to the homes of patients, and in 235 cases disinfection was carried out following the death of patients or their removal to sanatorium or hospital. Every effort was made by the visitors to make their calls helpful to the comfort of the patient and a stimulus to care exercised in preventing infection of others in the household.

Tuberculosis Dispensary. The Dispensary is the central element in a well administered scheme and serves as a clearing house from which some cases are transferred to sanatorium, others to hospital, and others to their own medical attendant for domiciliary treatment, while a certain proportion remain in attendance at the Clinics held five times weekly and receive necessary treatment therefrom. During the year 213 new patients were examined at the Dispensary, of whom 35 were sent by private practitioners for an opinion. Of these new cases 115 were diagnosed as suffering from tuberculosis; 42 were considered to be definitely non-tuberculous, while 56 were kept under observation with a view to successive examinations establishing a diagnosis. One hundred and three of the new cases were insured persons and 110 were uninsured. The total attendances at the Dispensary during the year numbered 8,132, as compared with 7,468 during 1919; 184 specimens of sputum were examined, giving a positive result in 65 cases.

Stress is laid on the importance of securing a thorough examination of all contacts of a notified case of pulmonary tuberculosis. Recent writings have suggested that a successful dispensary should be examining from two to three contacts in respect of each notification received, and an endeavour

is being made to work up to this desirable standard with the object of detecting cases at a very much earlier date than would otherwise be the case. During the year 149 contacts were so examined, with the result that 7 were pronounced to be definitely suffering from tuberculosis and 48 others were in such a condition as to require further observation before a decisive opinion could be given. This figure compares favourably with the 133 examined during 1919, and would have been greater but for the several changes in the medical staff of the department.

Maghull Sanatorium. Early cases, selected after examination at the Dispensary, are sent to the Sanatorium of 20 beds at Maghull, and during the year 88 patients were so admitted, with an average length of stay of 89 days. The Medical Officer of Health is the Medical Superintendent of the Institution, but the patients are under the care of Dr. A. Hendry, who visits the Sanatorium daily. A few minor improvements have been effected in the lighting and the treatment of the floors of the wards, and the question of embarking on the large extension scheme referred to in the last Annual Report, by which 60 beds would be provided for children predisposed to, or suffering from, tuberculosis, received protracted consideration. Financial considerations, however, resulted in the indefinite postponing of the scheme, and in place of it a smaller programme considered to embody the minimum requirements for putting the institution on a satisfactory footing has now been approved by the Council. It provides for the erection of a laundry, for three additional bedrooms for the nursing and domestic staff, and for a sanitary annexe to the wards containing extra bathroom and closet accommodation together with a central boiler designed to overcome the great difficulty caused by the hardness of the water supply.

In the last Annual Report a useful table was presented indicating the results of treatment of all patients who had passed through the sanatorium since its opening in May, 1914. This table, given below, has been brought up to date, and shows that of 249 cases discharged before September, 1919, 123 were known to be at work in December, 1920. If the enquiry is limited to those cases, obviously less favourable, in which Tubercle Bacilli were found in the sputum, the figures are that of 131 who had passed through the institution 49 were known to be working in December, 1920.

TABLE I.

Condition at December, 1920, of Bootle patients treated since the opening of the Sanatorium in May, 1914, and discharged before September, 1919.

Condition on Admission.			Condition at December, 1920.				
			Total.	At Work.	Unable to work.	Dead.	Left District.
Stage I.	Sputum +	...	56	29	3	20	4
Stage I.	Sputum -	..	76	49	3	11	13
Stage II.	Sputum +	...	62	17	3	33	9
Stage II.	Sputum -	...	39	25	3	5	6
Stage III.	Sputum +	...	13	3	1	7	2
Stage III.	Sputum -	...	3	0	0	2	1
Totals			249	123	13	78	35

A similar table is given in respect of the 54 patients treated during the year ending September, 1920. There it will be found that of the 54 cases discharged, 27 were known to be working in December, 1920.

TABLE II.

Condition on Admission.			Condition at December, 1920.				
			Total.	At Work.	Unable to work.	Dead.	Left District.
Stage I.	Sputum +	...	11	6	3	0	2
Stage I.	Sputum -	..	19	15	0	1	3
Stage II.	Sputum +	...	16	4	9	2	1
Stage II.	Sputum -	...	2	1	1	0	0
Stage III.	Sputum +	..	6	1	2	3	0
Stage III.	Sputum -	...	0	0	0	0	0
Totals			54	27	15	6	6

The results then, are not so unfavourable as pessimists would have us believe. They are, however, not good (84 of the 303 patients treated between 1914 and 1920 are already dead) and the reasons for the comparative failure are not far to seek; in the first place there is the medical difficulty of getting hold of the early case and of then convincing him of the need for special prolonged treatment; and secondly, there is the economic difficulty that even a "cured" consumptive has not a 100 per cent. efficiency, and the attempt to place on the labour market a man whose working capacity is 60 per cent. or 70 per cent. of the normal, and to ask him to maintain himself and his family on the proceeds of this diminished energy, is to invite disaster. Attempts to find a solution of this latter difficulty have been made at industrial colonies established in Cambridgeshire and elsewhere, by which the ex-patient continues at his old trade under decent hygienic conditions (the 'light job in the country' idea was early abandoned as farm work is neither light nor unskilled), and in the case of the ex-service man has his wages augmented by his State pension. This leaves untouched, however, the case of the tuberculous civilian: the performing of even a few hours' work weekly disqualifies him for receipt of sickness benefit, and there is no half-way house for him between a life of idleness as long as this benefit lasts, and plunging straight away into the physical and mental stress of full employment. It is for consideration whether a scheme of wage-augmentation similar to that adopted in the Workshops for the Blind will not have to be framed—the augmentation possibly to be temporary only, and to be withdrawn when a favourable re-start has been made—and whether such payments would not justify themselves financially if they were given in cases where the patient and his family took up their residence in an approved industrial colony or village settlement; for society would gain by the removal from crowded workshops and places of entertainment of sources of infection, and by the transplantation of the family contacts to surroundings which would build up and maintain their resistance to disease.

Linacre Hospital Phthisis Pavilion. The Linacre Hospital has an open-air ward of 16 beds and during the year 83 cases were admitted to it, the average length of stay being 60 days. The new pavilion of 28 beds referred to in the last Annual Report is now almost ready for occupation, and as soon as accommodation is provided for the additional nursing and domestic staff, will be taken into use. The existing accommodation has been of undoubted value; from the nature of the cases admitted curative results are not expected, but the stay in hospital is beneficial alike to the patient in the nursing, feeding and hygienic attention which he receives, and to

the community in the removal from it of a source of massive infection. The following table shows the results obtained in 345 patients who had passed through the institution up to September, 1919, and shows that 74 out of 345 were working at the end of December, 1920.

TABLE III.

Condition at December, 1920, of patients discharged before September, 1919.

Condition on Admission.			Condition at December, 1920.				
			Total.	At work.	Unable to work.	Dead.	Left District.
Stage I.	Sputum +	..	24	1	0	21	2
Stage I.	Sputum -	..	42	28	2	8	4
Stage II.	Sputum +	..	109	7	11	82	9
Stage II.	Sputum -	...	53	25	6	19	3
Stage III.	Sputum +	..	94	8	1	80	5
Stage III.	Sputum -	...	23	5	2	10	6
Totals	...	...	345	74	22	220	29

TABLE IV.

The following table gives similar information regarding the 71 patients treated during the year ended September, 1920.

Condition on Admission.			Condition at December, 1920.				
			Total.	At work.	Unable to work.	Dead.	Left District.
Stage I.	Sputum +	...	2	0	1	1	0
Stage I.	Sputum -	...	8	5	1	2	0
Stage II.	Sputum +	...	23	5	6	12	0
Stage II.	Sputum -	...	5	4	0	1	0
Stage III.	Sputum +	...	28	1	0	25	2
Stage III.	Sputum -	...	5	4	0	0	1
Totals	...	...	71	19	8	41	3

Domiciliary Treatment. A small number of cases are treated under the care of their own medical attendants at home. They are mainly cases unwilling to accept a Hospital bed and too ill to attend the Dispensary for treatment.

Dental Treatment. Late in the year arrangements were completed by which dental treatment was provided for tubercular cases. The scheme, sanctioned by the Council, required the payment by the patient of a prescribed scale of charges for fillings and provision of dentures. This was early found to be a stumbling block, and although five half-days were devoted to treatment by the dentist little was done, and the work came to a sudden stop. In January, however, sanction was given by the Council to the reduction or remission of the charges in approved cases, and it is hoped with this modification to get the scheme into being once again.

Special Methods of Diagnosis and Treatment. There are no facilities at the Dispensary for carrying out special diagnostic tests; cases for X-ray diagnosis have in the past been referred to the Bootle Borough Hospital. The use of tuberculin has been slowly diminishing and there are now only a few cases under treatment by it; one case of lupus is, however, deriving considerable benefit from this form of treatment.

Nursing and Extra Nourishment. Extra nourishment was supplied to cases where it was considered advisable, and some 19 cases were recommended during the year; in most of the cases the recommendation was renewed at the expiration of three months. Cases which are found by the Tuberculosis Visitors to require home nursing are referred to the District Nursing Association, and the necessary help is then given.

Ex-Service Patients. Thirty-one ex-service patients came under treatment in 1920; 2 died, 6 received dispensary treatment, and 23 were admitted to institutions. For the 12 months ended 31st March, 1921, 770 visits were paid to the homes of the 128 ex-service patients, who are, or were, under supervision.

General. The above few pages then, have reviewed what is being done specifically to reduce the scourge of pulmonary tuberculosis in Bootle. The measures aim to give facilities for the treatment of existing cases, to discover unsuspected cases, and to minimise the risk of infected sputum producing new cases: the importance of tubercle-free milk supply is else-

where alluded to: the rest of this report outlines the general measures being taken to improve the public health: and now one wishes to emphasise the large part which common-sense hygiene must be given in the minds and habits of the public before further advance is possible. "The simple, rational, open-air life is the best protection against tuberculosis. Cleanliness, fresh air, sunlight, good food, exercise, recreation, a healthy occupation, and moderation in all things constitute the essentials of healthy living and anti-tuberculosis training" (Hyslop Thomson). It must be admitted that for large masses of the community these essentials are simply not obtained, and the preventive medicine of the future has, in this respect, a double educational task to perform—firstly, to convince the public that they lack these things at present, and secondly, that they are both necessary and obtainable.

NON-PULMONARY TUBERCULOSIS.

During the year 48 cases of non-pulmonary tuberculosis were notified, namely—16 glands, 10 bones and joints, 11 abdominal, 6 meningitis and 5 spine; and there were 34 deaths. As provision for the treatment of non-pulmonary tuberculosis the Council maintains by agreement six beds at the Leasowe Hospital for Children; these beds are always full. Only six cases were able to be admitted during the year and there is always a waiting list.

The treatment of non-pulmonary tuberculosis, especially when it affects the bones and joints, is tedious and prolonged, although it meets with a high degree of success. During the year the question of additional provision for treatment of non-pulmonary tuberculosis was discussed by the Council and several conferences were held with neighbouring Local Authorities, at which the possibility of an enlargement of the Leasowe Hospital by, say, 100 beds at the cost of the Local Authorities concerned, was discussed. Under this scheme it was proposed that Bootle should provide and maintain 10 additional beds, some of which would be available for treatment of adult cases; a rough estimate of the cost of this provision to Bootle worked out at £9,000, and as it was felt inopportune to incur additional capital expense at the present time the scheme is at present in abeyance as far as Bootle is concerned.

Cost. The net cost of the Anti-Tuberculosis Scheme during the financial year 1919-1920 was £2,098. The approximate net expenditure for 1920-1921 was £3,601, and the estimated expenditure during 1921-1922 £5,222.

