

[Report 1914] / Medical Officer of Health, Sheffield City.

Contributors

Sheffield (England). City Council.

Publication/Creation

1914

Persistent URL

<https://wellcomecollection.org/works/w7246j4z>

License and attribution

You have permission to make copies of this work under a Creative Commons, Attribution license.

This licence permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See the Legal Code for further information.

Image source should be attributed as specified in the full catalogue record. If no source is given the image should be attributed to Wellcome Collection.



Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>

4462

M.R.C. 6560

76



ANNUAL REPORT

ON THE

HEALTH

OF THE

CITY OF SHEFFIELD,

For the Year 1914.

HAROLD SCURFIELD, M.D., C.M.,

Medical Officer of Health.

MEDICAL RESEARCH
COUNCIL LIBRARY

Lent to Prof. Greenwood,
School of Hygiene.



ANNUAL REPORT

ON THE

HEALTH

OF THE

CITY OF SHEFFIELD

For the Year 1914.

HAROLD SCURFIELD, M.D., C.M.,

Medical Officer of Health.

ANNUAL REPORT

HEALTH

CITY OF SHEFFIELD

1900

City of Sheffield.

HEALTH COMMITTEE.

AS AT JANUARY 1st, 1914.

THE LORD MAYOR :

COUNCILLOR G. E. BRANSON.

CHAIRMAN :

COUNCILLOR S. ROBERTS, JUNR.

DEPUTY CHAIRMAN :

COUNCILLOR W. H. FORDHAM.

ALDERMAN E. HARGREAVES.

COUNCILLOR A. ASHMORE.

" W. BAKEWELL.

" W. BASHFORTH.

" J. BENSON.

" P. J. BENSON.

" H. BOLTON.

COUNCILLOR J. W. CROWTHER.

" A. G. W. DRONFIELD.

" H. W. JACKSON.

" J. KAYE.

" M. SHEPPARD.

" T. P. STOKES.

" O. C. WILSON.

Sub-Committees.

SANITARY SUB-COMMITTEE.

ALDERMAN E. HARGREAVES.

COUNCILLOR A. ASHMORE.

" J. W. CROWTHER.

" A. G. W. DRONFIELD.

COUNCILLOR W. H. FORDHAM.

" M. SHEPPARD.

" T. P. STOKES.

" O. C. WILSON.

SMOKE NUISANCE SUB-COMMITTEE.

COUNCILLOR W. BASHFORTH.

" J. BENSON.

" P. J. BENSON.

COUNCILLOR H. BOLTON.

" H. W. JACKSON.

" T. P. STOKES.

AUDIT SUB-COMMITTEE.

COUNCILLOR W. BASHFORTH.

" P. J. BENSON.

COUNCILLOR A. G. W. DRONFIELD.

" M. SHEPPARD.

TUBERCULOSIS SANATORIUM SUB-COMMITTEE.

ALDERMAN E. HARGREAVES.

COUNCILLOR W. BASHFORTH.

" J. W. CROWTHER.

COUNCILLOR W. H. FORDHAM.

" T. P. STOKES.

" O. C. WILSON.

CONTENTS.

	PAGE.
ACREAGE OF CITY AND SUB-DISTRICTS	2
ATMOSPHERIC POLLUTION INVESTIGATION	65—79
BABY CONSULTATIONS	41
BACTERIOLOGICAL AND CHEMICAL WORK	xiii.
BIRTHS AND BIRTH RATES	xv., 3, 4
BLACK SMOKE NUISANCE	44, 52
CANAL BOATS ACTS	39
CENSUS, 1911	x.
CEREBRO-SPINAL FEVER	xvii., 10, 11, 16
CHILD WELFARE	xiii., 40
CLOSET ACCOMMODATION AND DRAINAGE	x.
COMPARATIVE MORTALITY IN LARGE TOWNS	xxix.
CONVERSION OF PRIVIES INTO WATER CLOSETS	38, 48
DAIRY INSPECTION	57
DEATHS CHART	opposite 1
DEATHS AND DEATH-RATES	xv., 9, 10, 18—36
DISEASES OF ANIMALS ACTS	60
DISINFECTION	47
DRIED MILK SCHEME	xiii., 40
FACTORY AND WORKSHOP ACT	44, 49
FOOD	xi., 53, 54
GENERAL SANITARY WORK	46
HEALTH COMMITTEE	iii.
HOME WORK	50, 51
HOSPITAL ACCOMMODATION AND ADMISSIONS	xiii., 12, 16
HOUSES-LET-IN-LODGINGS	40
HOUSING ACTS	xiii., 38
ILEGITIMACY	3, 8
INFANT DEPOTS	xiii., 40
INFANT MORTALITY	xvii., 8
INFECTIOUS DISEASES—NOTIFICATIONS	xiv., 10—15
LARGE TOWNS, COMPARATIVE MORTALITY IN	xxix.
MAP OF SHEFFIELD	see cover of 1913 Report.
MARRIAGES	3
MATERNITY AND CHILD WELFARE	xiii., 40
MEAT AND FOOD INSPECTION	55
METEOROLOGY	37
MIDWIVES ACT	42
MILK SUPPLY	xi., xii., 57
MILK AND CREAM REGULATIONS, 1912	xi.
MORTALITY AT CERTAIN AGE PERIODS	9, 10, 11, 18—36
MUNICIPAL WARDS	1
NUISANCES	xiv., 46
OCCUPATIONS OF INHABITANTS	ix.
OFFENSIVE TRADES	44
OPHTHALMIA NEONATORUM	16
PHYSICAL FEATURES OF DISTRICT	ix.
POLIOMYELITIS	xvii., 10, 11, 16
POOR RELIEF	x.
POPULATION	xv., 1
PREVENTION AND TREATMENT OF TUBERCULOSIS	xviii.
RATES	x.
REGISTRATION SUB-DISTRICTS AND SECTIONS.—DESCRIPTION, POPULATION, VITAL STATISTICS, ETC.	xxvii.—xxviii., 6, 7
REGISTRATION SUB-DISTRICTS—INFECTIOUS DISEASE NOTIFICATIONS, ETC.	16
Do. DEATHS AND DEATH-RATES	5
Do. BIRTHS AND BIRTH-RATES	3
Do. INFANTILE MORTALITY	5
Do. POPULATION AND ACREAGE	1, 2
SALE OF FOOD AND DRUGS ACTS	xi., 53, 54

CONTENTS—CONTINUED.

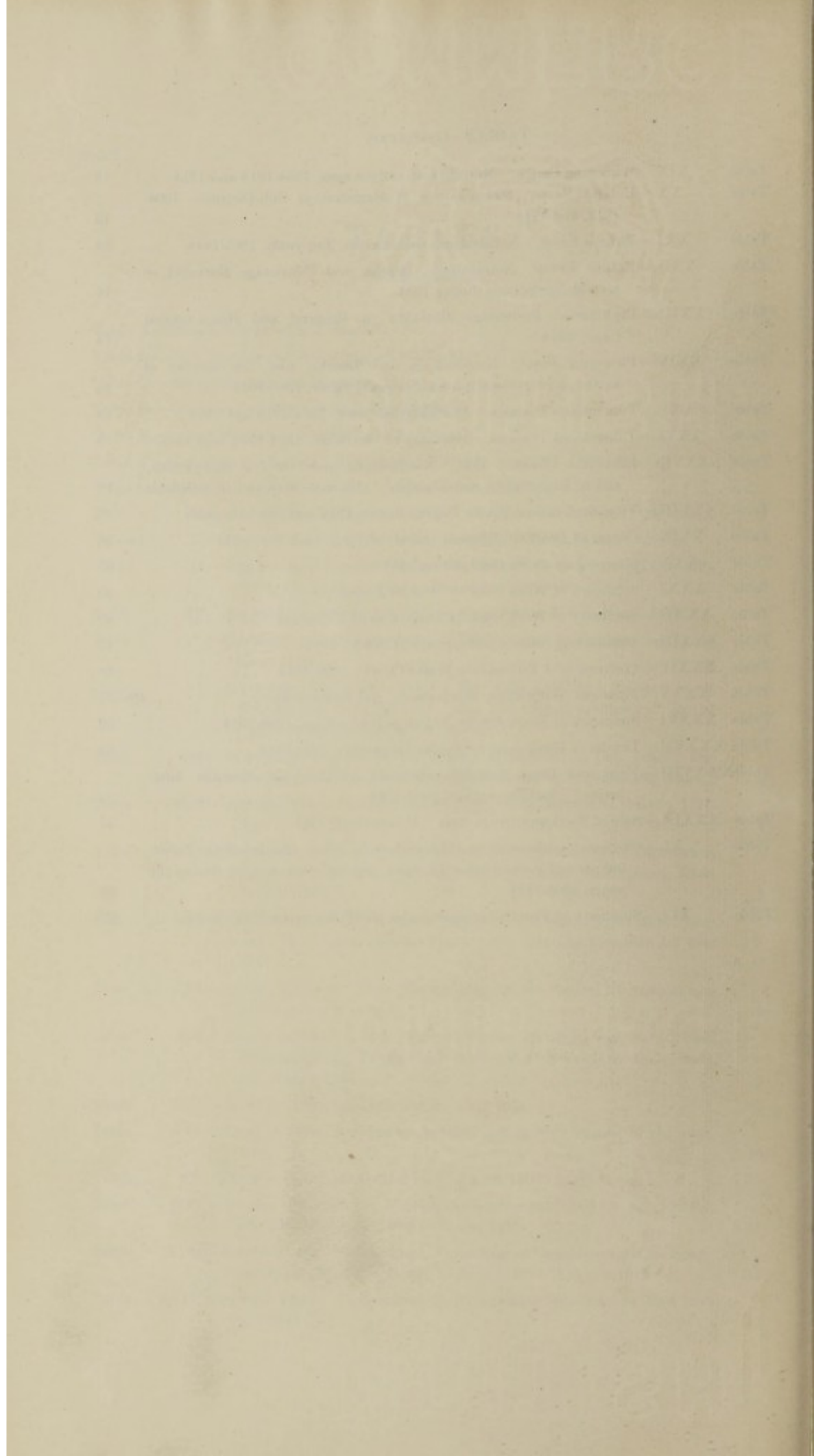
	PAGE.
SANITARY ADMINISTRATION	38—64
SCAVENGING	xi.
SCHOOLS	xi.
SEWERS AND SEWAGE DISPOSAL	x.
SLAUGHTER HOUSES AND MEAT INSPECTION	55
STAFF AND WAR SERVICE	xiv.
SUNSHINE	37, 74
TRANSFERABLE DEATHS AND BIRTHS	17
TROOPS AND INFECTIOUS DISEASE	xiv.
TUBERCULOSIS DISPENSARY, WORK OF	xviii.
TUBERCULOSIS OF LUNG AND PHTHISIS	xvii.—xxvi., 15, 16
TUBERCULOSIS AND MILK	59
TUBERCULOSIS WORK	39
TUBERCULOUS DISEASES	xvii.—xxvi., 15, 16
VETERINARY INSPECTOR'S REPORT	55
VITAL AND MORTAL STATISTICS	xv., 1, 17
WATER SUPPLY	x.
WOMEN INSPECTORS' WORK	40
WORKSHOP INSPECTION	44, 49
ZYMOTIC DISEASE—	
Seven Principal Zymotics	10—15, 16
Small Pox	xv., 5, 6, 8, 9, 10, 11, 16
Measles	xvi., 5, 6, 8, 9, 11
Scarlet Fever	xvi., 5, 6, 8, 9, 10, 12, 16
Diphtheria	xvi., 5, 6, 8, 9, 10, 14, 16
Enteric Fever	xvi., 5, 6, 8, 9, 10, 13, 14, 16
Diarrhoea and Enteritis	xvi., 5, 6, 8, 9
Whooping Cough	xvi., 5, 6, 8, 9, 13
Puerperal Fever	5, 6, 8, 9, 10, 15, 16

TABLES.