VII. VENEREAL DISEASES.

Only four deaths were registered as due to venereal diseases, all of them being in infants under one year of age; further two deaths were certified as general paralysis of the insane. Neither of these figures gives a real statement of the mortality due to this cause.

The Council's scheme for diagnosis and treatment of venereal diseases through the treatment centre at the Bootle Borough Hospital was continued as in previous years, with the addition that in December an Irrigation Department was opened, giving facilities for treatment of gonorrhoea between clinic days and for early preventive treatment if such were asked for. This irrigation centre has not yet been used for the latter purpose, but the attendances thereat of cases under medical treatment now (in April, 1921) average twenty weekly.

The treatment centre has been open for women and children only at noon each Monday and Tuesday and at 5 p.m. each Friday; for men only at 5 p.m. each Monday, noon on Thursday and 5-30 p.m. each Friday. Appendix 16 on page 78 gives the Annual Statistical Report from the Medical Officer of the Centre. It shows 159 persons under treatment on the 1st January, 1921, as contrasted with 203 on the 1st January, 1920, and a fall of 17 per cent. in the number of new cases, the figures being 495, as contrasted with 597 during 1919. The total attendances made during the year remain at the previous year's level and number 5,099. In-patient days total 309, as contrasted with 502 during the previous year. During 1920, 217 cases were discharged after completion of treatment and observation, as contrasted with 177 during 1919. The unsatisfactory feature of persons ceasing attendance before completing the course of treatment, or having completed a course of treatment ceasing attendance before final tests to cure, still exists, and 230 (or 1 in every 3 cases) fall into these categories; and the more important sub-division of persons ceasing attendance before completing their course of treatment shows a big rise from 45 to 145.

This important matter is a strong argument in favour of the limited notification of venereal disease which has been urged; this limitation recognises the fact that notification of all cases might possibly defeat the object in view and by causing concealment of the disease lead to its further spread, and requires that notification should be made by the treating doctor

only when the patient ceases attendance before completion of treatment or before the making of final tests as to cure. With such a limited notification in force, coupled with a statutory obligation for sufferers to obtain treatment, it would be possible for the Health Department to follow up defaulters without prejudicing the position of those persons who appreciate the duty they owe to society of persevering with treatment.

The decrease in new cases reported for treatment holds both as regards gonorrhœa and syphilis, but the detailed figures show 287 males under treatment for gonorrhœa as contrasted with 6 only in females, suggesting a disparity which does not, in fact, exist. It is an unfortunate fact that women suffering from gonorrhœa do not suffer from the obvious symptoms which make the other sex seek treatment, and it is to this that the dissimilar figures may be ascribed.

Bootle residents account for 50 per cent. of the cases under treatment at the Bootle Hospital Centre and for 60 per cent. of the attendances; the Authorities contributing the next largest number of cases being Lancashire County and Liverpool, which together make up a further 35 per cent.

Necessary publicity has been given and educational work has been carried on throughout the year. Under the auspices of the Merseyside Boroughs Branch of the National Council for Combating Venereal Diseases, an exhibition of the film, "Damaged Goods," was given in the Town Hall to a crowded assembly, and the audience was addressed by a medical lecturer and the medical officer of health.

Laboratory Work. The number of bacteriological specimens examined in respect of venereal diseases was 355, compared with 272 during 1919. The majority of these were examined by Professor Beattie, of the University of Liverpool. Eighteen were examined for the presence of gonococci in the laboratory at Linacre Hospital.

Salvarsan Substitutes. Salvarsan substitutes to the number of 1,849 doses were supplied from the Town Hall; 1,708 of these were used at the Treatment Centre and 141 by three practitioners who were qualified to receive free supplies.

Venereal Diseases Act. There were no prosecutions during the year.

Cost. The total approximate expenditure on the prevention, diagnosis, and treatment of venereal diseases during the financial year 1920-21 was £2,380; and it is estimated that during the current financial year the cost will be £2,078. Seventy-five per cent. of these sums will be recoverable from the Ministry of Health.

VIII.—MATERNITY AND CHILD WELFARE.

MATERNAL WELFARE.

Midwives Acts, 1902-1918. The number of midwives on the local roll is 24, as against 21 in the preceding year; 7 others, resident outside the district, have given notices of their intention to practice in the Borough; all are trained except one. During 1920 midwives attended 1,961 births, or 85·7 per cent. of all those occurring in the town, compared with 94 per cent. in 1919 and 96 per cent. in 1918. During the year there were 328 births which were attended by doctors alone.

Regulations of the Central Midwives Board require medical help to be sought by the midwife in a number of specified conditions, and 242 records of sending for medical help were received; this represents 12·3 per cent. of the births attended by midwives, as compared with 14 per cent. during 1919. Twelve of the calls were on account of abnormalities during pregnancy, 171 during labour, 23 during the puerperal period, and 36 for conditions affecting the child.

Under the 1918 Act the Local Supervising Authority is responsible for the payment of fees of doctors called in by midwives; as the Authority has the right of recovering this fee from the patient it has been arranged that the doctors send their accounts to the Corporation only when they are unable to recover the fees themselves. Under this arrangement 43 accounts, amounting to £85 9s., were received. As a result of investigations made by the Infant Welfare Visitors, the Maternity and Child Welfare Committee considered that the patients should be asked to contribute £41 12s. of this amount, and in 10 cases only was the full fee paid by the Corporation.

The supervision of the midwives until December rested with three of the Infant Welfare Visitors who hold the certificate of the Central Midwives

Board; on the suggestion of the Ministry of Health this work was then transferred to Dr. Kate M. Cowe, the Assistant Medical Officer of Health, who will, however, receive assistance from one of the qualified Infant Welfare Visitors.

The practice of one midwife was investigated by the Medical Officer of Health on the 30th May in consequence of failure to forward the record of sending for medical help at the birth of a child and subsequently at the illness of the mother; the midwife was censured.

Puerperal Mortality. Two cases of puerperal fever were notified; both occurred in the practice of midwives who had received medical help at the time of birth; one case died and the other recovered. Six other cases of death during pregnancy or parturition occurred, the causes of death being registered respectively as albuminuria of pregnancy, parturition with contracted pelvis, accidental hæmorrhage at child-birth, phlegmasia alba dolens, anæmia following labour, and hæmorrhage from placenta prævia.

The seven deaths thus resulting from or in connection with child-birth give a rate of 1 for every 327 births, compared with 1 for every 273 in 1919 and 1 for every 362 in 1918.

Milk (Mothers and Children) Order, 1918. Under this Order the Corporation are empowered to supply free milk to necessitous nursing or expectant mothers and to children under the age of five years in necessitous cases, in which the Medical Officer certifies that such provision is necessary. An income limit has been fixed by the Health Committee for guidance in recommending these cases, and the distress resulting from unemployment during the last six months of the year is reflected in the largely increased number of cases falling within the prescribed limits. The value of the milk supplied was £249 10s. 10d., of which £155 0s. 3d. was given in the form of dried milk on the advice of the Medical Officer of one or other of the Infant Welfare Clinics. The number of families assisted was 185, compared with 106 families in 1919 at a cost of £137.

Home Helps. A scheme for the provision of home helps was inaugurated in 1919; two women received a little elementary training in a children's home, and were engaged as permanent home helps to receive 3/- a day and food when working for the Department, and 1/6 a day without food when not working. Several other women were engaged on a tem-

porary basis, to be paid only when actually out at cases. Early in 1921 one of the permanent home helps resigned, and the second died. The scheme is now carried on with a number of women who receive a wage of 4/- per working day. The work expected of these home helps is that ordinarily falling to the housewife, and which she is unable to do for the two or three weeks following the birth of the child; it includes the housework and housekeeping, care of the children, and a small amount of washing; this question of household washing has been the source of a few misunderstandings, but on the whole, the scheme works well, fills an obvious gap in the welfare-promoting activities of the Council, and is much appreciated by the women who receive the assistance. The financial arrangements are that the Corporation pay the home helps' wages and receive from the family assisted such a sum as is decided upon after consideration of the family income and out-goings. During the year 28 cases have been attended by the home helps, the length of stay being on the average 28 days, but extending in case of necessity to 15 weeks in one case. The patients' contributions amounted to £74 11s. 8d. out of a total wages bill of £131 15s.

ANTE-NATAL WELFARE.

Home Visiting of Expectant Mothers. The four Infant Welfare Visitors devote a portion of their time to advising and helping expectant mothers who are brought to their notice. During the year 495 such cases received 802 visits.

Ante-Natal Clinics. This home visitation is co-ordinated with the work of the Ante-Natal Clinic which is held weekly at the School Medical Offices. During the year 180 new cases attended, as contrasted with 196 in the preceding year, and 781 attendances in all were made. The detailed account of the work of the Clinic, which is under the care of Dr. R. A. Hendry, is given in Appendix 19 on pages 81 and 82. Ninety-three of the new cases were referred to this Clinic by midwives, 42 by the Infant Welfare Visitors, and 5 by doctors; in addition 40 expectant mothers attended as the result of outside recommendations.

It will be noted that in spite of the undoubted good work done at the Clinic its sphere of influence is not extending in anything like the proportions obtained with the Infant Consultations. It is not intended that such a clinic should be the equivalent of a hospital out-patient department, in

which direct treatment for the minor inconveniences of pregnancy would be given, but it is seriously asserted that, if a reduction is to be made in the number of still-births and the number of infantile deaths during the first month after birth, which have both remained almost stationary for the last twenty years, this work must be greatly developed, and all women expecting their first baby and women who have had previous miscarriages or difficult labours should receive expert examination and advice.

Accordingly the Bootle Health Society was urged to establish a second Ante-Natal Clinic in another part of the town, and through the kindness of the Education Committee the use of a portion of the premises at the Junior Technical School, Marsh Lane, was obtained for this purpose in February, 1921, and an encouraging start has been made with Dr. Cowe as Medical Officer of the new Clinic.

Maternity Home. Consideration was first given in the middle of 1917 to the inadequate accommodation for maternity cases in the district, when the suggestion of a joint scheme with Liverpool was under discussion for several months. This scheme was not proceeded with, and the conversion of a house in the ownership of the Local Authority was then carefully gone into. Difficulty in obtaining vacant possession of the premises led later to search for other houses, which for one reason or another were successively found unsuitable. The need for accommodation remained at least as pressing, and the search was continued, with the result that in November, 1920, the short lease of a house in Balliol Road, in the ownership of the Education Authority and not immediately required by them, was negotiated. The premises were considered to afford very suitable accommodation for ten maternity beds, together with quarters for the necessary nursing and domestic staff. Details of the scheme were carefully gone into and in March, 1921, the Council approved of the use of this house and decided to make application for the necessary loan for its furnishing and equipment; the matter accordingly now rests with the Ministry of Health.

The case for a maternity home has several aspects. In the first place, a consideration of the overcrowding in the town establishes a definite need on the score of decency—the actual conditions in which the 191 confinements occurring between the 4th August and 17th September took place were investigated, and 13 cases were found where the family accommodation consisted of one room for all purposes: 13 cases where, if a separate

room had been allotted to the mother with the baby and the attendant for the lying-in period, the remaining members of the family would have numbered three to four per room; and 14 cases where they would have numbered four or more per room; the births investigated constituted one-tenth of the number occurring annually in Bootle, and a simple multiplication sum will give a rough estimate of the need under this head. Secondly, there is an undetermined number of cases in which institutional treatment is necessary on account of some medical or obstetrical difficulty. Thirdly, the number of still-births last year was 77, and there were 82 deaths of infants under four weeks of age; this loss of life is, so far, not affected by any of the activities forming a part of the existing welfare scheme, and allowing for the increase in the population it stands at the same figure now as it did twenty years ago—in striking contrast to the large reduction in the mortality of infants between the ages of one and twelve months, which has been brought about by other elements in the municipal scheme. The establishment of the maternity home proposed in Bootle would allow for the conduction annually of 180 or 200 confinements under satisfactory conditions, and would mean the starting of infant feeding and care on right lines in a similar number of cases; this would mean that very nearly all the babies would leave the home breast fed with a probable reduction of the neo-natal mortality in this group at least.

INFANT WELFARE.

Notification of Births Acts The number of births notified under the Act was 2,079 or 90.8 per cent. of those registered; 1,932 notifications were received from midwives, 100 from doctors and 2 from parents. Of the children born in the town 92 per cent. were visited by the Infant Welfare Visitors, the remainder of births occurring in families where it was considered that suitable advice would be obtained from other sources. A summary of the work of the four Infant Welfare Visitors is given in appendix 18 on page 80. The visiting scheme to which they work is the giving of advice to mothers in their own homes shortly after the birth of the child, and at the end of the first, third, sixth, ninth, and twelfth months; further for three similar visits during the second year, and for two subsequent visits annually until school age is reached. Although this is the outline of the scheme, no rigid adhesion is advisable, and a suitable discretion is exercised; altogether last year 19,103 visits were paid to

infants and young children. One does not claim that in every case the visit is well timed and is acceptable to the mother; but it must be admitted that knowledge as to feeding, clothing, and general care of the infant does not come to the average mother by instinct, and that this is realised by the vast majority of women; accordingly it is more common for an Infant Welfare Visitor to be asked why she has not been to see the baby lately than for complaint to be made of her interference in the home.

Births Registered. The number of births registered was 2,289, of which 88 were illegitimate. Stillbirths numbered 77, of which 46 were attended by midwives only, 8 by doctors only, and 23 by midwives assisting doctors.

Still-births. In view of the importance of this question of loss of life at birth, full investigation was made and particulars were obtained in respect of 69 of the stillbirths. Apparently in 52 of these the child had died before labour, and in 17 during labour owing to some obstruction or malpresentation. Forty-one of the stillbirths occurred during the ninth month and fourteen during the eighth month. Enquiry was made into the cause of the stillbirth as alleged by the parents, and 32 of the foetuses were obtained and forwarded for pathological examination. The results of this enquiry are to be incorporated in a research being carried out nationally under the auspices of the Medical Research Council.

Infant Deaths. There were 223 deaths of infants below the age of twelve months which, expressed as a rate per 1,000 births, gives a figure of 97, compared with 121 in the decennium 1910-1919. With last year (rate 96) as an exception it is the lowest ever recorded in the town, and as will be seen from reference to the table below it continues a gratifying improvement which has been taking place during the last 30 years.

This reduction may be better realised when it is pointed out that a continuance since 1900 of the infant mortality rate for the decennium 1891-1900 would have resulted in the loss up to the end of 1920 of 2,012 additional children in Bootle, and the capital value of these lives saved should be placed to the credit side of the account whenever the cost of this section of public health work is considered.

BOOTLE INFANTILE MORTALITY RATES SINCE 1891.

Year.	Deaths per 1 000 births.	Year.	Deaths per 1,000 births.	Year.	Deaths per 1,000 births.
1891	183	1901	183	1911	145
1892	157	1902	154	1912	108
1893	197	1903	161	1913	145
1894	157	1904	180	1914	123
1895	183	1905	154	1915	144
1896	184	1906	143	1916	109
1897	199	1907	123	1917	99
1898	185	1908	143	1918	116
1899	186	1909	118	1919	96
1900	204	1910	123	1920	97
Decennial Average =183		Decennial Average =148		Decennial Average =118	

Although this reduction reflects great credit on the municipal and voluntary organisations which are dealing with this matter it must be pointed out that the corresponding rate for the 96 great towns of England and Wales for last year was 85 per 1,000, and both this and our own figure are far in excess of the desirable and possible infantile mortality rate. Already the corresponding figure for all classes in New Zealand is round about 50, whilst various sections of the community in England can show rates which are an improvement even on this.

This latter point is illustrated in the experience of Bootle in a consideration of the ward incidence of Infantile Mortality Rates, although the ward boundaries do not closely correspond with the social classification of the community. This year Knowsley Ward had the highest rate, viz., 127, and Mersey the second highest, 122. The lowest rates were Stanley 71, and Derby 77. The decennial rates shown below give a clear indication as to the location of the forces inimical to child life.

WARD INFANT MORTALITY RATES.

Ward.	Decennial Rate, 1910-1919.					1920.
Mersey	154	...	...	122
Knowsley	148	...	...	127
Stanley	109	...	...	71
Linacre	109	...	...	95
Derby	101	...	...	77
Orrell	99	...	...	90

The rate of infantile mortality amongst legitimate infants was 97 per 1,000 births, and among the illegitimates was 114.

The more important of the causes of death which are given in detail in appendix 4 on page 65 were bronchitis and pneumonia 66, prematurity 45, atrophy, debility and marasmus 24, and diarrhoea 17.

Neo-natal Mortality. Forty-one children died before they were a week old, and a total of 82, or 37 per cent., of all the deaths under one year occurred in children under the age of one month. This is a neo-natal mortality rate of 36 per 1,000 births, compared with 36 in 1919 and 31 in 1918.

The table below illustrates this neo-natal mortality rate in Bootle during the previous fifteen years. It will be seen that very little reduction has been effected during this period in the deaths of children under the age of four weeks in marked contrast with the very great reduction obtained in the deaths of children between the ages of one and twelve months.

DEATH-RATES PER 1,000 BIRTHS, OF INFANTS UNDER FOUR WEEKS.

Year.	Deaths per 1,000 births.	Year.	Deaths per 1,000 births.	Year.	Deaths per 1,000 births.
1905	41.4	1910	43.2	1915	31.7
1906	37.8	1911	49.1	1916	29.4
1907	36.9	1912	40.4	1917	29.4
1908	37.2	1913	40.6	1918	31.5
1909	30.5	1914	34.4	1919	35.5
Quinquennial Average = 36.7		Quinquennial Average = 41.5		Quinquennial Average = 31.5	

Ophthalmia Neonatorum. Forty-nine cases were notified during the year compared with 40 in 1919 and 33 in 1918. The rates per 1,000 births have been 21·4 in 1920, 20·9 in 1919, and 18·2 in 1918; some of these cases are the result of infection, during birth, of the child's eyes with venereal disease derived from the mother. Twenty-two cases were treated under the supervision of private medical practitioners, in 25 the discharge was so slight that no medical treatment was necessary, and 2 received attention at St. Paul's Eye Hospital, Liverpool. In 43 of the cases the District Nursing Association provided a nurse for treatment of the child's eyes in the home, paying 854 visits. One child died, one lost the sight of one eye, and the remaining cases recovered without permanent injury to sight.

Health Visiting Staff. Four Infant Welfare Visitors were engaged throughout the year in the work of encouraging mother-craft and general domestic hygiene by visits to the homes and by assistance at the Welfare Clinics. The statistical presentation of their work is given in appendix 18 on page 80. There it will be seen 22,220 visits were paid; that infants under the age of twelve months received 10,159 visits; and that special visits were paid to cases of ophthalmia neonatorum, diarrhoea, and measles; but although these statistics are indispensable the real value of the visiting staff must be estimated rather by the number of cases in which they have maintained breast feeding or in default have demonstrated the necessity of cleanliness and care in the preparation of artificial feeds, have advised as to the kind of clothing required to prevent chest troubles, and have secured appreciation of the value of open-air and strict cleanliness for the baby; and one visit, or a series of visits to one house, in which such results have been obtained is worth an infinite number of visits which have been devoted merely to completing the schedule of information which is required for office purposes.

At the present time each visitor spends on an average two or three half-days weekly in the clinics attended by the mothers on her district; this has the double advantage of keeping her in touch with the doctor's directions in individual cases and of relieving her of the strain of constant home visiting.

Infant Welfare Clinics. These Infant Consultations were established by a voluntary agency, the Bootle Ladies' Health Society, who maintain

the supply of lady helpers who weigh babies, sell dried milk, and see to the general organisation of the Centre, while the Corporation provide the medical and health visiting staff.

The arrangements for medical staffings of these clinics have undergone several changes during the year. They were at first conducted by part-time lady medical officers, but opportunity was taken in October to combine the duties of the medical supervision of infants and school children in the person of Dr. Kate M. Cowe, who was then appointed whole-time Assistant School Medical Officer and Assistant Medical Officer of Health, and who thus undertook the important work of advising on infant and young child life up to school leaving age.

The North Consultation continued to be held weekly on Thursday afternoons at St. Matthew's Hall, and the South Consultation weekly on Tuesday afternoons at the School Medical Offices; in connection with the latter consultation a weekly sewing class was held each Friday. The attendances at these Centres showed such increases that it was considered advisable to open a third in another part of the town, and through the kindness of the Education Committee the Health Society was granted the use of a portion of the premises at the Junior Technical School in Marsh Lane in November, 1920. This third Centre obviously met a long standing need, and immediately secured attendances of such a size as almost to warrant its sub-division into two clinics weekly. Its success was not obtained at the expense of the other clinics, as the total weekly attendance at the three clinics combined now in April, 1921 averages 230, as against 131, which was the total for the two clinics for the corresponding month of 1920.

The numbers of cases and attendances at the clinics were:—

	North.	South.	Marsh Lane.*	Total.
New cases under one year ...	260	374	27	661
,, over ,, ...	57	31	13	101
Old cases ...	189	310	67	566
Total attendances ...	3858	4088	424	8360

* *Open for six weeks only.*

The average attendance at each meeting was 77 at the North, 82 at the South, and 62 at the new Marsh Lane Clinic. The average attendance at the Sewing Class was 13. It was evident that this class was doing a

useful work in instructing the mothers as to the pattern and material of hygienic garments for their infants, and advantage was taken of the establishment of the third Centre at Marsh Lane to commence a somewhat similar class in connection with that Centre. This held its first meeting in March, 1921, and promises to do similar valuable work in a different neighbourhood.

An analysis of the attendances made in the first eight months of the year at the two Centres showed that the percentage of babies born who were brought to the Clinic for advice was 46 from Linacre, 40 from Orrell, 35 from Derby, 33 from Stanley, 22 from Knowsley, and 18 from Mersey Ward. Enquiry into the reason of the lowness of the figures in Knowsley and Mersey Wards showed that there are a large number of Irish residents in that locality who are in the habit of breast-feeding their children and hence feel that there is less need of expert advice.

The Medical Officer of the Centre has first in mind the extreme importance of encouraging breast feeding, and only on unimpeachable medical evidence, or after her efforts have been defeated by the absence of the mother until she has successfully weaned the baby, is advice as to artificial feeding given. When such is advised, in most cases instructions are given for the reconstruction of the milk from one or other of the proprietary dried milk powders, and these are retailed in such cases by the Health Society workers. At one time it seemed that there was a danger lest the Centres should be considered by a certain class of mother merely as cheap shops for the sale of dried milk, and the necessary tightening up of the internal organisation was done to ensure that no dried milk was sold to any mother who was not bringing her baby constantly for medical observation, and one is now able to say that except for an occasional misunderstanding on the part of a worker no abuse of the Centres in this respect occurs.

A large amount of dried milk was sold at the Centres last year, but I believe that the success of the Centres should be measured not by the amount of milk sold nor even by the aggregate attendances of babies, but rather, as suggested above, by the extent to which breast feeding is encouraged and maintained. With this in mind an enquiry was conducted in December into the method of feeding at the expiration of six months from the first attendance of babies below the age of three months brought to the Clinics during 1920. Of 282 such babies, 120 were noted at the first

visits to the Clinics as being wholly breast fed and 35 as being partially breast fed, and six months later these numbers had fallen only to 100 and to 30 respectively. This is a very encouraging result when it is recognised that if a mother feels disinclined to put up with the restrictions which breast feeding entails, all she need do is to wean the baby and refrain from attending the Clinic for a few weeks until any possibility of restoring lactation has disappeared, and that the doctor's only means of combating such action lie in her persuasive powers. Incidentally this investigation, showing that only 127 out of 282 babies were breast fed at their first coming under the observation of the Medical Officer, demonstrates the amount of work still to be done in convincing the mothers of the great importance of natural feeding even if it should cost them some sacrifice of time or pleasure.