	PAGE.
Table A.—Elementary Schools of Sheffield	xi.
Table B.—Milk Samples and Percentage of Solids, 1914	xii.
Table C.—Bacteriological Examinations, 1910-4	xiii.
Table D.—Diarrhoea in relation to Soil Temperature	xvii.
Table E.—Infant Mortality—Sheffield and England	xviii.
Table F.—Tuberculous Diseases. Deaths in City and in Hospitals, 1889-1914	xxvi.
Table G.—Birth-rates and Death-rates in largest towns, 1914	xxix.
Table I.—Population ; Estimated Increase ; and Natural Increase ; 23 years... ..	1
Table II.—Registration Sub-Districts and Municipal Wards contained therein	1
Table III.—Population of Registration Sub-Districts at the Censuses of 1881, 1891, 1901, and 1911, and Estimated Mean Population, 1914	2
Table IV.—Acreage and Persons per Acre in Registration Sub-Districts, 1914	2
Table V.—Marriages and Marriage-rates in Sheffield and in England and Wales since 1888	3
Table VI.—Birth-rates during the year for the whole City, and for each of the Registration Sub-Districts. Also the total number of Births, Legitimate and Illegitimate, in each	3
Table VII.—Population, and Births and Deaths in Sheffield in past years ; also Birth-rates and Death-rates in Sheffield and in England and Wales... ..	4
Table VIII.—Mortality-rates, Sheffield and England, in Quinquennial periods, 1871-1914	4
Table IX.—Death-rates from All Causes, and from Zymotic and Tuberculous Diseases ; also Infant Mortality in Registration Sub-Districts, 1909-1913 and 1914	5
Table X.—Registration Sub-Districts and Sections. Estimated Population ; Density ; Death-rates and Birth-rates ; also Infantile Mortality for year 1914	6-7
Table XI.—Infant Mortality : Nett Deaths from Stated Causes at various ages under one year of age	8
Table XII.—Deaths and Death-rates from All Causes and from Specified Causes, Persons Living, Deaths and Death-rates at specified Age-periods, etc., during 1914	9
Table XIII.—Mortality at certain Age-periods, 1904-1914	10
Table XIV.—Cases of Infectious Disease notified during each month of the year, 1914	10
Table XV.—Cases of Infectious Disease notified since 1904 ; also average	11
Table XVI.—Measles. Mortality in Males and Females under certain Age-periods ; also Mortality-rates, 1904-1913 and 1914	11
Table XVII.—Scarlet Fever. Notifications, Percentage of Cases Removed to Hospital, Deaths, and Percentage Mortality, 1904-1913 and 1914	12
Table XVIII.—Scarlet Fever. Sickness-rate in Registration Sub-Districts, 1904-1913 and 1914	12

TABLES—CONTINUED.

	PAGE.
Table XIX.—Whooping Cough. Mortality at various ages, 1904-1913 and 1914 ...	13
Table XX.—Enteric Fever. Sickness-rate in Registration Sub-Districts, 1904-1913, and 1914	13
Table XXI.—Enteric Fever. Notifications each month, Ten years, 1905-1914 ...	14
Table XXII.—Enteric Fever. Notifications, Deaths, and Percentage Mortality at several Age-periods during 1914	14
Table XXIII.—Diphtheria. Percentage Mortality in Hospital and Home-treated Cases, 1914	14
Table XXIV.—Puerperal Fever. Notifications and Deaths, also the number of Births to every Death from Puerperal Fever, 1905-1914	15
Table XXV.—Tuberculous Diseases. Mortality ten years, 1904-1913 and 1914 ...	15
Table XXVI.—Tuberculous Diseases. Mortality in two Sexes, 1904-1913, and 1914...	15
Table XXVII.—Infectious Diseases, 1914. Notifications under several Age-periods, and in Registration Sub-Districts; also cases removed to Hospitals	16
Table XXVIII.—Vital Statistics of Whole District during 1914 and previous years ...	17
Table XXIX.—Causes of Death at different periods of life in each Sex, 1914 ...	18—36
Table XXX.—Meteorology at Sheffield during 1914	37
Table XXXI.—Summary of Work done by Women Inspectors	40
Table XXXII.—Summary of Work done by Inspectors of Nuisances	46
Table XXXIII.—Disinfecting Station. Summary of Work, 1914... .. .	47
Table XXXIV.—Conversion of Privies into Water-Closets, 1890-1914	48
Table XXXV.—Factories, Workshops, Work-places, and Home-work	49—51
Table XXXVI.—Summary of Black Smoke Nuisance Proceedings, 1904-1914	52
Table XXXVII.—Details of Work done by Smoke Inspectors, 1904-1914	52
Table XXXVIII.—Food and Drugs Samples purchased for Analysis; number Adulterated; and Percentage, 1905-1914	53
Table XXXIX.—Sale of Food and Drugs Acts. Proceedings, 1914	54
Table XL.—Carcases Condemned and Destroyed as being affected with Tuberculosis and various other Diseases, and for other reasons, during the years, 1905-1914	57
Table XLI.—Summary of Results obtained under the Tuberculous Milk Clauses ...	59



DEPARTMENT OF THE MEDICAL OFFICER OF HEALTH.

TOWN HALL, SHEFFIELD.

SEPTEMBER, 1915.

TO THE CHAIRMAN AND MEMBERS OF THE HEALTH COMMITTEE.

GENTLEMEN,

Before dealing with the Vital Statistics for the year 1914, it will be convenient to give a summary of statistical and other information with regard to the City and the work of my Department on the lines of the Local Government Board Memorandum.

Area and
Density.

The area of the City is 24,886 acres, including 533 acres in the Rivelin Valley added October 1st, 1914. The estimated population at June 30th, 1914, was 476,971 which gives a density of 19.2 persons per acre.

Physical
Features.

Sheffield is situated on the hilly ground forming the valleys of the Don and its tributaries. The altitudes may vary from the river level (200 feet where it enters the City at Wadsley and 100 feet where it leaves it at Tinsley) to 800 or 1,000 feet and more on the tops of the hills.

Most of the City is built on the coal measures which consist of alternating shales, sandstones, clays, and underclays.

The subsoil is somewhat retentive and clayey.

The prevailing winds are westerly to south-westerly.

The average rainfall is 30 inches, varying from 41 inches on the high moorlands on the west to 25 inches in the low-lying part on the east.

There were 1419 hours of bright sunshine in the west of the City at Weston Park during the year 1914, and 1061 hours in the east of the City at Attercliffe.

Occupations.

The principal occupations are the heavy iron and steel trades, and the cutlery and silver trades.

As regards occupations with a special influence on health, the grinders, approximately 4,000 in number, are specially liable to Tuberculosis of the Lungs.

Census, 1911 The following are some particulars from the Census of 1911 :—

Number of inhabited houses	...	...	...	98,870
Number of uninhabited houses	...	...	...	5,984
Number of persons per house	...	...	...	4·7
Percentage of females over 10 years of age who are occupied	...	...	...	27·8
Percentage of married women who are occupied	...	...	...	7·7
Number of female indoor servants per 100 families	...	...	...	12
Percentage of persons living more than two to a room	...	...	...	8·4

Poor Relief. About three-sevenths of the population of the City is in the Ecclesall Bierlow Union and four-sevenths in the Sheffield Union.

The percentage of pauperism to population as enumerated on January 1st, 1914, was as follows :—

In the Sheffield Union	...	...	...	1·6
In the Ecclesall Union	...	...	...	1·1
And in England and Wales	...	...	...	1·8

Rates. The rateable value on March 25th, 1915, was £1,989,700 15s. 0d. The Poor Rates, including the Education Rate for the year ending March 25th, 1915 were, in the Sheffield Union, 5s. in the £, in the Ecclesall Union, 4s. 10d. in the £, and the General District Rate for the same period was 4s. 6d. in the £.

Water Supply. Sheffield is supplied with soft water from the moorland gathering grounds of the head waters of the Don and its tributaries and (since 1913) of the Derwent and its tributaries. About one grain of chalk per gallon is added to the water to prevent its action on lead. Filtration through sand beds and mechanical pressure filters, with the addition of Aluminium Sulphate when necessary, is used to remove the peaty discoloration. The average daily consumption per head per day in the statutory district supplied by the Water Department was (1) for domestic and all other supplies not by meter, including water supplied for fires and waste, 16·14 gallons, as compared with 15·30 gallons for the previous year, and (2) for trade purposes by meter 12·77 gallons, as compared with 12·53 gallons for the previous year.

The number of houses in the City at the end of March, 1915, was 107,742, of which 106,213 were supplied with town's water, 18,998 of the latter having baths.

Sewers and Sewage Disposal. In 1901 there were 110 miles of stone or rubble sewers. At present, there are about 20 miles, the greater part of which are not in immediate need of reconstruction.

Closest Accommodation and Drainage. At December 31st, 1914, the approximate number of dwelling-houses in the city was 107,700. Of these 84,937 were supplied by water-closets, 3,830 by trough-closets, about 1,700 by slop-closets, about 16,600 by privy middens and about 580 by pail-closets.

In order to hasten the progress of the scheme for the conversion of privies, an extra draughtsman in the Privy-Conversion Sub-Department was appointed in February; and the contribution in cases where the owner does the work was increased from £3 to £4. By this means the work was

considerably accelerated and there was no appreciable falling off as the result of the outbreak of war at the close of 1914. Since the close of the Corporation financial year (March 25th, 1915), however, capital expenditure under this heading has been suspended by order of the Government.

During the year, the question of requiring a separate water-closet for the use of each new house has been under consideration and also the question of requiring similar provision in the case of existing houses, the privies of which have not been converted.

Scavenging.

The number of movable bins for house refuse in use in March, 1915, was 52,257 serving about 62,000 houses.

Apart from the 11,000 privies (approximately) which serve about 16,600 houses, there are 10,379 fixed ashpits for domestic refuse only, which were erected before 1903, and serve about 28,500 houses.

During the year ending March 25th, 1915, 41,800 tons of refuse were destroyed at Lumley Street Destructor (16 cells), 32,492 tons of refuse at Penistone Road Destructor (12 cells), 28,869 tons were sent by rail to Renishaw and Killamarsh tips, and 10,240 tons were disposed of to local farmers and at small local tips.

The total amount of the ashpit, bin and shop refuse dealt with during the year was 113,401 tons, which is equivalent to about $4\frac{3}{4}$ cwts. per head of the population.

Schools.

The following table gives some particulars of the public elementary Schools in the City.

TABLE A.—ELEMENTARY SCHOOLS.

	COUNCIL.	NON-PROVIDED.	TEMPORARY (Council).	TOTAL.
Number of Schools	64	42	7	113
Number of Departments ...	179	87	7	273
Accommodation	63,031	*20,531	1,236	84,798
Number on Rolls	61,958	*20,330	1,385	83,673

* Including Boys' and Girls' Charity Schools.

Milk Supply.

Thirteen cases of Scarlet Fever and five cases of Diphtheria were notified during the year at dairy farms or milkshops. In every case the patient was removed to hospital and in every case disinfection was carried out without the milk supply becoming affected.

Sample of Food and Drugs.

The number of samples taken during 1914 was 640, of which, 59 were adulterated. This gives an adulteration rate of 9.2 per cent., as compared with 6.4 per cent. for the previous year.

Milk and Cream Regulations, 1912.

Seven samples of preserved cream were taken and were reported to be in compliance with the regulations as to the permissible amount of boric acid.

The City Analyst has kindly supplied the following statement showing the average composition of milks taken during the year, 1914. Both monthly and quarterly averages are shown.

TABLE B.—MILK SAMPLES AND PERCENTAGE OF SOLIDS, 1914.

Month.	Number of Milk Samples Analysed.	Percentage of Solids found.	
		Fat.	Solids. Not Fat.
January	35	3·24	8·96
February	20	3·14	8·89
March	31	3·26	8·96
FIRST QUARTER	86	3·21	8·93
April	32	3·15	8·83
May	53	3·27	8·82
June	19	3·43	8·84
SECOND QUARTER	104	3·28	8·83
July	25	3·37	8·82
August	28	3·40	8·72
September	25	3·49	8·97
THIRD QUARTER	78	3·42	8·84
October	13	3·45	8·84
November	42	3·44	8·81
December	20	3·16	8·81
FOURTH QUARTER	75	3·35	8·82
Average for year, 1914	343	3·32	8·86
Standard adopted under the "Sale of Milk Regulations, 1912." ...	...	3·00	8·50

In considering the results shown in the foregoing table it must be borne in mind that the results include the adulterated samples and that many of the samples are taken in cases where adulteration is suspected. The average amount of milk fat shown in the table does not, therefore, represent the average amount contained in the milk produced or sold in the district of Sheffield.

Housing.

The total number of dwelling houses in March, 1915, was 107,742, of which 99,122 or about 92 per cent. are let at rentals not exceeding £26.

Probably 15,000 to 16,000 of the houses in Sheffield are of the back-to-back type.

The number of empty houses in March 1915 was 1,069, as compared with 1,493 in March 1914. Of the 1,069 empty houses 471 were houses commanding a rental of 5s. per week and under, free from rates, of which about half were not in a habitable condition. Of the remaining empty houses, 115 were houses commanding a rental of 5s. to 7s. 6d. per week, free from rates, and a few of these were not in a habitable condition.

According to the Chief Assistant Overseer's return for the year ended 25th March, 1915, 239 houses with rentals under £26 per year were removed from the rate books owing to Street Improvements, the operation of the Housing Acts, works extensions, and the erection of Picture Palaces, etc.; and 409 were added to the rate books, 170 being the nett gain to the city during the year of houses of this rental.

As regards houses at rentals over £26 per year, 4 were taken out of the rate books and 104 were added, leaving a nett gain of 100. (These figures do not take account of the 55 houses which were added to the city by the Rivelin extension).

The scarcity of houses is greater than ever, the absence of men on service being more than balanced by the billeting of soldiers, the accommodation of Belgian refugees and the provision for the increasing number of munitions workers. Councillor A. Truelove's second model lodging-house was opened on September 11th, 1914, for the use of soldiers, and constituted an admirable billet for two months. From December 1914, it has been in use for 264 lodgers, and that it is appreciated is shown by the fact that it has been full ever since.

Maternity and Child Welfare.

During 1914, the Health Committee had under consideration the question of extending the Baby Consultations so as to make them available for children between infancy and the age for admission to school.

Towards the end of the year a Special Sub-Committee had under consideration the circular of the Local Government Board on Maternity and Child Welfare.

In November, a conference was held with representatives of the Hospitals, the University, and the Education Committee, with a view to the provision of the necessary treatment for the babies and children brought to the Consultations.

Bacteriological Work.

The bacteriological work is carried out for the city by the Pathological Department of the Sheffield University.

The following table shows the number of examinations of material sent to the University during the past five years.

TABLE C.—BACTERIOLOGICAL EXAMINATIONS.

MATERIAL EXAMINED.	1910	1911	1912	1913	1914
Swabs for Diphtheria Bacilli	809	891	974	2104	1652
Serum for Typhoid Bacilli	128	250	245	153	150
Sputum for Tubercle Bacilli	1604	1966	2282	2997	2855
Milks for Tubercle Bacilli	675	645	684	782	767

Hospital Accommodation.

Twice during the year there was a shortage of Hospital Accommodation. In the early part of the year, this was due to the large number of cases of Scarlet Fever and Diphtheria which were notified.

In August there was again a shortage and accommodation could not be found for all the cases of Scarlet Fever and Diphtheria desiring admission.

Within a few months of the outbreak of the war, Winter Street Hospital which was in use at the time as a Hospital for persons suffering from Tuberculosis of the Lung, was taken over by the Military Authorities. Some of the Consumptives went home, others were removed to Crimicar Lane Hospital. As rapidly as possible a wooden pavilion to accommodate 48 Consumptives was erected on the site of Crimicar Lane Hospital, and was brought into use in January, 1915.

Nuisances.

Considerable attention was given to the question of the fly nuisance during the year.

In June, the City Council decided to make an order requiring all manure pits to be emptied weekly. Notice of this order was given to the users of manure pits, and a considerable number of circular letters were sent out recommending the following steps to be taken with a view to minimising the fly nuisance:—

- (1) The manure pit should be thoroughly emptied on each occasion.
- (2) The brickwork should be kept well pointed so that the manure pit has a smooth lining inside.
- (3) Every effort should be made to see that there are no ledges on the walls or roof of the manure pit which are left unswept at the time of emptying.
- (4) If the manure pit is provided with a closed cover, the cover should be kept shut except when the manure pit is being emptied or filled.
- (5) After emptying, the manure pit should be periodically limewashed.
- (6) The heap of manure should be sprinkled daily with quick-lime, chloride of lime, or sprayed with paraffin or a solution of borax.

During the year the by-law for the prohibition of spitting in certain public places was extended and made applicable to spitting on the paved footways of any public street.

Infectious Disease among the Troops.

Considering the number of troops quartered in Sheffield, there were not many cases of infectious disease among them. Between the outbreak of war and the end of the year, there were 4 cases of Scarlet Fever among soldiers, three of which apparently arose in Sheffield and one was imported.

There were four cases of Diphtheria, three of which were notified from the Base Hospital, and one from the Royal Hospital. There were three cases of Enteric Fever, all notified from the Base Hospital.

Four Sheffield soldiers were notified as suffering from Tuberculosis of the Lung, and one soldier whose home address was at Birmingham.

Staff—Special Arrangements made in consequence of the War.

Between the outbreak of war and December 31st, 1914, the following members of the Staff joined the Army:—

DATE OF ENLISTMENT.	OFFICIAL'S NAME.	NATURE OF DUTIES.
21 -8-14. ...	Reeve, Lillian (Miss) ...	Inspector of Nuisances.
26 -8-14. ...	Torrance, H. L. ...	Veterinary Inspector.
15 -9-14. ...	Henderson, Angus T. ...	Assistant Tuberculosis Inspector.
15 -9-14. ...	*Hague, Walter ...	Inspector of Nuisances.
15 -9-14. ...	Rideout, Frank O. ...	Clerk.
15 -9-14. ...	Shimeld, Harold ...	Clerk (Junior).
15 -9-14. ...	Smith, Arnold H. ...	Inspector of Nuisances.
30-10-14. ...	Walton, F. P. ...	Clerk (Junior).
2-12-14. ...	Brookes, F. C. ...	Draughtsman (Junior).
28-12-14. ...	Brooks, J. E. ...	Draughtsman.

* Discharged from H.M.S., March 9th, 1915, Medically Unfit.

VITAL AND MORTAL STATISTICS.

General.

The principal features of the Public Health statistics of the year 1914, as compared with those of the previous decade may be summarised as follows :

It was a heavy year for Measles and Whooping Cough and it was an average year for Scarlet Fever, Diphtheria, Enteric Fever, and Diarrhoea.

When we turn to other diseases there was an excessive number of deaths from Cancer, an average number of deaths from Tuberculosis of the Lung and other Tuberculous diseases, an average number from Respiratory diseases, the somewhat low figure for Bronchitis being balanced by a somewhat high figure for Pneumonia. The number of deaths from Cancer is generally, appreciably below the English figure, but during 1914, the rate was quite up to the English figure for the last decade.

Population

The mean estimated population for the year was 476,971.

The extension of the Borough by the inclusion of a portion of the Bradfield Parish on the north side of the Rivelin Valley, came into operation on October 1st. The population of this added portion was 267 at the time of the census. No change has been made in the estimated population to allow for this.

Since the outbreak of the war, there have been considerable fluctuations in the population. Some thousands of men enlisted, but a considerable number of them were billeted at home for some time after joining the army. The number of Sheffield residents who have left Sheffield to join the army has probably been balanced by the extraordinary number of soldiers who have been billeted in Sheffield and by the Belgian refugees. The Belgian refugees began arriving in Sheffield on September 15th, and at the end of the year they numbered about 1,300. At the time of writing they number about 3,000. The influx of additional munitions workers did not take place to any extent until after the close of 1914.

Births.

The number of births registered during the year was 13,023, and the transferable births numbered 11 inwards and 30 outwards. The nett births allocated to Sheffield, therefore, were 13,004, which was less than in the previous year by 284. This figure gives a birth rate of 27·3 per 1,000 persons living.