Bootle Ladies' Health Society. This voluntary Society is now in its fifteenth year and continues to render valuable assistance in all work having as its object the promotion of maternal and child welfare. Close co-ordination is maintained with the Health Department both in its general administration and in the detail of the duties which its members cheerfully undertake week after week in the various clinics and classes. Its activities include the free provision of midwives in approved cases, the loan of maternity bags containing model garments, the provision of fire-guards, and the loan of perambulators to needy mothers; and, as previously noted, its members were found willing to undertake the additional calls on their time arising from the opening of an additional class and two new clinics during the last few months. It may confidently be stated that, although the municipality could maintain and continue its own welfare clinics, they would need to be run on narrower lines, and even then an additional official staff would be required; and that there is no doubt as to the debt which the community owes to the Health Society.

WELFARE OF YOUNG CHILDREN.

Until within the last few years there was a gap between the efforts made to promote the health of infants up to the age of twelve months and the medical supervision of children of school age. This is now bridged by continued visitation in their homes of children between the ages of one and five, by admitting to the Welfare Clinics the toddlers of this age group, and by arrangements approved in 1919 by the Education Authority gave permission for children under school age to receive treatment at their clinics, particularly the Ophthalmic, Throat and Remedial

Exercises Clinics. During the year 1920 there were 79 deaths of children during their second year and 63 deaths of children between the ages of two and five years. Appendix 3 on page 64 gives a detailed classification of the cause of death in these cases, showing that in 50 cases death was due to diseases of the respiratory organs, in 22 cases to measles, in 15 cases to diphtheria, in 7 cases to diarrhoea and enteritis, in 7 cases to scarlet fever, in 7 cases to tuberculosis, and in 6 cases to whooping cough. A reduction of this mortality, which in many instances is preventable, will follow from a vigorous pushing on with such efforts as have already met with success in a reduction of infantile mortality, combined with general sanitary progress in the improvement of the child's environment.

Provision of Home Nursing. Arrangements by which the local District Nursing Association give assistance in the nursing of certain defined illnesses in their own homes continued in force, and 75 cases were treated by them during the year, viz. :—

	Number of cases.	Cured.	Died.	Total Attendances.
Cases from 1919 (Measles) ...	2	2	—	46
*Ophthalmia Neonatorum ...	43	40	1	854
*Measles	17	15	1	210
Pneumonia	9	7	2	116
Diarrhoea	3	3	—	36
Pleurisy	1	1	—	26
	<hr/>	<hr/>	<hr/>	<hr/>
	75	68	4	1288

* Two cases of Ophthalmia Neonatorum and one case of Measles were removed to Liverpool Hospitals.

Three cases of Ophthalmia Neonatorum were under treatment at the end of 1920.

Hospitals and Convalescent Homes. In addition to the maintenance of six beds for tuberculous cases in the Leasowe Hospital for Children, the Corporation, aided by the Liverpool Child Welfare Association, have provided treatment in convalescent homes for a few approved cases during the year.

Cost of Welfare Schemes. The cost of the scheme outlined above during 1919-1920 was £592 and the approximate expenditure for 1920-1921

is £1,115, the increased cost being largely attributable to salary advances. These are net costs after provision has been made for the patients' contributions and Government grants. During 1921-1922 it is estimated that the expenditure will be £2,177, which includes provision for the maintenance of ten beds in a maternity home during the last 10 months of the year.

IX.—HOUSING.

The Ministry of Health desires information on a number of different aspects of the housing question. This subject is fundamental in importance, and a satisfactory solution of the many difficulties it presents, will enable all other sections of public health activity to go forward with much improved prospects of success, and with the assurance that such success will not be nullified by an insanitary home or an unhealthy environment.

It is regrettable, therefore, that there is so little progress to report during the year 1920, although it is clear that the delay is not due to lack of sustained effort and goodwill on the part of the local authority. It is expected, however, that the labours of 1920 will enable a substantial advance to be made during 1921, as the following short statement, kindly prepared by the Borough Engineer, will show:—

Site No. 1—

1. Number of houses completed by 31st December, 1919...	...	Nil.
2. Number of houses completed by 31st December, 1920...	...	26
3. Number of houses commenced during 1920	... ..	36
4. Number of houses in signed contracts on 31st December, 1920		Nil.
5. Number of houses in approved tenders on 31st Dec., 1920	...	248
6. Number of houses for which plans have been approved on 31st December, 1920	... ..	216
7. The above figures are mutually exclusive and give a total of 526 houses, comprising 36 A2 type, 224 A3 type, 244 B3 type, and 22 B4 type.		

Site No. 2—

8. The acreage of this site purchased in 1920 is 28.617 acres.
9. The number of houses to be erected on the above site is 317, comprising 165 A3 type and 152 B3 type.

GENERAL HOUSING CONDITIONS IN THE DISTRICT.

Number of Houses. The number of houses in the Borough is 13,450. Twenty-six were built during the year, and 36 others were in course of erection. It is estimated that 11,500 of these 13,450 houses are let at a rental of £20 per annum or less.

Population. The total population estimated to the middle of the year by the Registrar General is given as 80,029, but this is almost certainly an under-estimate. During the year the "natural increase" of the population or the excess of births over deaths, was 1,153.

Extent of Shortage of Houses. The shortage of houses early in 1920 was placed at 1,100 from consideration of estimates of population checked by applications for food tickets, and by observation of the amount of sub-letting in the town. The new census will authoritatively establish the extent of the present need, but it may now be stated that even the above-mentioned natural increase requires new housing provision in excess of what the most optimistic consider will be given this year, and will leave no margin for replacement of houses in areas undergoing industrial development or of unfit houses which have had their day. Present economic distress may have diminished the number of applicants for new houses, but the observations of the Health Department lead one to think that the need is as acute as ever, although the want may not now be voiced.

Measures taken or contemplated to meet the shortage. It is proposed to build altogether 526 houses on site No. 1 purchased in 1918; as noted above, 26 of these were completed and 36 others were in course of erection at the end of 1920. At the time of writing, in April, 1921, a commencement has been made with a contract for the erection of another 212 houses, which are to be completed within ten months. The allocation of the types of houses is:—

A.2. (Cottage flats having living room, scullery, and two bedrooms)	36
A.3 (Living room, scullery, and three bedrooms)	224
B.3. (Parlour, living room, scullery and three bedrooms)	244
B.4. (Parlour, living room, scullery and four bedrooms)	22
Total	<hr/> 526 <hr/>

During the year also the compulsory purchase was completed of Site No. 2 with an area of 28½ acres, on which 317 houses will be built.

OVERCROWDING.

Extent. Complete information on this point cannot be obtained before the issuing of the census returns. Meanwhile one has the knowledge that in 1911, when there were many hundreds of empty houses, 9·2 per cent. of the population of Bootle were living under overcrowded conditions, that practically every house in the town is now occupied, and that many hundreds are occupied by two or more families. From time to time particular cases come under the notice of the Health Department during routine work, or on application for help in obtaining a municipal house or accommodation for a confinement; two recent ones concern a five-roomed house, two rooms of which are let off to a family consisting of father and mother, six children of ages ranging up to 18, and with a confinement expected in August; and another five-roomed house occupied by three families consisting of eight adults and seven children. Other instances can be imagined from the conditions noted on pages 45 and 46, under which an unselected tenth of last year's confinements occurred.

Measures taken to deal with Overcrowding. Little or nothing can be done in this matter until additional houses are available; during the year eleven notices were served upon occupiers in respect of cases where special conditions existed, and contrivances to re-arrange the use of the rooms or to lodge out some of the occupants effected some improvement.

FITNESS OF HOUSES.

General Standard of Housing in the District. The general standard is good; the fact that each house is self-contained, having its own yard or garden, water supply, water closet, and ashbin or ashpit, and that there are no courts or back to back houses, are two sanitary advantages which a newcomer can readily appreciate. On the other hand two points which detract from these advantages are the undoubted overcrowding on space in certain areas and the large number of fixed ashpits, the capacity of which allows refuse to be kept within a few feet of the house for several weeks on end. On the former point reference may be made to paragraph 109 of the last Annual Report which gave figures showing that in certain parts of the Bootle Hall Estate the density rises to 69·6 houses per acre; and on the latter to page 14 of this report.

General Character of the Defects found to exist in Unfit Houses. The defects are mainly those arising from the general holding up of house repair work during the last five or six years; a typical schedule of defects noted at an inspection under the Housing and Town Planning Act will have such entries as asphalt—no outside door; waste-pipe to the sink defective; defective pointing to reveals of kitchen and bedroom windows; scullery—defective plaster of walls, defective surface of floor; kitchen, parlour and bedrooms—defective floor, defective plaster of walls, dirty walls and ceilings; staircase—dirty walls and ceiling; attic—defective plaster of walls, defective roof causing dampness.

Action taken as regards Unfit Houses under (a) Public Health Acts, (b) Housing Acts. Statistical information with regard to action taken under these headings is given on page 60; from this it will be seen that inspection and action under the nuisance clauses of the Public Health Act have continued as in previous years and a large amount of minor repairs has been obtained. The appointment of an additional Inspector in October allowed of the resumption of systematic work under the Housing (Inspection of District) Regulations, 1910, which had been abandoned since 1915, before which date 1,151 out of approximately 11,500 working class houses had been inspected. Even with the strengthened staff it was obviously impossible to contemplate the early completion of such a volume of work, and it was accordingly decided to commence routine inspections in October in those areas, mentioned in the Housing Survey Report which was forwarded to the Ministry in July, 1920, noted as containing a large proportion of unfit houses. Up to the end of December, 189 of these houses had been inspected and the necessary steps to obtain repair had been put in hand.

Difficulties in remedying Unfitness. From the property owners' point of view the difficulties have been the high cost of materials and labour required to carry out the work asked for in relation to the rents at present allowed to be charged; from the point of view of the Health Department the difficulties have been a consequent tendency in some instances to comply with the letter only of the notice, and to execute the work in a slipshod, make-shift manner, presumably in the hope that the present high cost of labour and materials is temporary and that better workmanship may be more cheaply obtained in a year or two's time. This is particularly noticeable in the attention given to such defects as yard surfaces, defective cement-

work round the sinks, and defects in brick, flag, or tiled floors, although a similar tendency can be seen in renewing plaster and leaving defective laths, with resultant early cracking and recurrence of the original defect.

It is a pleasure, however, to record that certain owners are setting themselves a high standard and are complying with notices promptly and thoroughly, in spite of the fact that their tenants do not always treat the property with the care it should receive.

Conditions as regards Water Supply, Closet Accommodation, and Refuse Disposal. Reference may be made to pages 12 to 15 in respect of these matters.

Unhealthy Areas. In the revised Form of Survey of Housing Needs adopted by the Council in July, 1920, certain unhealthy areas were specified and it was intimated that demolition of houses in these areas would eventually be necessary. Careful consideration was subsequently given to the matter in all its aspects, and it was decided that no official representation can possibly be made at the present time. For the most part the houses contained in the areas in question are individually in a fair state of repair, and, meanwhile, action is being taken as noted above to remedy specific defects.

Bye-laws relating to Houses let in Lodgings, etc. Bye-laws relating to houses let in lodgings became operative in Bootle in 1904 and were revised in 1912. Bye-laws relating to tents, vans, and sheds were first adopted in 1888 and again in 1904.

As noted on page 57, in face of the overcrowding known to exist it is not practicable to enforce in all respects the bye-laws already existing with regard to sub-let houses, although such sub-letting produces serious disabilities from the want of conveniences for storing or cooking food, and for personal and household washing.