This birth-rate is the lowest ever recorded, being 0·9 per 1,000 lower than that for the previous year, and 2·8 lower than the average for the last decade. The average rate for the previous ten years was 30·1. The annual rates were as follows :—

1904	...	...	...	32·7	1909	...	...	...	29·8
1905	...	...	...	30·6	1910	...	...	...	28·1
1906	...	...	...	31·1	1911	...	...	...	27·7
1907	...	...	...	32·3	1912	...	...	...	27·7
1908	...	...	...	32·3	1913	...	...	...	28·2

Deaths.

The number of deaths of Sheffield residents during the year, after making corrections for transferable deaths occurring in public institutions and elsewhere was 7,790. This gives a death-rate of 16·3 per 1,000 persons living which is the highest since 1908, and has to be compared with 15·8 for the previous year and an average of 16·3 for the decade, 1904—13. The unfavourable comparison with 1913 is due to the fact that while the death-rate from Whooping Cough was higher by 0·35 per 1,000 in 1914, there was no diminution in the death-rate from Measles as compared with the previous year. The annual rates for the last ten years were as follows :—

1904	...	...	...	17·2	1909	...	...	...	15·9
1905	...	...	...	17·6	1910	...	...	...	14·2
1906	...	...	...	17·3	1911	...	...	...	16·1
1907	...	...	...	17·8	1912	...	...	...	14·3
1908	...	...	...	16·6	1913	...	...	...	15·8

Small-Pox.

There was no case of Small pox notified during the year.

Measles. A high death-rate from Measles has to be recorded again, the death-rate being 0·77 as compared with 0·77 for 1913, and 0·65 for the decade, 1904—13.

At the opening of the year 1913, a Measles epidemic was at its height, and at the opening of 1914, Measles was again somewhat prevalent and became actually epidemic during March, April, May, June and July. The interval between the last two epidemics was, therefore, unusually short.

In my Annual Report for 1913, attention was drawn to the altered behaviour of Measles. From 1894 to 1903, the death-rate from Measles was fairly constant, year by year. From 1903 to 1911, a high and a low death-rate alternately was the tendency, with an interval between the epidemics of about 18 months. Since 1911, the tendency has been for the death-rate to be more constant, year by year, and for the intervals between the epidemics to be shorter.

Scarlet fever. The death-rate from Scarlet Fever was 0·19 per 1,000 of the population, which has to be compared with 0·16 for 1913, and an average of 0·18 for the decade, 1904—1913.

The attack-rate was 6·5 per 1,000. The average attack-rate for the decade, 1904—1913, was 5·5 per 1,000 persons living per annum.

The history of Scarlet Fever in Sheffield has been in recent years something as follows. The mortality from this disease was low in 1894 and 1895, and high in 1896 and 1897. There was a decline in 1898 and a rise again in 1899. It remained low from 1900 to 1902, and then became high during the five years 1903—1907, the climax being reached in 1906 when the death-rate was 0·53. During the five years 1908—1912 the mortality from this disease was less than in any of the years mentioned above, and during 1913 and 1914, it has again become more fatal but not nearly so fatal as during the period 1903-7, when the death-rates were as follows:—1903, 0·24; 1904, 0·21; 1905, 0·23; 1906, 0·53; 1907, 0·23.

Diphtheria. The death-rate from Diphtheria was 0·14 per 1,000 of the population. This rate is the highest since 1907 and is higher than the average for the previous 10 years by 0·03.

The number of cases of sickness reported during 1914 was 850, which is the highest number since the year 1902, and is 350 above the average of the previous 10 years. Some of the increase in cases reported during recent years is due to the more accurate diagnosis of slight attacks as a result of an increasing use of the bacteriological facilities provided through the University.

Whooping Cough. The mortality from this disease was at the rate of 0·50 per 1,000 living, which is 0·35 higher than that for 1913, and 0·18 higher than the average for the previous 10 years.

Typhoid Fever. The death-rate for 1914 was 0·06 per 1,000 which ranks with those for 1913 and 1910, as the lowest on record.

The number of Typhoid cases notified during the year was 113, which compares with 74 for the previous year and with the exception of 1913, is the smallest number on record.

Diarrhœa and Enteritis under two years of age. The death-rate under two years from Diarrhœa and Enteritis during 1914, was 1·1 per 1,000 living. This has to be compared with 1·0 for 1913, 0·42 for 1912, and 1·32 for 1911. Seeing that the summer of 1914 was hotter than that of 1913 there is some satisfaction in the fact that the death-rate from Diarrhœa and Enteritis was not appreciably higher in 1914 than 1913. The temperature of the ground at 4 feet below the surface during 1914, remained for 9 weeks over 56°, whereas, during 1913, it never reached 56°.

The following Table shows the average soil temperature during August, and the total Diarrhoea deaths from the end of June to the end of October for the past seventeen years :—

TABLE D.—DIARRHOEA IN RELATION TO SOIL TEMPERATURE.

YEAR.	Average Soil Temperature at 4 feet during August.	Total Deaths from Diarrhoea and Enteritis, June to October.
1898	55.5	935
1899	57.5	884
1900	57.3	867
1901	57.6	964
1902	54.4	338
1903	55.1	739
1904	56.6	678
1905	56.7	791
1906	56.2	923
1907	54.8	535
1908	55.8	526
1909	55.4	372
1910	55.5	430
1911	58.3	607
1912	55.5	186
1913	54.9	376
1914	56.5	357

Cerebro-spinal fever.

During the year there were four cases of Cerebro-Spinal Fever notified. One of these cases died in the City Hospital, and the death was found to be due to Tuberculous Meningitis. Of the remaining three, one only was verified by lumbar puncture and proved fatal. With regard to the two other cases, there was some doubt as to the diagnosis.

Acute Poliomyelitis.

27 cases of Acute Poliomyelitis were notified during the year. Five of these cases terminated fatally. Of the 22 who recovered, 15 showed some paralysis, probably permanent, of one or more groups of muscles.

Tuberculous Diseases.

The death-rate from all Tuberculous diseases was 1.68 per 1,000 persons living, the rate during the decade 1904-1913, being 1.58. The deaths from Tuberculosis of the Lung alone gave a rate of 1.27 per 1,000 which compares with a rate of 1.19 for the decade, 1904-1913.

948 new cases of sickness from Tuberculosis of the Lung were notified during the year as compared with 1,033 in 1913, 981 in 1912, 836 in 1911, 667 in 1910, and 712 in 1909.

By a General Order of the Local Government Board, dated 19th December, 1912, all forms of Tuberculosis became compulsorily notifiable from 1st February, 1913. This has had the effect in Sheffield of bringing to the notice of the Medical Officer of Health 822 cases of Tuberculosis of other organs than the lung during 1913, and 458 during 1914. Further particulars with regard to the death-rates from Tuberculous diseases since 1904, are shown in Tables XXV. and XXVI.

Infant Mortality.

The Infant Mortality rate for 1914 calculated in the usual way is 132 per 1,000 births as compared with 128 per 1,000 births for 1913. The prevalence of Whooping Cough and the renewed prevalence of Measles have helped to keep up the Infant Mortality rate.

The following table shows the Infant Mortality rates for the last 18 years in the City of Sheffield, and the excess over the English rate for each year :—

TABLE E.—INFANT MORTALITY.—SHEFFIELD AND ENGLAND.

YEAR.	Infant Mortality.	Excess over English rate.	YEAR.	Infant Mortality	Excess over English rate.
1897	196	40	1906	158	26
1898	195	35	1907	145	27
1899	194	31	1908	141	21
1900	200	46	1909	119	10
1901	202	51	1910	127	22
1902	150	17	1911	141	11
1903	181	49	1912	107	12
1904	158	13	1913	128	15
1905	166	38	1914	132	27

WORK OF THE TUBERCULOSIS DISPENSARY.

(BY JOHN RENNIE, M.D., TUBERCULOSIS MEDICAL OFFICER, SHEFFIELD.)

The number of notifications of tuberculosis of the lung received during 1914 was 948 as compared with 1,044 during 1913, a decrease of 96. This decrease is due to the cautious attitude which was adopted with regard to the notification of non-infectious cases, especially children, under treatment and observation at the Dispensary. However, this policy does not appear to be entirely satisfactory seeing that by the fuller investigation which is made on notification, the source of infection is often found and an opportunity is afforded of inspecting the home and of dealing with unsatisfactory conditions.

In 422 of the above 948 cases, tubercle bacilli have been found in the sputum as compared with 419 out of 1,044 for 1913. The number of infectious cases (*i.e.*, cases in which tubercle bacilli have been found in the sputum at some period of the illness) known to be living in the City, on December 31st, 1914, was 618, including 11 children under 15 years of age. No doubt this number will increase as years go on owing to the more systematic use of the facilities provided for examination of the sputum.

The whole success of treatment depends upon early diagnosis, and we must recognise that a very large proportion of the cases in which the diagnosis is deferred until tubercle bacilli are demonstrated in the sputum may really be classified as cases of advanced disease. Hence, it follows that the larger the proportion of cases diagnosed as definite tuberculosis by clinical evidence without the finding of tubercle bacilli in the sputum, the greater will be our success in the treatment and prevention of the disease. This fact is being recognised by many medical practitioners who continue to send to the Dispensary suspicious cases notwithstanding the negative results of sputum examination, and a very large proportion of the early cases is found in this way. The other important method of finding early cases is the examination of "contacts."

The source of infection was investigated in 358 of the working males notified during the year, and it was found that home infection could only be traced in 32 per cent. of the cases. It may thus be inferred that occupation and occupational conditions play a very large rôle in the causation and spread of the disease, and when we consider the very strenuous times and abnormal conditions prevailing amongst the workers in Sheffield at the present time we may expect that there will be an upward tendency in the incidence of the disease as compared with that for former years.

The number of deaths from tuberculosis of the lungs of Sheffield residents occurring in the city during the year was 570 which is equal to 60 per cent. of the notifications received

Table A shows the marked difference between the male and female death-rates in Sheffield, the males being 66 per cent. of the total deaths and the females 34 per cent.

TABLE A.—Deaths from Tuberculosis of the Lung occurring during 1914, divided into sex and age groups showing whether sputum examined, and result.

AGE PERIODS.	Sputum examined.				Sputum not examined.		TOTALS.	
	Tubercle Bacilli found.		Tubercle Bacilli not found.		Males.	Females.	Males.	Females.
	Males	Females	Males.	Females.				
Under 1 year	—	—	—	—	—	2	—	2
1 year and under 5	—	—	—	—	9	7	9	7
5 years and under 15	1	4	—	1	3	12	4	17
15 25	44	25	2	1	13	15	59	41
25 45	107	50	11	3	44	34	162	87
45 65	85	18	10	1	31	16	126	35
65 years and upwards	5	—	5	—	6	5	16	5
TOTALS	242	97	28	6	106	91	376	194

The table also shows that the diagnosis was confirmed by tubercle bacilli being demonstrated in the sputum in 59·45 per cent. of the cases, and in 6 per cent. the sputum was examined but the bacillus was not found. In 34·55 per cent. the sputum was not examined. This last high percentage is no doubt largely due to the fact that 111 of those cases died before or within one month of notification. It is very desirable for statistical purposes that the sputum of every case, even though advanced, should be examined.

The following table (B) shows the length of time between notification and death.

TABLE B.—Deaths from Tuberculosis of the Lung occurring during 1914, divided in'o age periods showing length of time between notification and death.

AGE PERIODS.	PERIOD BETWEEN NOTIFICATION AND DEATH.												Total Deaths.
	Under 1 month	1 month & under 2 months	2 months & under 3 months	3 months & under 4 months	4 months & under 6 months	6 months & under 1 year	Total under 1 year	1 year & under 2 years	2 years & under 3 years	3 years & under 4 years	4 years & under 6 years	6 years and over	
	Under 1 year	2	2	
1 year and under 5	14	1	...	...	...	1	16	...	...	...	...	...	16
5 years and under 15	10	2	1	1	...	6	20	1	...	...	...	...	21
15 25	17	9	6	6	4	18	60	12	5	3	12	8	100
25 45	67	15	17	4	18	27	148	39	24	14	14	10	249
45 65	66	14	8	6	14	23	131	14	8	3	4	1	161
65 years & upwards	12	2	...	1	3	1	19	1	1	...	...	...	21
TOTALS	188	43	32	18	39	76	396	67	38	20	30	19	570
PERCENTAGES	33%	7·5%	5·6%	3%	7%	13·3%	69·4%	12%	6·6%	3·5%	5·2%	3·3%	100%

It is seen that 33 per cent. died before or within one month of notification and 69·4 per cent. of the total deaths occurred within one year. The large percentage dying within one month of notification is appalling because the majority of the 188 cases must have been unaware during the greater portion of their illness of the true nature of their disease and, therefore, have taken none of the necessary precautions against the spread of infection. With regard to the 19 or 3·3 per cent. who had been notified for six years or over, 8 lived seven years, 6 lived eight years, 3 lived ten years, and 2 lived eleven years. Tubercle bacilli had been found in the sputum of 6 cases seven years previously, and in the sputum of 3 cases eight years previously.

The Women Inspectors periodically visit the homes of the infectious notified cases of tuberculosis of the lung and make reports to the Tuberculosis Medical Officer. The total number of such visits paid during the year was 5,735. During October the Tuberculosis Medical Officer reviewed the whole of the cases on the Women Inspectors' visiting lists and withdrew all cards where it appeared that no object was to be served by continued visits by the Woman Inspector.

Three flats in Hawley Street have been fitted up by the Corporation for temporary use as a Dispensary. As time goes on, the accommodation, especially the waiting rooms, is found to be more and more inadequate. The Dispensary is open on week-days from 9.0 a.m. to 5.30 p.m., except on Saturday, when it is open from 9.0 a.m. to 12.30 p.m., and patients are seen on Mondays, Wednesdays and Thursdays in the morning and afternoon, on Tuesdays and Fridays in the afternoon and evening, and on Saturday morning. During the year I was assisted by Dr. William MacAdam, and Dr. James Carrick was appointed in August, as Second Assistant.

Those who attend the Dispensary may be divided into (a) cases seen for the first time, and (b) old cases. The total number of attendances of all cases during the year was 17,016.

New Cases.—Table C gives particulars of the cases at the time of their first visit to the Dispensary and the result of examination (arranged under three headings)—(a) cases notified prior to their first attendance at the Dispensary (b) "suspects," i.e., indefinite cases (not notified) sent up by private practitioners, School Medical Officers, etc. for diagnosis, and (c) persons who have been in close contact with notified consumptives.

TABLE C.—Giving particulars of new cases examined during year and result of examination.

SEX AND AGE PERIODS.	(a)—NOTIFIED CASES.			(b)—"SUSPECTS."			(c)—"CONTACTS."		
	Number Examined.	Put on Treatment or Supervision.	Found not Tuberculous.	Number Examined.	Put on Observation.	Found not Tuberculous.	Number Examined.	Put on Observation.	Found not Tuberculous.
ADULTS (15 yrs. and upwards)									
Males	297	276	21	151	138	13	77	32	45
Females	126	104	22	94	85	9	240	66	174
Total Adults	423	380	43	245	223	22	317	98	219
SCHOOL CHILDREN (5 yrs. and under 15)									
Males	48	36	12	75	64	11	420	114	306
Females	47	44	3	83	74	9	403	88	315
Total School Children	95	80	15	158	138	20	823	202	621
INFANTS (under 5 years)—									
Males	6	5	1	2	1	1	111	15	96
Females	9	6	3	1	1	...	129	20	109
Total Infants	15	11	4	3	2	1	240	35	205
Total Adults, Sch. Ch. & Infants.	533	471	62	406	363	43	1,380	335	1,045

As the result of the first examinations 62 cases which had been notified for several years were discharged as they showed no active signs of tuberculosis. The difficulty of early diagnosis will be realised when it is seen that only 43 of the 406 "suspects" seen were discharged as non-tubercular on first examination. With regard to the examination of "contacts," 24 per cent. of the total number examined were put under observation. It will be noted that about one third

of the adult "contacts" were found suspicious as compared with about one quarter of the school age "contacts" and one seventh of the infant "contacts." This is undoubtedly due to the fact that there is very little difficulty in getting children to come up for examination as "contacts"; whereas many adults do not present themselves at the Dispensary unless they have reason for supposing that they are not quite well.

Old Cases—Notified :—The number of notified cases who attended the Dispensary for treatment and supervision during the year was 1,119.

The method of dealing with such cases is as follows—on the notification of a case of tuberculosis of the lung, one of the Male Tuberculosis Inspectors visits the home and obtains particulars with regard to the history of illness, house, sleeping accommodation, "contacts," possible source of infection, etc., and gives advice with regard to the prevention of the spread of infection. If the patient desires treatment from the Corporation an appointment is made for him to be examined at the Dispensary. Appointments are also arranged for the examination of the "contacts." Practically all cases are advised to go into the sanatorium or hospital for a short period of treatment and education. During the year the Corporation was able to give a short period of sanatorium treatment to all hopeful cases desiring such; and, until Winter Street Hospital was requisitioned by the War Office, on October 19th, also to a very large percentage of the cases for whom isolation and nursing are the chief grounds for recommending institutional treatment. After October 19th, the patients in this hospital were either discharged or transferred to the Union Hospitals, and the Tuberculosis Medical Officer together with the Chief Woman Inspector visited all the homes and reported on the conditions to a special sub-committee appointed to deal with the matter. Weekly payments of money were afterwards made to those who were in want.

With regard to the hopeful cases: these cases are given two or three months sanatorium treatment with a view to education and the restoration of their working capacity. While they are in the sanatorium, tuberculin or other suitable form of treatment is begun and is continued at the Dispensary after their discharge. In order that the treatment can be proceeded with at the Dispensary it is necessary for the patient at first to attend twice weekly, weekly or fortnightly, and at gradually increasing periods as the condition becomes more satisfactory. Other cases treated at the Dispensary are those who do not desire institutional treatment or for whom institutional treatment is either not necessary or not beneficial. During the year arrangements were made for the supply of medicines by a local chemist and prescriptions are given to any patient requiring medicine during the course of treatment.

The majority of the cases under treatment at the Dispensary are working and every effort is made by treatment and supervision to keep their working capacity up to the full. Owing to the chronic nature of the disease patients sometimes have to be kept under treatment for periods extending over years, and it is, therefore, difficult to give results of treatment until a considerable time has elapsed and the truth of the results has been tested by time. Immediate results on discharge from the sanatorium are undoubtedly very fallacious and misleading. Next year it is hoped that we shall be able to give the first results of treatment.

The total number of attendances of notified cases made during 1914 was 13,421, while the number of cases on treatment and supervision on December 31st, 1914, was 987.

Old Cases—"Suspects" under observation but not notified. 1,138 suspected cases attended during the year. These consisted of 440 who were under observation on January 1st, 1914, and 698 new cases—363 from the "suspects" and 335 from the "contacts" (see Table C). These cases attended at periods varying from one week to six months for the purpose of treatment and observation, and, when deemed necessary, they were also admitted to the observation beds in the hospitals. Table D gives particulars in sex and age groups of those observed during the year.

TABLE D.—Giving particulars of "Suspects" observed during 1914.

SEX AND AGE PERIODS.	On Observation, 1st Jan. 1914	Added during year.	Total number Observed.	Number diagnosed during year as Tuber- culous.	Free from Tuber- culosis.	On Observation, 31st Dec. 1914.
ADULTS—						
Males	55	170	225	65	116	44
Females	99	151	250	33	138	79
Total Adults	154	321	475	98	254	123
SCHOOL CHILDREN—						
Males	126	178	304	17	137	150
Females	123	162	285	13	133	139
Total School Children	249	340	589	30	270	289
INFANTS—						
Males	17	16	33	0	22	11
Females	20	21	41	2	20	19
Total Infants	37	37	74	2	42	30
Total Adults, Schl. Ch. and Infants. ...	440	698	1,138	130	566	442

In the course of the year, 130 of the suspected cases were definitely diagnosed as suffering from tuberculosis and were notified. 116 of these were first placed under observation in 1914; the remainder (14) had been under observation previously; and 28 of the 130 were examined in the first instance as "contacts." 566 were found negative and discharged, 256 being 1914 cases and 310 of previous years; while 306 were "contacts" and 260 were "suspects." It will be noted that a much greater percentage of adults than children was found to be definitely tuberculous. This is due, partly, to the child's being more susceptible to many simple catarrhal conditions of the chest which often simulate a tuberculous infection, and partly to the fact, that even definite tuberculosis in the child may remain quiescent for a long period, the complete diagnosis being perforce deferred. The recuperative power of the child is also very marked and undoubtedly under treatment many cases of infection are definitely arrested.

The total attendances made by the "suspects" during 1914 was 2,445, while there remained under observation on December 31st, 1914, 442 "suspects."

The work of the Dispensary as regards patients of school age is carried out in close co-operation with the School Medical Department. Wednesday, both morning and afternoon, and Saturday morning are set aside for the examination and treatment of school children. One of the School Medical Officers assists the Tuberculosis Medical Officers and there is an interchange of records between the two Departments, overlapping of work being thus largely prevented. 334 of the notified cases, 407 of the "suspects," 823 of the "contacts" examined or treated during the year at the Dispensary were children of school age and their total attendances were 3,284. 20 places at the Open Air Recovery School, Whiteley Woods, were set aside by the School Medical Officer for children under treatment at the Dispensary. The children were chiefly those with all the signs and symptoms of tuberculous infection of the chest glands but without any marked invasion of lung tissue and who were in a non-infectious condition. Tuberculin was given to suitable cases. Two of the children were cases of bronchiectasis for whom life at any ordinary school had previously been impossible, and, as the result of nine months spent at Whiteley Woods, cough and expectoration were so diminished that they have been enabled to resume attendance at an ordinary school. Practically all the tuberculous children treated at the Open Air School had previously received a short course of sanatorium treatment in the observation wards of the

Corporation hospitals. It would be a great advantage if a much larger number could be dealt with in this way, the number at present being limited to 20, as this method of a short stay in the sanatorium where the child can be closely observed followed by treatment at the Open Air School seems to be the most rational one for non-infectious cases of school age, when viewed from economic and practical standpoints. The Open Air School is of course not suitable for the infectious type of case.