Increase of Rent and Mortgage Interest (Restrictions) Act, 1920. Since the coming into force of this Rent Restriction Act a number of applications have been dealt with under Section 2 (2) for the issue of a certificate that a house is not in all respects reasonably fit for human habitation or is otherwise not in a reasonable state of repair. The practice adopted has been to forward informally to the owner a list of defects at the same time as a certificate is granted to the tenant, and it has been found that in a number of instances necessary repair work has been put in hand straight away.

B. Proceedings under Public Health Acts—

(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied	710
(2) Number of dwelling-houses in which defects were remedied—	
(a) by owners	677
(b) by Local Authority in default of owners	Nil.

C. Proceedings under sections 17 and 18 of the Housing, Town Planning, &c., Act, 1909

(1) Number of representations made with a view to the making of Closing Orders	Nil.
(2) Number of dwelling-houses in respect of which Closing Orders were made	Nil.
(3) Number of dwelling-houses in respect of which Closing Orders were determined, the dwelling-houses having been rendered fit	Nil.
(4) Number of dwelling-houses in respect of which Demolition Orders were made	Nil.
(5) Number of dwelling-houses demolished in pursuance of Demolition Orders	Nil.

3. UNHEALTHY AREAS.

Areas represented to the Local Authority with a view to Improvement Schemes under (a) Part I., or (b) Part II., of the Act of 1890	Nil.
(1) Name of Area.	} Nil
(2) Acreage.	
(3) Number of working-class houses in area.	
(4) Number of working-class persons to be displaced.	
4. Number of houses not complying with the building bye-laws erected with consent of Local Authority under section 25 of the Housing, Town Planning, &c., Act, 1919	Nil.
5. Staff engaged on housing work with, briefly, the duties of each officer—	
Each of the three District Inspectors carries out the housing work in his allotted area, under the supervision of the Chief Inspector and the Medical Officer of Health.	

VITAL STATISTICS OF WHOLE DISTRICT DURING 1920 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			
		Un-corrected Number.	Nett.		Number.	Rate.*	of Non-residents registered in the District.	of Residents not registered in the District.	UNDER ONE YEAR OF AGE		AT ALL AGES.	
			Number.	Rate.					Number.	Rate per 1,000 Nett Births	Number.	Rate
1	2	3	4	5	6	7	8	9	10	11	12	13
1913.	72,186	2,132	2,166	30.0	1,065	14.7	52	252	316	145	1,265	17.5
1914.	73,230	2,279	2,321	31.7	1,033	14.1	54	263	286	123	1,242	17.0
1915.	Civil 71,617 Total 74,285	2,023	2,050	27.6	1,054	14.7	62	294	292	142	1,285	17.9
1916.	Civil 71,135 Total 77,396	2,047	2,076	26.8	1,101	15.5	80	258	227	109	1,279	17.98
1917.	Civil 68,871 Total 76,772	1,853	1,873	24.4	1,023	14.1	91	281	187	99	1,213	17.61
1918.	Civil 73,500 Total 80,500	1,781	1,810	22.5	1,224	16.6	63	268	210	116	1,429	19.44
1919.	Civil 77,000 Total 80,500	1,860	1,914	23.9	988	12.7	79	245	184	96	1,154	14.99
1920.	80,029	2,285	2,289	28.6	1,000	12.5	59	195	223	97	1,136	14.19

* These rates are based on the uncorrected numbers.
Area of District in acres, (land and inland water)—1,946.

Total population at all ages at census of 1911, 69,876; the number of inhabited houses 12,402, average number of persons per house 5.63.
All rates for the year 1920 are worked on the estimated population of 80,029.

APPENDIX 2.
CASES OF INFECTIOUS DISEASES NOTIFIED DURING THE YEAR 1920.

NOTIFIABLE DISEASES.	NUMBER OF CASES NOTIFIED.										Total Cases Notified in each Locality (e.g., Parish or Ward) of the District.						Total cases removed to Corporation Hospital or Sanatorium
	At all Ages.	At Ages—Years.					Under 1. year.	Derby Ward.	Stanley Ward.	Mersey Ward.	Knowsley Ward.	Linacre Ward.	Orrell Ward.				
		Under 1. year.	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.		
Smallpox	8	—	2	1	3	—	—	—	7	1	—	—	—	—	—	—	—
Cholera-Plague	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diphtheria (including Membranous Croup)	167	49	85	21	7	—	—	—	23	28	32	16	—	—	—	—	131
Erysipelas	31	1	1	5	10	1	—	—	8	7	8	1	—	—	—	—	—
Scarlet Fever	369	106	226	31	4	—	—	—	32	57	129	24	—	—	—	—	256
Typhus Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enteric Fever	4	—	2	—	1	—	—	—	1	—	1	—	—	—	—	—	4
Relapsing Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Continued Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Puerperal Fever	2	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—
Cerebro-spinal Meningitis	2	1	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
Polio-myelitis	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pulmonary Tuberculosis	168	2	28	39	69	—	—	—	29	30	39	13	—	—	—	—	149
Other forms of Tuberculosis	48	9	20	9	7	—	—	—	11	13	6	3	—	—	—	—	—
Ophthalmia Neonatorum	49	—	—	—	—	—	—	—	6	5	15	2	—	—	—	—	—
*Infantile Diarrhoea	15	8	—	—	—	—	—	—	8	3	1	—	—	—	—	—	—
Influenzal Pneumonia	4	1	—	—	3	—	—	—	2	—	1	—	—	—	—	—	—
Acute Primary Pneumonia	23	—	5	5	7	—	—	—	6	3	5	1	—	—	—	—	—
Trench Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Malaria	5	—	1	1	3	—	—	—	—	—	—	—	—	—	—	—	—
Encephalitis Lethargica	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dysentery	2	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—
Totals	900	63	371	113	118	53	3	169	144	139	148	239	61	—	—	—	540

* Voluntary notification of cases under the age of two years during July, August and September.
Isolation Hospital or Hospitals, Sanatoria, etc.:—Corporation Hospital, Linacre Lane, Bootle; Bootle Sanatorium, Maghull.

CAUSES OF, AND AGES AT, DEATH DURING THE YEAR 1920.

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 & under 25 years.	25 & under 45 years.	45 & under 65 years.	65 and upward.	
All causes { Certified	1091	206	77	63	68	65	161	224	227	151
{ Uncertified	45	17	2	..	1	1	3	10	11	1
Enteric Fever ... ..	..	..	..	..	..	..	..	..	..	1
Small-pox	2	..	..	..	..	..	1	1	..	..
Measles	33	8	11	11	3	..	..	..	..	1
Scarlet Fever	11	..	..	7	4	..	..	..	..	12
Whooping Cough	19	13	4	2	..	..	..	..	..	..
Diphtheria and Croup	31	2	3	12	11	2	1	..	..	27
Influenza	24	..	..	2	3	1	13	2	3	1
Erysipelas ... ..	..	..	..	..	..	..	..	..	..	1
Phthisis (Pulmonary Tuberculosis)	91	1	..	1	6	25	44	17	..	9
Tuberculous Meningitis	14	3	2	..	6	2	1	..	..	1
Other Tuberculous Diseases	20	1	1	3	6	3	2	4	..	4
Cancer, malignant disease	76	..	..	..	..	1	10	40	25	10
Rheumatic Fever	8	..	..	1	2	2	1	1	1	..
Meningitis	15	4	2	1	4	2	1	1	..	2
Organic Heart Disease	67	1	..	..	3	1	15	23	24	3
Bronchitis	90	25	4	1	..	..	4	22	34	1
Pneumonia (all forms)	159	41	32	7	7	9	21	26	16	13
Other diseases of respiratory organs	18	2	3	3	1	..	1	4	4	2
Diarrhoea and Enteritis	26	17	5	2	..	..	..	1	1	..
Appendicitis and Typhlitis ... ..	..	..	..	..	..	..	..	..	..	1
Cirrhosis of Liver	3	..	..	..	..	..	..	2	1	..
Alcoholism	2	..	..	..	..	..	..	2	..	1
Nephritis and Bright's Disease	21	1	..	1	1	2	4	5	7	5
Puerperal Fever	1	..	..	..	..	..	1	..	..	..
Other accidents and diseases of Preg- nancy and Parturition	6	..	..	..	..	1	5	..	..	..
Congenital Debility and Malformation, including Premature Birth	77	76	..	..	1	..	..	..	..	..
Violent Deaths, excluding Suicide	48	1	4	4	5	6	10	14	4	29
Suicide	3	..	..	..	..	1	1	1	..	..
Other Defined Diseases	256	26	6	5	6	8	28	64	113	26
Diseases ill-defined or unknown... ..	12	1	2	..	..	..	..	4	5	2
Totals	1136	223	79	63	69	66	164	234	238	152

SUB-ENTRIES INCLUDED IN ABOVE FIGURES.

Cerebro-spinal Fever	3	..	..	1	1	..	..	1	..	1
Poliomyelitis	1	..	..	1	..	..	..	..	..	..
Broncho-pneumonia	86	33	26	6	3	2	5	7	4	5
Venereal Diseases	4	4	..	..	..	..	..	..	..	..
Cerebral Hæmorrhage	41	..	..	..	..	..	1	13	27	..
Arterio-Sclerosis	14	..	..	..	..	..	1	1	12	..
Senile Decay	43	..	..	..	..	..	..	1	42	..
Tetanus ... ..	..	..	..	..	..	..	..	..	..	..
General Paralysis of Insane	2	..	..	..	..	..	1	1	..	..
Aneurism ... ..	..	..	..	..	..	..	..	..	..	..
Locomotor Ataxy	2	..	..	..	..	..	..	1	1	..

APPENDIX 4.

INFANT MORTALITY.

1920. Nett Deaths from stated causes at various Ages under 1 Year of Age.

CAUSE OF DEATH.	Age Group							Total under 4 weeks.	4 weeks and under 3 months.	3 months and under 6 months.	6 months and under 9 months.	9 months and under 12 months.	Total Deaths under One Year.
	Under 1 week.	1-2 weeks.	2-3 weeks.	3-4 weeks.	3 months and under 6 months.	6 months and under 9 months.	9 months and under 12 months.						
All Causes	34	13	14	12	73	34	31	39	29	206			
(Certified)	7	9	—	—	9	3	2	1	2	17			
(Uncertified)	—	—	—	—	—	—	—	—	—	—			
Small-pox	—	—	—	—	—	1	—	—	—	1			
Chicken-pox	—	—	—	—	—	—	—	—	—	—			
Measles	—	—	—	—	—	—	—	—	—	—			
Scarlet Fever	—	—	—	—	—	—	—	—	—	—			
Whooping Cough	—	—	—	—	—	3	1	4	5	13			
Diphtheria and Croup	—	—	—	—	—	—	—	1	1	2			
Erysipelas	—	—	—	—	—	—	—	—	—	—			
Tuberculous Meningitis	—	—	—	—	—	—	—	—	—	—			
Abdominal Tuberculosis	—	—	—	—	—	—	—	—	—	—			
Other Tuberculous Diseases	—	—	—	—	—	—	—	—	—	—			
Meningitis (not Tuberculous)	—	—	—	—	—	—	—	—	—	—			
Convulsions	3	2	1	—	6	3	2	2	—	13			
Laryngitis	—	—	—	—	—	—	—	—	—	—			
Bronchitis	2	—	2	—	4	10	4	4	3	25			
Pneumonia (all forms)	—	1	—	3	4	4	10	11	12	41			
Diarrhoea	—	—	—	—	—	1	1	1	1	3			
Enteritis	—	—	—	—	—	4	3	4	2	14			
Gastritis	—	—	—	—	—	—	—	—	—	—			
Syphilis	—	—	—	—	—	1	1	—	—	1			
Rickets	—	—	—	—	—	—	2	—	—	4			
Suffocation, overlying	—	—	—	—	—	—	—	—	—	—			
Injury at Birth	—	—	—	—	—	—	—	—	—	—			
Atelectasis	—	—	—	—	—	—	—	—	—	—			
Congenital Malformations	1	1	—	—	1	2	2	—	—	7			
Premature Birth	29	3	8	4	44	1	—	—	—	45			
Atrophy, Debility and Marasmus	4	3	3	3	13	6	4	—	1	24			
Other Causes	2	1	—	—	3	1	3	3	1	11			
Totals	41	15	14	12	82	37	33	40	31	223			

Nett Births in the year { legitimate infants ... 2,201
 { illegitimate infants... 88

Nett Deaths in the year { legitimate ... 213
 { illegitimate... 10

APPENDIX 5.