Residential Institutional Treatment.—The admission of all patients to the Corporation hospitals for tuberculosis is arranged and controlled from the Dispensary.

Winter Street Hospital, with accommodation for 96 patients was largely used for isolation purposes and for cases requiring special nursing, 70 beds being used for males and 12 for females while one ward of 14 beds was set aside for observation purposes for male patients. This hospital was taken over by the War Office in October and gradually cleared of patients. Hospital accommodation was therefore very much reduced until the beginning of January 1915, when new accommodation was provided for 48 cases at Crimicar Lane Sanatorium.

Crimicar Lane Sanatorium (accommodation for 30 male patients).—This institution was used for the best type of afebrile cases who were mostly able to do work and take exercise and in whom a restoration to full working capacity was expected.

Commonside Hospital (accommodation for 28 female patients).—This hospital was used for all types of cases, eight beds being set aside for observation purposes.

The following gives particulars of the numbers treated in the three hospitals during the year—

	Insured.	Uninsured.	Children.	Total.
Under treatment and observation, 1st January, 1914.	78	42	3	123
Admitted during year	381	126	91	598
Total treated	459	168	94	721
Discharged during year	362	104	89	555
Died during year	54	43	—	97
Under treatment and observation, 31st December, 1914	43	21	5	69

The average length of stay of the adults discharged was 75 days and of the children 36 days. As far as institutional treatment is concerned the early cases are easily dealt with, but the difficulty lies in treating and isolating the advanced cases. The average stay of the 97 cases who died in hospital was 88 days.

Of those admitted during the year 309 were admitted directly into either hospital or sanatorium beds and 289 into observation beds.

Observation Beds.—With a view to early diagnosis, the greatest advance in the organisation of the work was the establishment at the close of 1913, of observation beds in Winter Street and Commonside Hospitals. It was thus made possible for the Tuberculosis Medical Officers to closely observe all cases requiring special investigation. These beds form the connecting link between the Dispensary and institutional treatment, their uses being

- (a) For the purpose of definite diagnosis where such is impossible at the Dispensary,
- (b) For the confirmation of diagnoses made at the Dispensary,
- (c) For the observation of definite cases with a view to ascertaining the most suitable form of treatment, and
- (d) For the treatment of acute conditions arising during Dispensary treatment.

For the purpose of diagnosis and confirmation of diagnosis 277 cases were admitted and the following table gives the source of the cases divided into sex and age groups.

TABLE E.—Giving the source of the cases admitted to observation beds during 1914.

SEX AND AGE GROUPS.	Notified Cases.	SUSPECTED CASES.					Total observed.
		Private Practitioners	School Medical Officers	Women Inspectors, &c.	Contacts.	Total Suspects.	
MALES—							
Adults	83	41	...	3	4	48	131
Children	14	5	10	3	2	20	34
Total Males	97	46	10	6	6	68	165
FEMALES—							
Adults	34	22	...	12	8	42	76
Children	12	3	14	2	5	24	36
Total Females	46	25	14	14	13	66	112
Total Males and Females ...	143	71	24	20	19	134	277

It will be seen that 25 per cent. of the admissions were children. This represents 77 per cent. of the total children admitted to the hospitals, and is what might be expected owing to the difficulty of diagnosis in children. 143 notified cases were admitted for confirmation of diagnosis previous to their undergoing sanatorium treatment. Of the remainder (134) 53 per cent. were sent up by private practitioners. The practice of practitioners sending up "suspects" for the purpose of thorough investigation in the observation wards is one of the most encouraging results of the Dispensary organisation. It is to be hoped that larger numbers of practitioners will make use of this department of our anti-tuberculosis scheme, for it is only by their active co-operation that we can hope to use the observation beds to the best advantage, *i.e.*, in the definite diagnosis of larger numbers of early cases. Practitioners are informed of the result of our investigations in the observation ward and on what basis the diagnosis is made.

As the result of observation 145 cases were found to be definitely suffering from tuberculosis, and 132 were found not suffering. In all cases where sputum could be obtained, one or more examinations of such were made. 154 of the 277 cases were found to have sputum and as the result of its examination, tubercle bacilli were demonstrated in 54 cases while 100 proved negative. The number of examinations of sputum made was 384.

With regard to the positive cases: in 54 cases the diagnosis was based on the finding of tubercle bacilli in the sputum, six being children under 15 years of age; in 36 cases the physical signs were considered quite definite although tubercle bacilli could not be found, and in 55 cases the presence of indefinite physical signs was confirmed by the obtaining of a definite focal re-action to the subcutaneous tuberculin test. 88 of these cases were transferred to sanatorium or hospital beds and 57 to Dispensary treatment.

With regard to the negative cases : 37 gave no focal reaction to a subcutaneous tuberculin test and 95 were found either to be normal or suffering from other diseases as follows :—

NORMAL. 28.

Bronchitis and Emphysema	24	Hepatic Cirrhosis	2
Heart Disease	8	Locomotor Ataxy	1
Bronchiectasis	7	Typhoid Fever	1
Arterio Sclerosis	5	Lead Poisoning	1
Bright's Disease	4	Atrophic Rhinitis	1
Pneumonia	4	Pneumokoniosis	1
Neurasthenia	3	Pharyngitis	1
Syphilis	2	Malignant Disease of Pylorus	1

Malingerer 1.

The only symptom of the malingerer was "hæmoptysis." When he had been under observation for some time, it was found that the supply of blood came from a neighbouring slaughter house.

The average length of stay in the observation beds was 19·4 days, and during a full year about 400 cases may be dealt with in 22 beds.

The economic value of observation beds is seen from the fact that only 88 cases out of 277 were considered to require further institutional treatment in the sanatorium proper, and the system of putting every doubtful case in an observation bed for a definite diagnosis guarantees the best use being made of the general sanatorium beds.

TABLE F.—TUBERCULOUS DISEASES. DEATHS IN CITY AND IN HOSPITALS, TOGETHER WITH PERCENTAGE ALSO DEATH-RATES DURING YEARS 1889-1914.

YEARS.	DEATHS FROM PHTHISIS (CHIEFLY TUBERCULOSIS OF LUNG).					Whole City.	Percentage occurring in Hospitals.	Death-rate from Tuberculosis (all forms) per 100,000 living
	HOSPITALS.							
	Union.	Municipal.	Voluntary.	Total.				
1889	62	1	10	73	552	13.2	257	
1890	75	—	8	83	618	13.4	271	
1891	81	2	9	92	551	16.7	254	
1892	59	—	10	69	459	15.0	225	
1893	74	—	12	86	552	15.6	244	
1894	72	1	14	87	502	17.3	211	
1895	76	—	15	91	473	19.2	227	
1896	56	1	11	68	453	15.0	188	
1897	90	—	16	106	522	20.3	201	
1898	98	—	14	112	448	25.0	183	
*1899	117	1	17	135	502	26.9	210	
1900	135	1	14	150	539	27.8	202	
1901	142	1	19	162	580	27.9	207	
1902	121	—	10	131	491	26.7	181	
†1903	142	2	22	166	573	29.0	211	
1904	154	1	15	170	536	31.7	188	
1905	135	—	14	149	490	30.4	164	
1906	126	—	17	143	452	31.6	152	
1907	146	—	16	162	524	30.9	170	
1908	214	3	14	231	564	41.0	178	
1909	174	3	13	190	524	36.3	156	
1910	166	4	9	179	455	39.3	139	
1911	193	3	12	208	557	37.3	159	
1912	211	11	14	236	595	39.7	167	
1913	155	71	11	237	585	40.5	164	
1914	128	96	10	234	607	38.6	168	

* 1899. Voluntary Notification introduced November, 1899.

† 1903. Compulsory Notification introduced November, 1903.

The deaths recorded under Municipal Hospitals previous to 1908 occurred in the City Fever Hospitals, the patients having been admitted for some other infectious disorder. Hospitals for the treatment of Consumptives have been opened as follows:—Moorend in 1908, Crimicar in 1909, and Winter Street in 1912. Crimicar Hospital was formerly reserved for Small Pox and Winter Street Hospital for other infectious diseases. Deaths of Sheffield residents which occurred in asylums, are not included in this table, as it is probably correct to say that in most cases the disease develops after the removal to the asylum for the mental trouble.

REGISTRATION SUB-DISTRICTS AND SECTIONS.

Description
of Sub-
Districts and
Sections.

In the report for 1913 there was a full description, illustrated by a map, of the boundaries of the sub-districts and sections. As this sub-division of the city is still comparatively new, it will be advisable to give an abridged description of the sub-districts and sections.

Sheffield
North (A).

Sheffield North (A) is a low-lying section very little above the river level, extending from Lady's Bridge on the east to the Royal Infirmary on the west, with the river Don on the north, and Westbar and Shalesmoor on the south.

Sheffield
North (B).

Sheffield North (B) has Westbar and Shalesmoor on the north-east, St. Philip's Road on the west, and Allen Street and Hollis Croft on the South. Scotland Street and Meadow Street run through the middle of it.

Sheffield
North (C).

Sheffield North (C) has St. Philip's Road on the east, Mushroom Lane and Weston Park on the north-west, and Western Bank on the south.

Sheffield
South (A).

Sheffield South (A) extends from Lady's Bridge on the east to St. George's Church on the west. High Street, Church Street and West Street run through the middle of it.

Sheffield
South (B).

Sheffield South (B) lies between the approach to the Midland Railway Station and Sheffield Moor: Eyre Street runs through the middle of it. The Porter Brook forms the southern and Fargate the northern boundary.

Sheffield
South (C).

Sheffield South (C) is a low-lying section between Bramall Lane on the west and the river Sheaf on the east. The Porter Brook forms the northern boundary.

Park (A).

Park (A) is the old portion of the Park Sub-District on the hill to the east of the Midland Railway Station and stretches to St. John's Church.

Park (B).

Park (B) includes the district around the Victoria Station and the Markets and the country district around the old portion of the Park.

Brightside
West (A).

Brightside West (A) extends from Spital Hill on the east to Parkwood Springs on the west. The southern boundary is formed by the Great Central Railway from the Wicker Arches to the Bridgehouses Goods Station, and by the river Don between Corporation Street and Rutland Road Bridges. Woodside Lane and Pyebank are in this section.

Brightside
West (B).

Brightside West (B) is largely rural, and includes Firvale, Firth Park, and part of Pitsmoor.