APPROXIMATE VITAL STATISTICS OF EACH WARD IN 1920 AND PREVIOUS YEARS.

YEAR	THE WHOLE BOROUGH			DERBY WARD			STANLEY WARD			MERSEY WARD			KNOWSLEY WARD			LINACRE WARD			ORRELL WARD									
	Population esti- mated to middle of each year	Births registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to middle of each year	Births registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to middle of each year	Births registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to middle of each year	Births registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to middle of each year	Births registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to middle of each year	Births registered	Deaths at all Ages	Deaths under 1 year				
1910	69,122	2,016	1,019	249	14,124	441	196	57	11,348	224	123	18	12,149	350	237	65	12,314	365	200	39	15,455	498	223	53	3,732	138	40	17
1911	70,130	2,093†	1,283	308	14,590	436	219	49	11,370	247	196	39	12,021	391	278	61	12,307	356	271	76	15,876	525	266	68	2,966	138	49	15
1912	71,152	2,093†	1,183	232	15,060	430	214	47	11,394	224	153	24	11,893	386	301	68	12,301	397	251	50	16,302	504	224	33	4,202	152	36	10
1913	72,186	2,146†	1,265	316	15,535	449	209	49	11,418	258	159	33	11,766	365	272	73	12,295	395	280	75	16,732	501	285	64	4,440	178	60	22
1914	73,230	2,304†	1,242	286	16,016	408	183	34	11,443	269	158	28	11,633	391	252	58	12,288	497	303	71	17,168	564	278	71	4,682	175	68	24
*1915	71,617	2,031†	1,286	292	15,663	378	197	45	11,191	211	176	19	11,377	356	275	72	12,017	409	293	70	16,790	514	280	70	4,579	163	65	16
*1916	71,135	2,047†	1,279	227	15,558	407	204	45	11,115	246	183	27	11,300	339	263	42	11,937	440	308	69	16,677	455	276	36	4,548	160	45	8
*1917	68,871	1,853†	1,213	187	15,062	355	195	26	10,761	217	179	22	10,940	320	243	40	11,557	374	293	44	16,147	440	250	44	4,404	147	53	11
*1918	73,500	1,781†	1,429	210	16,075	312	238	34	11,485	206	173	24	11,676	328	291	34	12,333	390	305	47	17,232	404	331	53	4,609	141	91	18
*1919	76,962	1,863†	1,154	184	16,833	369	180	20	12,026	205	188	19	12,226	332	238	40	12,914	384	239	53	18,043	425	244	40	4,920	148	65	12
Average.	71,791	2,023	1,235	249	15,452	399	204	41	11,355	231	169	25	11,698	356	265	55	12,226	401	275	59	16,642	483	266	53	4,417	154	57	15
			17.2	123			13.2	103			14.9	108		22.7	154		22.5	147		16.0			110				12.9	97
*1920	80,029	2,229†	1,136	223	17,504	426	195	33	12,505	267	147	19	12,713	393	236	48	13,429	473	270	60	18,762	515	233	49	5,116	155	55	14
		27.9	14.2	100†			24.3	11.1			21.4	11.8		30.4	18.6	12.2	35.2	20.1	22.7			12.4	9.5			30.3	10.8	9.0

† These totals do not include 27 births in 1911, 36 in 1912, 20 in 1913, 17 in 1914, 19 in 1915, 29 in 1916, 20 in 1917, 29 in 1918, 51 in 1919 and 60 in 1920. The wards in which the mothers resided are not known.

* The numbers of births and deaths are accurate, but the estimated populations are probably inaccurate. The birth-rates are calculated on the estimated populations of 74,285, 77,396, 76,772, 80,500 and 80,172 for 1915,-16,-17,-18 and-19 respectively.

† The infant mortality figure when corrected is 97.

APPENDIX 6.

WATER ANALYSES.

	Vyrnwy Inlet	Rivington Inlet
	Parts per 100,000	
Total solid matter in solution ...	3.60	7.88
Oxygen required to oxidise—		
In 15 minutes	0.147	0.009
In three hours	0.268	0.024
Ammonia	0.003	0.001
Ammonia from organic matter (by distillation with alkaline per- manganate)	0.005	0.003
Nitrogen as Nitrates	none	minute trace
Combined Chlorine	0.75	1.30
Hardness	1.52	3.94

APPENDIX 7.

SUMMARY OF WORK DONE BY THE INSPECTOR OF NUISANCES
AND HIS ASSISTANTS.

NUISANCES.

No. of complaints made by inhabitants	1,624
„ nuisances discovered	2,384
Notices to owners—	
Choked and defective drains	337
Choked and defective downspouts and raingutters	354
Defective roofs	603
Defective yard surfaces	180
Defective water pipes	445
Notices served on occupiers—	
Overcrowding in rooms	11
Dirty conditions	66
Removing fowls and other animals	13
Removing manure	12
Removing rubbish	33
Non-separation of sexes	6
No. of re-inspections of nuisances	7,820
„ defective ashbins renewed	206
„ informations laid	11
No. withdrawn on payment of costs owing to abatement of nuisance	5
No. of Magistrates' Orders obtained	6
Amount of Fines and Costs	£4/18/0

CINEMATOGRAPH SHOWS.—There are six picturedromes in the town, and they received 90 inspections.

CANAL BOATS AND CATTLE SHIPS.

No. of canal boats inspected in 1920	115
„ infringements re certificates	4
„ other defects	4
„ notices sent in respect of same	8
„ cattle ships inspected	2

COMMON LODGING HOUSES.

No. registered under the Public Health Act... ..	3
No. of inspections	83
„ informations laid in respect of infringements	—

SUB-LET HOUSES.

No. of inspections by male inspectors	136
„ inspections by female inspectors	2,152
„ infringements of Bye-laws relating to sub-let houses	32
„ informations laid	—
Amount of fines and costs	—

STEPS TAKEN TO PREVENT NUISANCE FROM SMOKE.

No. of observations made	101
„ intimations sent	12
„ notices served in respect of excessive black smoke	2
„ informations laid	2
Amount of fines and costs	£1/7/6

DAIRIES, COWSHEDS, AND MILKSHOPS.

No. of milkshops on register	27
„ shippens with dairies attached	24
„ inspections made—shippens 243, milkshops 350	593

The occupiers of shippens and milkshops have from time to time been verbally cautioned with regard to the cleanliness of the premises and the cows, and the proper storage of milk.

FOOD INSPECTIONS.

No. of visits to foodshops	4,845
Amount of food seized (see page 22.)	
No. of inspections of hawkers' carts	211
„ inspections of food factories	232

SUMMARY OF LEGAL PROCEEDINGS.

Defective drains, etc.	11
Infringements of Sale of Food and Drugs Acts	6
Smoke nuisances	2
Common lodging houses	—
Sub-let houses	—
Unsound food	—

DISINFECTION : INFECTIOUS DISEASES.

No. of houses disinfected after notifiable infectious diseases	...	...	553
„ houses disinfected after phthisis	...	...	226
„ schools disinfected after measles	...	...	4
„ visits made to infected houses	...	...	572
„ re-visits made to infected houses	...	...	1,438
„ houses cleaned in default of or at request of owners	...	...	60
„ houses disinfected for causes other than fevers	...	...	28

All houses assessed at £13 per annum or less are cleaned after infectious disease (i.e., the walls stripped and the ceilings whitened), by the Corporation at their own cost; in case of Phthisis the Corporation strip, when necessary, whatever the rent.

FILTHY HOUSES.

No. of houses reported	...	...	34
„ intimations sent	...	...	34
„ houses cleansed	...	...	34

LIST OF ARTICLES DISINFECTED.

	Bootle.	Formby.	Totals.
Paillasses	220	17	237
Mattresses	666	28	694
Beds	583	19	602
Bolsters and Pillows	2543	86	2629
Blankets	1875	73	1948
Quilts	850	26	876
Sheets	1188	43	1231
Carpets	114	7	121
Wearing Apparel	3207	135	3342
Miscellaneous Articles	3247	167	3414
	<u>14493</u>	<u>601</u>	<u>15094</u>

NOTE.—These figures do not include the ambulance bedding (one bed, one pillow, and three blankets), which is disinfected after the removal of each case.

One hundred and seven library books were disinfected.

The following articles were destroyed, at the request of the owners, after infectious diseases :—

Paillasses, 2; Beds, 3; Miscellaneous, 3.

FLUSHING.

The flushing gang consists of two Corporation Workmen and a Liverpool Waterman.

No. of private houses at which drains were flushed	...	...	10,524
„ passage sewers flushed	...	...	661

Drains were flushed at public buildings 103 times.

The drains at the Bootle Borough Hospital and the Liverpool Maternity Home in Hawthorne Road were flushed 12 and 10 times respectively during the year.

The amount of fresh water used during the year was 2,619,650 gallons. The amount of salt water used was 40,470 gallons.

APPENDIX 8.

FACTORY AND WORKSHOP ACT, 1901.

Factories, Workshops, Laundries, Workplaces, and Homework.

1.—INSPECTION.

Including inspections made by Sanitary Inspectors or Inspectors of Nuisances.

Premises.	Inspections.	Number of	
		Written Notices.	Prosecutions.
Factories (including Factory Laundries) ...	252	—	—
Workshops (including Workshop Laundries) ...	832	16	—
Workplaces (other than Outworkers' Premises included in Part 3 of this Report) ...	208	1	—
Totals	1292	17	—

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	25	25	—	—
Want of ventilation	—	—	—	—
Overcrowding	1	1	—	—
Want of drainage of floors	—	—	—	—
Other nuisances... ..	5	5	—	—
Sanitary Accommodation—				
Insufficient	1	1	—	—
Unsuitable or defective	3	3	—	—
Not separate for sexes	—	—	—	—
Offences under the Factory and Workshop Act—				
Illegal occupation of underground bakehouses (S.101)	—	—	—	—
Breach of special sanitary requirements for (S.S. 97 to 100)	—	—	—	—
Other Offences—				
(Excluding offences relating to outwork which are included in Part 3 of this Report) ...	—	—	—	—
Totals	35	35	—	—

3.—HOME WORK.

Nature of Work:—Wearing Apparel—

1. Making, etc., Dungaree Overalls, Men's and Women's Underclothing, Dressmaking, Tailoring, and Boot Repairing.
2. Cleaning and Washing.

Outworkers, Lists, Section 107—
Lists received from Employers—

	Lists.	Outworkers. Contractors.	Workmen.
Twice in the year	2	—	2
Once in the year	6	—	6
Number of addresses of Outworkers received from other Councils	8
Number of addresses of Outworkers forwarded to other Councils	2
Notices served on Occupiers as to keeping or sending lists	—
Prosecutions—			
Failing to keep or permit inspection of Lists	—
Failing to send Lists	—
Number of Inspections of Outworkers' Premises	35
Outwork in Unwholesome Premises, Section 108	—
Instances	—
Notices served	—
Prosecutions	—
Outwork in Infected Premises, Sections 109 and 110	—
Instances	—
Order made (S. 110)	—
Prosecutions (S.S. 109 and 110)	—

4.—REGISTERED WORKSHOPS.