Brightside
East (A).

Brightside East (A) includes the low-lying district on each side of the Wicker and between Savile Street and the river as far as the River Don Works.

Brightside
East (B).

Brightside East (B) is on higher ground to the north-west of Savile Street and includes the big east-end works, the Sewage Works, High and Low Wincobank, and Grimesthorpe.

Attercliffe
(A).

Attercliffe (A) is a low-lying section between Attercliffe Road on the south-east and the river Don on the north-west, and extends from near Salmon Pastures to Tinsley Car Sheds.

Attercliffe
(B).

Attercliffe (B) is a somewhat undulating section and includes the district on each side of the tram route to Darnall, and between Darnall on the south-east and Attercliffe Road and Common on the north-west.

Handsworth.

Handsworth section is a small residential district near High Hazels Park.

Tinsley

Tinsley section includes the old village of Tinsley, the colliery village of Tinsley Park, and the new and rapidly growing residential district for men engaged at the big works near.

Hillsboro'.

Hillsboro' sub-district includes the residential district between the Middlewood and Malin Bridge car routes and the villages of Liberty Hill, Woodland View, and Wadsley.

Ecclesall
North (A).

Ecclesall North (A) has the river Don from Hillfoot Bridge to Hillsbro' Park on the east, and the Hillsbro' tram route on the west. Penistone Road runs through the centre of it.

- Ecclesall North (B).** Ecclesall North (B) is on the end of the ridge between the Porter and the Rivelin, and embraces the whole of Walkley. Langsett Road is on the east.
- Ecclesall West Central.** Ecclesall West Central sub-district extends along the ridge between the Porter and the Rivelin from the low-lying district near the Royal Infirmary to the Stanage Pole, and includes Crookes, Crookesmoor, Broomhill, Ranmoor, Nether Green and Fulwood.
- Ecclesall South.** Ecclesall South sub-district is on the ridge between the Porter and the Sheaf, and includes Millhouses, Nether Edge, Greystones, Whirlow, Ringinglowe, Heeley, and the greater part of the residential district usually known as Sharrow.
- Broomhall (A).** Broomhall (A) is a somewhat flat section between Porter Street on the east and Hanover Street on the west, Wellington Street on the north, and Ecclesall Road on the south: South Street, Moor, runs through it.
- Broomhall (B).** Broomhall (B) is the section between the General Cemetery and Clarkehouse Road, and includes the Botanical Gardens and Broomhall Park. The Ecclesall tram route goes through the southern portion of the section.
- Sharrow.** Sharrow section includes the thickly populated district on each side of London Road and Cemetery Road, and a small portion of the district usually known as Sharrow near Sharrow Head and the General Cemetery.
- Norton.** Norton section includes the district on each side of the Woodseats tram route from Heeley Station onwards, the village of Norton and the rural district around it.
- Vital Statistics of Sections.** Table IX. shows considerable changes as compared with the previous year and indicates that for a reliable comparison between small districts it is desirable to take a longer period than one year.

The birth-rates in the sections varied from 45·05 in Brightside East (A) and 40·93 in Sheffield South (B) to 14·95 in Broomhall (B).

The death-rates from all causes varied from 32·15 in Sheffield North (B) and 30·62 in Sheffield North (A) to 10·44 in Brightside West (B) and 10·36 in Norton. The sections which showed a death-rate over 20 per 1,000 both in 1913 and 1914, were:—Sheffield North (A), Sheffield North (B), Sheffield South (A), Sheffield South (B), Park (A), Brightside East (A), and Ecclesall North (A.)

The Infant Mortality rate varied from 210 in Sheffield North (B), and 201 in Sheffield North (A) to 92 in Norton, 68 in Brightside West (B), and 56 in the small district of Handsworth. The districts which showed an Infant Mortality rate of over 140 per 1,000 births in both 1913 and 1914 were:—Sheffield North (A), Sheffield North (B), Sheffield South (A), Park (A), Brightside East (A), Attercliffe (A), and Ecclesall North (A); while Broomhall (A), had the high Infant Mortality rate of 177 during 1914.

The following sections showed a high mortality rate from Measles both in 1913 and 1914:—Sheffield North (A), Sheffield North (B), Sheffield South (A), Sheffield South (B), and Ecclesall North (A); while the following sections experienced a heavy mortality-rate from Measles during 1914:—Sheffield South (A), Sheffield South (B) and Broomhall (A.)

The following sections showed a heavy mortality-rate from Whooping Cough during 1914:—Sheffield North (A), Sheffield North (B), Sheffield North (C), Sheffield South (B), Ecclesall North (A), and Broomhall (A).

As regards Pulmonary Tuberculosis, the following sections showed a high death-rate both in 1913 and 1914:—Sheffield North (A), Sheffield North (B), Sheffield North (C), Sheffield South (A) and Sheffield South (B), Ecclesall North (A) and Broomhall (A).

POSITION OF SHEFFIELD AMONG THE LARGEST TOWNS.

Table G shows the birth-rates, death-rates and infant mortality rates in the 17 largest towns of Great Britain. The birth-rates vary from 32·0 in Stoke to 19·7 in Bradford. Six of the seventeen towns have higher rates than Sheffield. The death-rates, when corrected for inequalities in the sex and age distribution of the populations, vary from 12·6 in Portsmouth, to 20·1 in Liverpool. Ten of the seventeen towns have lower rates than Sheffield.

The infant mortality rates vary from 85 in Portsmouth to 145 in Nottingham. Eleven of the towns had lower rates than Sheffield.

TABLE G.—BIRTH-RATES AND DEATH-RATES IN LARGEST TOWNS FOR THE YEAR 1914.

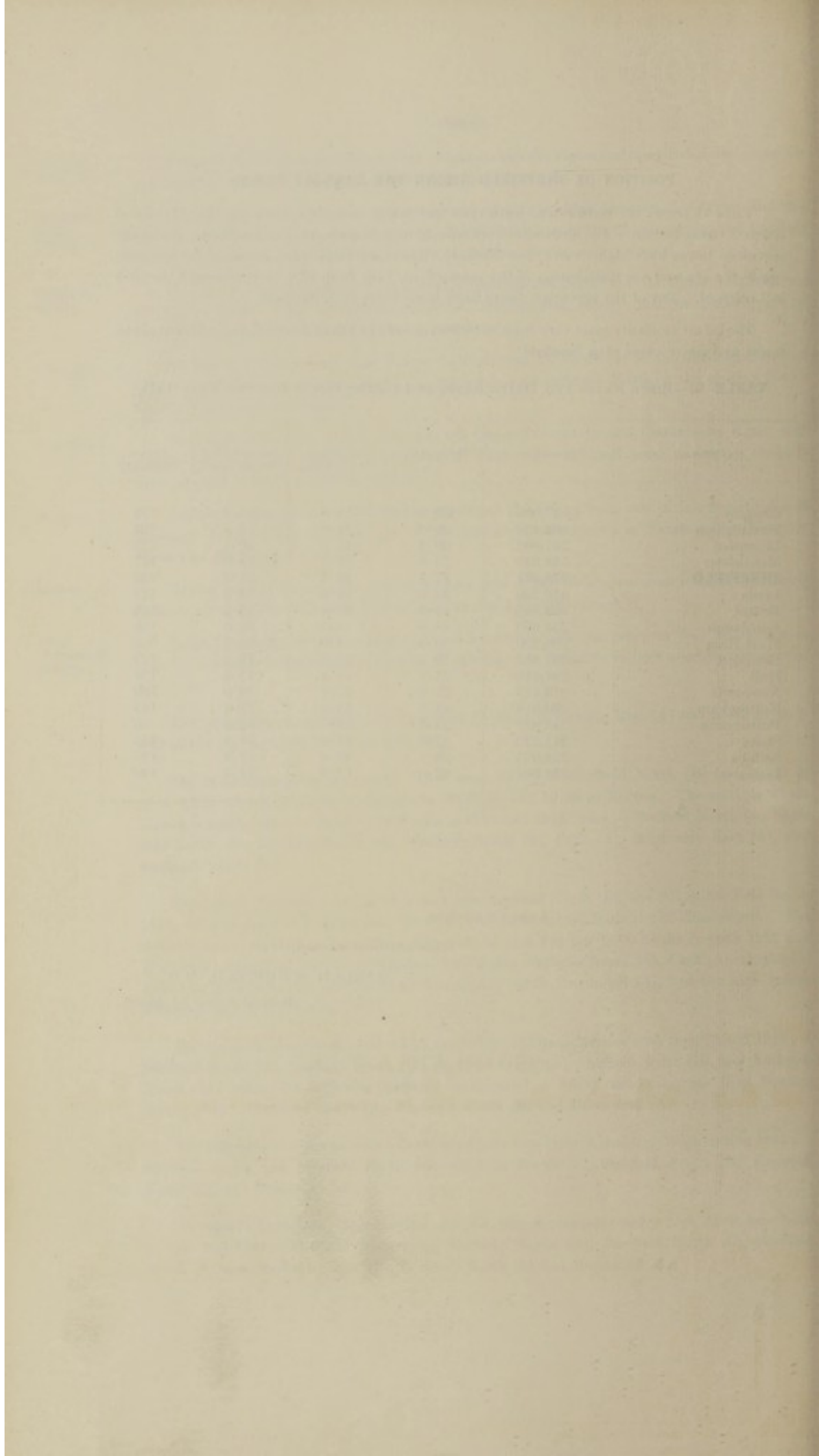
Town.	Population.	Birth-rate.	Recorded Death-rate.	Standardized Death-rate.	Infant Mortality.
Glasgow	1,047,000	28·0	16·6	18·2	133
Birmingham	868,430	26·4	14·8	15·4	122
Liverpool	767,992	30·4	19·5	20·1	139
Manchester	738,538	25·9	16·7	18·0	127
SHEFFIELD	476,971	27·5	16·4	17·3	132
Leeds	459,260	23·6	14·9	15·8	123
Bristol	363,312	21·6	13·4	13·2	100
Edinburgh	321,900	19·9	15·5	16·0	110
West Ham	296,570	30·4	14·9	15·3	106
Bradford	291,482	19·7	15·6	16·5	123
Hull	291,118	27·7	15·4	15·5	121
Newcastle	273,415	27·9	17·1	18·0	136
Nottingham	266,918	23·4	15·3	15·4	145
Portsmouth	245,827	23·7	12·7	12·6	85
Stoke	241,430	32·0	17·6	18·8	144
Salford	234,975	26·7	16·6	17·8	125
Leicester	232,664	22·0	13·9	14·3	120