Workshops on the Register (S. 131) at the end of the year—	No.
Bakehouses	33
Confectionery Bakehouses	20
Workshops and Workplaces	120
Outworkers' Premises	6
Total number of workshops on Register	179

5.—OTHER MATTERS.

Class.	No.
Matters notified to H.M. Inspector of Factories—	
Failure to affix Abstract of the Factory and Workshop Act (S. 133)	3
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (S. 5)—	
Notified by H.M. Inspector	2
Reports (of action taken) sent to H.M. Inspector	2
Other	—
Underground Bakehouses (S. 101)—	
Certificates granted during the year (renewed)	15
In use at the end of the year	15

BAKEHOUSES.

The number of bakehouses now on the register is 53, and to these 290 visits were made during the past year.

Nine notices had to be issued because of neglect to perform the necessary lime-washing.

APPENDIX 9.

SALE OF FOOD AND DRUGS ACTS.

SAMPLES TAKEN, 1920.

	Total Number of Samples Analysed	Number re- ported to be adulterated or not up to standard	Number of Prosecutions *	Number of Convictions	Remarks
Milk	116	12	4	4	In the 8 cases not pro- ceeded with, the de- ficiency was so small as not to warrant prosecu- tion.
Baking Powder	2	...	...	...
Margarine	7	see page 24
Self-raising Flour ..	7	...	...	..
Butter	22	1	...	...
Vinegar	2	1	...	...
Pepper	4	...	..	...
Lard... ..	2	...	...	...
Rice	2	...	...	...
Cocoa	3	..	..	...
Castor Oil	4	..	...	...
Lemonade	1	...	...	...
Sarsaparilla	1	see page 24
Cheese	2	...	..	...
Jam	2	...	..	...
Potted Shrimps	2	1	...	...
Ginger Beer	1	..	..	...
Epsom Salts	2	...	...	...
Seidlitz Powders	2	...	...	...
Egg Powder	4	...	...	...
Syrup	2	...	..	...
Treacle	1	...	...	...
Custard Powder	4	...	...	...
Preserved Cream	2	..	...	...
Camphorated Oil	1	...	...	...
Totals	198	15	4	4	

* Two other prosecutions were instituted, one for "refusing to sell" and one for "obstruction," making the total six.

APPENDIX 10.
DEATHS FROM ZYMOTIC DISEASES.

	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	Average for 10 years 1910—1919
Small Pox ...	...	1	...	...	...	...	...	..	...	...	2	0.1
Scarlet Fever...	6	5	1	4	4	7	4	4	22	8	11	6.5
Diphtheria ...	6	11	8	4	9	9	10	13	21	16	31	10.7
Measles ...	22	21	62	33	39	14	17	27	8	12	33	25.5
Whooping Cough ...	32	22	16	37	14	57	19	32	25	2	19	25.6
Enteric Fever	2	3	1	1	1	3	...	1	3	...	...	1.5
Typhus Fever	...	...	...	...	...	...	...	...	...	...	...	—
Diarrhœa and Enteritis	77	144	40	106	102	93	93	40	53	41	26	78.9
Totals ...	145	207	128	185	169	183	143	117	132	79	122	148.8
Rate per 1,000 of the population ...	2.09	2.95	1.79	2.56	2.31	2.56	2.01	1.69	1.8	1.03	1.52	2.08

APPENDIX 11.
NOTIFICATIONS OF INFECTIOUS DISEASES.

	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	Average for 10 years 1910-1919
Population...	69,122	70,130	71,152	72,186	73,230	71,617	71,135	68,871	73,500	76,962	80,029	71,791
Smallpox ...	—	1	—	...	—	—	—	—	—	8	8	0.9
Scarlet Fever ...	288	238	189	150	192	269	177	190	343	353	369	239
Diphtheria... (including Croup)	54	85	58	39	61	74	75	94	123	168	167	83
Typhus Fever	...	...	...	...	...	...	...	...	...	...	...	—
Continued Fever ...	...	...	...	...	...	...	...	...	...	...	...	—
Enteric Fever ...	12	16	11	12	7	16	4	3	7	5	4	9.3
Puerperal Fever ...	2	5	2	3	4	3	5	1	1	6	2	3.2
Erysipelas ...	26	33	33	35	36	42	27	18	22	19	31	29.1
Pulmonary Tuberculosis ...	123	188	186	295	257	230	234	205	176	150	168	204
Other form of Tuberculosis ...	..	...	...	80	68	89	90	62	52	53	48	..
Ophthalmia Neona- torum ...	...	...	...	...	31	19	38	47	33	40	49	...
Cerebro-spinal Meningitis ...	...	...	1	...	...	2	2	1	2	1	2	...
Poliomyelitis ...	...	...	3	...	...	1	3	1	1	...	2	...
Influenzal Pneumonia ...	...	...	...	...	...	...	...	...	...	55	4	...
Acute Primary Pneumonia ...	...	...	...	...	...	...	...	...	...	36	23	...
Trench Fever ...	...	...	...	..	...	...	...	...	..	1	...	...
Malaria ...	...	...	...	...	...	...	...	...	...	8	5	...
Encephalitis Lethargica ...	...	...	...	...	...	...	...	...	..	1	1	...

APPENDIX 13.

SLEEPING ACCOMMODATION OF NOTIFIED CASES OF
PULMONARY TUBERCULOSIS.

The following table gives particulars of the isolation, or lack of it, of patients suffering from pulmonary tuberculosis at the time of notification, and after visitation by the Tuberculosis Officer or Visitors.

	On first visit. Afterwards.	
No. who occupied a separate bedroom	43	87
No. who occupied a separate parlour alone	—	4
No. who occupied a separate bed in a room occupied by:—		
1 other person	1	6
2 other persons	2	2
3 other persons	2	5
Many other persons (common lodging house)	1	1
No. who occupied a bed in common with—		
1 other person	63	37
2 other persons	34	12
3 other persons	9	6
Two beds in room—		
Two persons in each bed	4	3
Three persons in each bed	6	1
Kitchen alone	3	4
	168	168
Totals	168	168

In fifteen unnotified cases (the source of knowledge being the death returns), 5 occupied prior to death a separate room, 8 slept with one other person, and 2 with two other persons.

APPENDIX 14.

MAGHULL SANATORIUM.

Pulmonary Tuberculosis: Cases admitted during 1920.

AGES	BOOTLE				Lancashire County Council		Seamen's National Insurance Society	Totals	
	Males		Females		Males	Females			
	Insured	Non- insured	Insured	Non- insured					
5—10 years	...	8	...	2	...	...	...	5
10—15 years	...	2	...	6	...	...	...	8
15—20 "	3	...	4	3	1	1	...	12	
20—25 "	8	...	2	...	1	1	...	12	
25—30 "	6	...	2	2	...	...	6	16
30—35 "	3	1	...	...	...	1	2	7
35—40 "	7	...	...	1	...	...	2	10
40—45 "	4	...	1	...	1	1	2	9	
45 and over	3	1	...	...	...	1	4	9
	34	7	9	14	3	5	16	88	
	64				8				

APPENDIX 15.

LINACRE HOSPITAL.

Pulmonary Tuberculosis: Cases admitted during 1920.

AGES	BOOTLE				Lancashire County Council		Seamen's National Insurance Society	Totals	Deaths.
	Males		Females		Males	Females			
	Insured	Non- insured	Insured	Non- insured					
5—10 years	...	1	...	...	...	...	1	...	
10—15 "	...	3	...	3	...	...	6	...	
15—20 "	...	...	3	2	...	...	5	...	
20—25 "	4	1	3	5	...	1	14	3	
25—30 "	8	...	1	2	...	1	13	2	
30—35 "	7	...	1	3	...	...	3	14	2
35—40 "	3	...	...	1	...	...	3	7	1
40—45 "	2	...	1	...	...	1	2	6	2
45 and over	9	1	1	...	1	...	5	17	...
	33	6	10	16	1	3	14	83	10
	39		26						

Deaths:—Bootle 7; Lancashire County Council 1; Seamen 2.

APPENDIX 16.

VENEREAL DISEASES TREATMENT CENTRE. COPY OF REPORT BY
DR. CLEMMEY.

TABLE I.

	Syphilis.		Soft Chancre.		Gonorrhœa.		Conditions other than Venereal.		TOTAL.	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
1. § Number of persons who, on the 1st January, 1920, were under treatment or observation for:—	90	29	3	—	76	1	4	—	173	30
2. Number of persons dealt with during the year at or in connection with the out-patient Clinic for the first time and found to be suffering from:—										
Syphilis only	177	48	—	—	—	—	—	—	177	48
Soft chancre only	—	—	8	1	—	—	—	—	8	1
Gonorrhœa only	—	—	—	—	198	5	—	—	198	5
§ Syphilis and soft chancre	—	—	5	1	—	—	—	—	5	1
§ Syphilis and Gonorrhœa	—	—	—	—	13	—	—	—	13	—
§ Gonorrhœa and soft chancre	—	—	1	—	—	—	—	—	1	—
§ Syphilis, soft chancre and gonorrhœa	—	—	1	—	—	—	—	—	1	—
Conditions other than venereal	—	—	—	—	—	—	32	5	32	5
TOTAL—Item 2	177	48	15	2	211	5	32	5	435	60
*TOTAL—Items 1 and 2	267	77	18	2	287	6	36	5	608	90
3. § Number of persons who ceased to attend the out-patient Clinic										
(a)—before completing a course of treatment for:—	64	14	4	—	59	4	—	—	127	18
(b)—after completion of a course of treatment, but before final tests as to cure of:—	38	7	3	—	37	—	—	—	78	7
4. † Number of persons transferred to other Treatment Centres after treatment for:—	19	—	—	—	32	—	36	5	87	5
5. § Number of persons discharged from the out-patient Clinic after completion of treatment and observation for:—	70	39	6	—	101	1	—	—	177	40
6. § Number of persons who, on 1st January, 1921, were under treatment or observation for:—	76	17	5	2	58	1	—	—	139	20
*Total—Items 3, 4, 5 and 6	267	77	18	2	287	6	36	5	608	90
7. §§ Total attendances of all persons at the out-patient Clinic who were suffering from:—	2150	616	205	9	1936	35	103	45	4394	705
8. Aggregate number of "In-patient days" of treatment given to persons who were suffering from:—	120	129	—	—	5	55	—	—	125	184
							For detection of Spirochetes.	Other Organisms.	For Wassermann Reaction.	
9. Examinations of Pathological material:—										
(a) Specimens which were examined at, and by the Medical Officer of, the Treatment Centre					Nil	39		Nil		Nil
(b) Specimens from persons attending at the Treatment Centre which were sent for examination to an approved laboratory					Nil	Nil		Nil		284

§ The number of persons suffering from two or more venereal diseases should be entered under the heading of each disease in the vertical column.

* The total of Items 1 and 2 should agree with the total of Items 3, 4, 5, and 6, so far as Syphilis, Soft Chancre, and Gonorrhœa are concerned.

† These persons should not be included in Items 3 (a) or 3 (b).

§§ These figures should include all attendances made by patients, including those made for irrigation, local applications, &c., under general medical supervision, during the intervals between the days on which the ordinary out-patient Clinics are held.

TABLE II.

Statement showing the services rendered at the Treatment Centre during the year, classified according to the areas in which the patients resided.

Name of County or County Borough (or Country in the case of persons residing elsewhere than in England and Wales).	Bootle.	Liverpool.	Lancs.	Cheshire.	Belfast.	Glasgow.	U.S.A.	Other areas.	Total.
A. §Number of persons from each area dealt with during the year at or in connection with the out-patient Clinic for the first time and found to be suffering from :—									
Syphilis	114	35	55	1	2	3	2	13	225
„ and chancre.. ...	5	—	1	—	—	—	—	—	6
Soft chancre	3	4	1	—	—	—	—	1	9
Gonorrhœa and chancre ...	—	1	—	—	—	—	—	—	1
Gonorrhœa	97	38	37	3	2	1	6	19	203
„ chancre and syphilis	—	—	—	—	1	—	—	—	1
Gonorrhœa and syphilis ...	9	1	2	—	1	—	—	—	13
Conditions other than venereal	21	6	4	1	—	1	2	2	37
TOTAL ...	249	85	100	5	6	5	10	35	495
B. §Total number of attendances at the out-patient Clinic of all patients residing in each area ..									
	2961	748	1040	38	64	33	22	193	5099
C. §Aggregate number of "In-patient days" of all patients residing in each area									
	185	50	70	—	—	—	—	4	309
D. Number of doses of Salvarsan substitutes given in the :—									
1. Out-patient Clinic	1019	189	293	—	37	13	7	76	1634
2. In-patient Dept.	10	5	3	—	—	—	—	—	18
to patients residing in each area									
E. Give the names of Salvarsan substitutes used in the treatment of syphilis and the usual initial and final doses.									
	Neokharsivan	} From 0·45 grms. to 0·9 „							
	Novarsenobillon								
F. State the number of doses of Salvarsan substitutes usually given in a full course of treatment.									
	Six.								
G. State in what proportion of cases, approximately, Salvarsan substitutes are used in the treatment of syphilis.									
	All.								
H. State the nature of tests applied in deciding as to discharge of patients referred to in Item 5 on previous page.									
	Syphilis—Repeated negative Wassermann tests. Gonorrhœa—After satisfactory evidence that there is no gonorrhœal urethral discharge.								

§ The totals in Item A should agree with the corresponding totals in Item 2 on the previous page, and the totals in items B and C should agree with the respective totals in Items 7 and 8 on the previous page.

28th January, 1921.

W. N. CLEMMEY,
Medical Officer of the Treatment Centre.

ANTE-NATAL CLINIC.

JANUARY 1st, 1920, to DECEMBER 31st, 1920.

	Total.	Normal Labour.	Ceased Attending.	Difficult Labour.	Remarks.
Primigravidae for measurements—					
Pelvis normal	33	24	4	5	
Pelvis contracted	9	3	2	4	
Multigravidae with history of dystocia—					
Pelvis normal	8	6	1	1	
Pelvis contracted	6	2	—	4	
Multigravidae with history of eclampsia	1	1	—	—	
Repeated still-birth, abortion, etc.—					
Wassermann positive	3*	—	—	—	*1 Twins, forceps. 1 Still-birth. 1 Neo-natal death.
Wassermann negative	2	2	—	—	
Syphilis, secondary	1	1	—	—	
Leucorrhoea, no gonococci found	6	5	—	1	
Confirmation of fact or period of pregnancy	26	19	7	—	
Oedema and albuminuria	1	1	—	—	
Reputed oedema, absent, urine normal	1	—	1	—	
Varicose veins	16	10	4*	2	* Includes one premature still-birth, with Wassermann positive.
Prolapsus	2	1	1	—	
Gastro-intestinal, anaemia, debility	39	25	14	—	
Bronchitis	5	3	2	—	
Dermatitis, septic	2	1	1	—	
Mitral Stenosis	1	1	—	—	
History of pyelo-nephritis, urine normal	1	1	—	—	
Pyelitis	1	1	—	—	
Middle ear disease	1	—	—	—	1 transferred to hospital.
Inguinal hernia	1	—	1	—	
Epilepsy	1	1	—	—	
Mucous polyp in rectum	1	—	1	—	
Cessation of foetal movements after fall	1	—	—	—	1 abortion.
Home conditions unsuitable for confinement	1	1	—	—	
	<u>170</u>	<u>109</u>	<u>39</u>	<u>17</u>	<u>5</u>

NOT PREGNANT—

Signs or symptoms suggesting pregnancy	15
Repeated still-births, abortions, etc., Wassermann positive	4
Prolapsus	2
After difficult labour, cellulitis	1
	<u>22</u>

R. A. HENDRY.
Medical Officer.

APPENDIX 20.
 CASES TREATED IN THE INFECTIOUS DISEASES HOSPITAL,
 LINACRE, DURING THE YEAR 1920.

Patients in Hospital on January 1st, 1920.

	Scarlet Fever	Diphtheria	Phthisis	Other Diseases.	Totals
Bootle	41	11	12	1	65
Litherland	16	...	...	...	16
Formby	1	...	..	...	1
Seamen's National Insurance Soc.	...	...	2	.	2
Lancashire County Council	...	...	1	...	1
Totals ...	58	11	15	1	85

Scarlet Fever: Cases admitted. —

AGES.	BOOTLE		LITHERLAND		FORMBY		Totals	Deaths
	Males	Females	Males	Females	Males	Females		
1—2 years	1	5	...	...	1	...	7	...
2—3 „	15	9	2	2	...	...	28	2
3—4 „	8	10	...	1	...	1	20	3
4—5 „	14	10	1	1	...	1	27	2
5—10 „	53	73	6	9	6	4	151	3
10—15 „	17	17	6	6	2	2	50	1
15—20 „	4	11	1	...	1	3	20	1
20—25 „	3	4	...	1	...	1	9	...
25—30 „	...	...	...	...	...	...	...	...
30 and over.	2	...	...	...	1	...	3	...
Totals	117	139	16	20	11	12	315	12
	256		36		23			

Deaths—Bootle 9; Litherland 3.

Diphtheria: Cases admitted.

AGES.	BOOTLE.		LITHERLAND		FORMBY		Totals	Deaths
	Males	Females	Males	Females	Males	Females		
Under 1 year	2	1	...		...	...	3	1
1—2 years	3	1	...	2	...	...	6	5
2—3 "	8	5	...	1	...	...	14	4
3—4 "	3	9	2	...	...	...	14	3
4—5 "	8	5	2	1	...	...	16	2
5—10 "	21	27	7	1	1	...	57	9
10—15 "	6	7	1	2	...	...	16	2
15—20 "	1	11	...	...	...	...	12	1
20—25 "	4	2	1	...	...	...	7	...
25 and over	3	4	...	1	...	..	8	...
Totals	59	72	13	8	1	...	153	27
	131		21		1			

Deaths:—Bootle 23; Litherland 4.

Tracheotomy.—Tracheotomy was performed on three patients for laryngeal diphtheria; one recovered.

Enteric Fever: Cases admitted.

AGES	BOOTLE		LITHERLAND		FORMBY		Totals	Deaths
	Males	Females	Males	Females	Males	Females		
7 years ...	1	...	...	...	...	..	1	...
14 ,, ...	1	...	...	...	...	...	1	...
29 ,, ...	...	1	...	...	...	...	1	...
43 ,, ...	...	...	1	...	..	...	1	1
55 ,, ..	1	...	...	...	...	...	1	...
	3	1	1	...	...	...	5	1
	4		1		...			

Deaths:—Litherland 1.

Age and sex distribution of "Other Diseases" admitted.

AGES	BOOTLE		LITHERLAND		FORMBY		Totals	Deaths
	Males	Females	Males	Females	Males	Females		
1—2 years	...	...	...	...	...	...	...	...
2—5 "	..	...	1	...	.	...	1	1
5—10 "	1	.	...	...	..	...	1	1
10—15 "	3	3	...	...	...	...	6	1
15—20 "	...	5	...	...	...	...	5	...
20—25 "	6	8	..	...	...	...	14	...
25—30 "	8	4	..	...	...	...	12	...
30—35 "	10	3	...	...	...	...	13	...
35 and over	26	7	...	...	...	...	33	1
	54	30	1	...	...	...	85	4
	84		1		...			

Deaths:—Bootle 3; Litherland 1.

In addition 11 cases of influenza, 2 of measles, 2 of mumps, and 1 of tonsillitis, were sent in by the Military Authorities.

Non-Zymotic Mortality.—Four deaths occurred from "Other diseases," viz., cerebro-spinal fever 2, measles 1, pneumonia 1.

The following tables show the numbers of cases notified as Scarlet Fever and Diphtheria which were re-classified after admission and the revised diagnoses:—

SCARLET FEVER ADMISSIONS.

Revised Diagnosis	Bootle	Litherland	Formby
Scarlet Fever & Diphtheria	6	2	—
Scarlet Fever & Chickenpox	2	1	—
Scarlet Fever & Measles ...	3	—	—
Mumps	1	—	—
Tonsillitis	2	—	—
Coryza	—	1	—
Totals ...	14	4	—

DIPHTHERIA ADMISSIONS.

Revised Diagnosis.	Footle	Litherland	Formby
Diphtheria & Scarlet Fever	5	2	—
Diphtheria & Measles ...	2	—	—
Diphtheria & Chickenpox .	1	—	—
Diphtheria & Pertussis ...	1	—	—
Tonsillitis	30	4	—
Scarlatina	3	—	—
Bronchitis	—	1	—
Pneumonia	3	—	—
Cerebro Spinal Fever ...	—	1	—
Totals ...	45	8	—

In addition one typhoid fever case proved to be miliary tuberculosis and one influenza, and one cerebro-spinal fever to be pneumococcal meningitis.

Patients in Hospital, December 31st, 1920.

	Scarlet Fever	Diphtheria	Cerebro Spinal Fever	Phthisis	Totals
Bootle	32	2	..	13	47
Litherland	2	2	1	..	5
Formby	4	..	...	...	4
Seamen's National Insurance Society ... ..	...	...	...	4	4
Lancashire County Council ..	...	...	...	...	...
	38	4	1	17	60

APPENDIX 21.

LOCAL POWERS RELATING TO PUBLIC HEALTH.

(1) ACTS OF PARLIAMENT ADOPTED BY THE COUNCIL.

Infectious Disease (Notification) Act, 1889.
 Infectious Disease (Prevention) Act, 1890, sections 5, 6, 14, 15, 16, 17, 18, 20 and 21.
 Public Health Acts Amendment Act, 1890, Part III.
 Housing of the Working Classes Act, 1890, Part III.
 Notification of Births Act, 1907.
 Sections 22, 23, 24, 33, 35, 44, 50, 51, 52, 53, 54, 55, 57, 61, 62, 63, 64, 65, 69, 70,
 71, 72, 73, 74, 75, 85, 90, 91, 93 and 95 Public Health Acts Amendment Act, 1907.

(2) BOOTLE CORPORATION ACTS AND ORDERS.

Bootle Corporation Act, 1890.
 Bootle Order, 1897; confirmed by the Local Government Board's Provisional Orders
 Confirmation (No. 16) Act, 1897, relative to Sanitary Improvements.
 Bootle Corporation Act, 1899.
 Bootle Order, 1914; confirmed by the Local Government Board's Provisional Orders
 Confirmation (No. 6) Act, 1914, relating to the substitution of moveable ashpits
 for fixed ashpits.
 Bootle Corporation Act, 1920.

(3) BYE-LAWS AND REGULATIONS IN FORCE IN THE BOROUGH.

New Streets and Buildings, 1869.
 Nuisances, 1887.
 Slaughter Houses, 1887.
 Good Rule and Government, 1888.
 New Streets and Buildings, 1890.
 Common Lodging Houses, 1894.
 Dairies, Cowsheds, and Milkshops, 1894 and 1902.
 Carriage of Offensive Matter through Streets, 1898.
 New Streets and Buildings and Alteration of Buildings, 1899.
 Removal of House Refuse and Nuisances, 1899.
 Structure of Walls of New Buildings, 1900.
 Structure of Foundations of New Buildings and Construction of New Streets, 1901
 Hospitals provided by the Corporation, 1904.
 Houses let in lodgings, or occupied by members of more than one family, 1904.
 New Buildings. Ashpits in connection with Buildings. Removal of House Refuse
 and Nuisances, 1907.
 New Streets (width), 1908.
 Construction of Walls of New Public Buildings and New Warehouse Buildings, 1910
 Parasitic Mange—Regulations as to cleansing and disinfection, 1910.
 Houses let in Lodgings, 1912.