I am, Gentlemen,

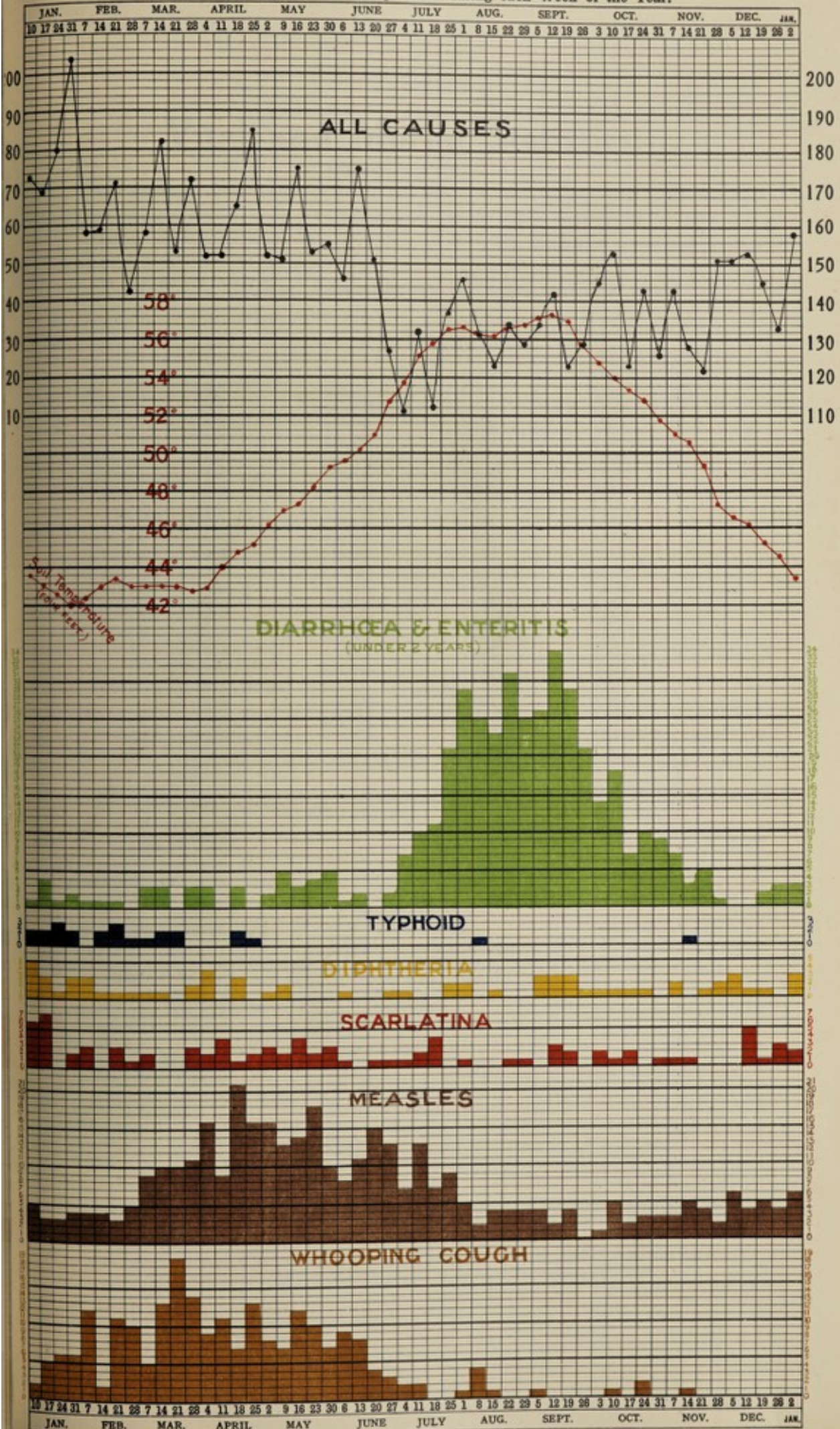
Your obedient servant,

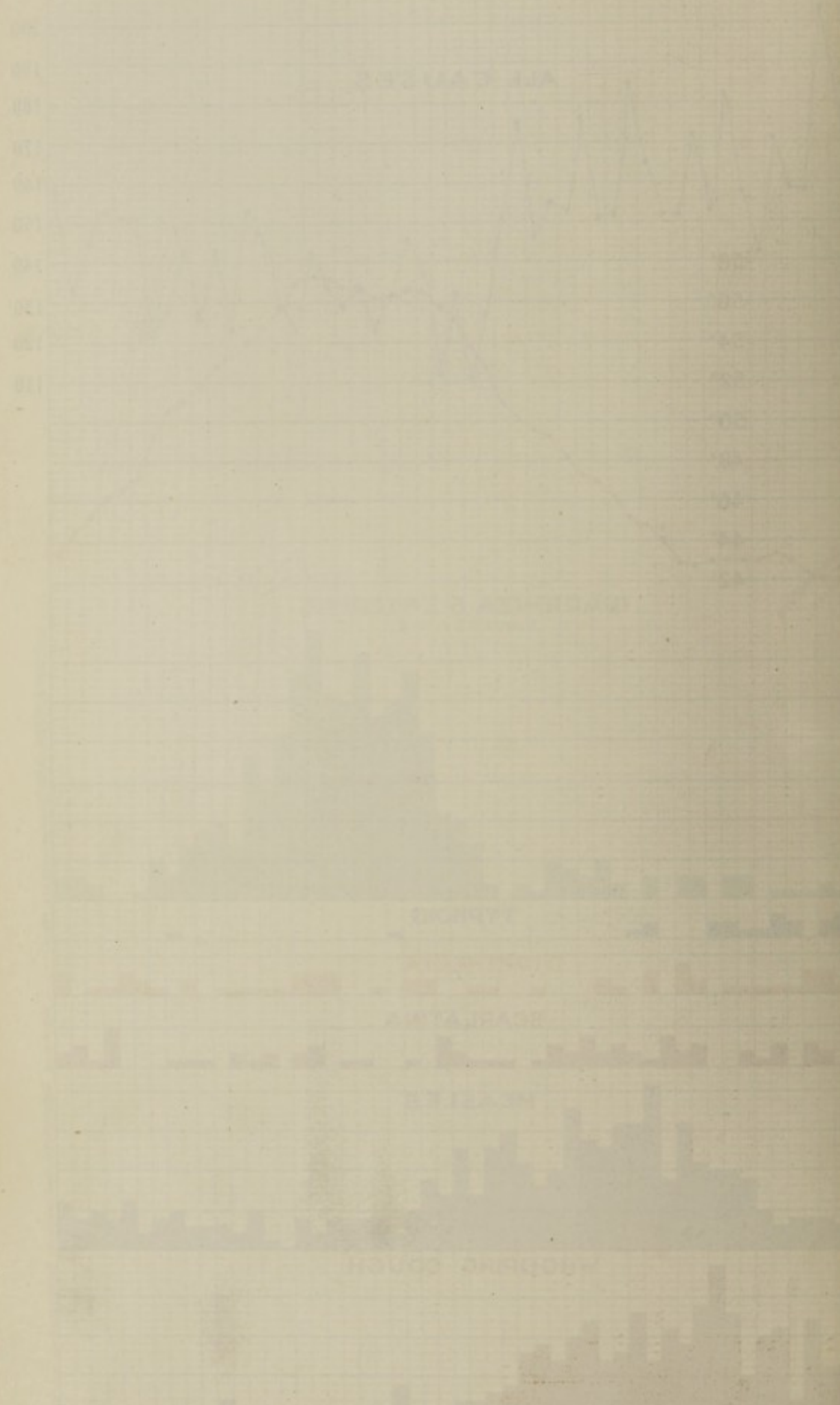
HAROLD SCURFIELD, M.D.,

Medical Officer of Health.



DEATHS CHART, 1914.—Showing the Number of Deaths from All Causes and from certain Infectious Diseases, also Soil Temperature during each Week of the Year.





Vital and Mortal Statistics.

The estimated mean population of the City for 1914, based on the Census enumerations of 1901 and 1911, was 476,971, which is the figure adopted by the Registrar-General for that year.

Taking the sex ratio as at the Census of 1911, the number of males and females works out at 235,459 and 241,512 respectively.

TABLE I.—Population, Estimated Increase, and Natural Increase, 23 years.

YEAR.	Population.	Estimated Increase	Excess of Births over Deaths.
1892	330,816	5,269	5,006
1893	336,171	5,355	4,165
1894	341,612	5,441	5,239
1895	347,141	5,529	5,004
1896	352,760	5,619	5,121
1897	358,470	5,710	4,668
1898	364,272	5,802	4,853
1899	370,168	5,896	4,484
1900	376,160	5,992	4,280
*1901	410,151	33,991	4,875
1902	414,506	4,355	6,874
1903	418,906	4,400	6,160
1904	423,355	4,449	6,526
1905	427,850	4,495	5,576
1906	432,395	4,545	5,945
1907	436,986	4,591	6,353
1908	441,630	4,644	6,931
1909	446,321	4,691	6,198
1910	451,065	4,744	6,238
1911	455,817	4,752	5,288
*1912	466,408	10,591	6,226
1913	471,662	5,254	5,842
*1914	476,971	5,309	5,214

* City extended October 31st, 1901, April 1st, 1912, and October 1st, 1914.

TABLE II.—Registration Sub-Districts and Municipal Wards contained therein.

REGISTRATION SUB-DISTRICTS.	MUNICIPAL WARDS.
§Sheffield North	St. Philip's.
Sheffield South	St. Peter's (part); Crookesmoor (small part containing 54 persons).
Sheffield Park	Park.
Brightside West	Brightside (part); Buragreave (part); Neepsend.
Brightside East	Brightside (part); Burngreave (part).
Attercliffe	Attercliffe (part); Darnall (part).
Handsworth (part)	Darnall (part).
*Tinsley (part of S.E. R'ham.)	Attercliffe (part).
Hillsbro'	Hillsbro' (part).
‡Bradfield	Hillsbro' (part).
Ecclesall North	Walkley; Hillsbro' (part).
Ecclesall West Central	Crookesmoor (part); Hallam; St. Peter's (small part containing 36 persons).
Ecclesall South	Ecclesall; Heeley (part).
†Broomhall	Broomhall.
†Sharrow	Sharrow.
Norton	Heeley (part).

§ That part of St. Peter's Ward which was contained in the Registration Sub-District of North Sheffield was transferred on 1st March, 1913, to South Sheffield. St. Philip's Ward is now co-terminous with the District of North Sheffield.

* Tinsley extension remains in the Registration District of Rotherham.

† Broomhall and Sharrow were united for registration purposes on 1st September, 1911, but the two districts have been treated as separate entities in the tables throughout this report.

‡ Rivelin extension (Bradfield Sub-District) 1st October, 1914. Included with Hillsbro' in tables.

TABLE III.—*Population of Registration Sub-Districts at the Censuses of 1881, 1891, 1901, and 1911; and mean estimated Population, 1914.*

REGISTRATION SUB-DISTRICT.	Population Enumerated.				Estimated Population, middle of 1914.
	1881.	1891.	1901.	1911*	
Sheffield North ...	38,982	37,499	38,784	35,019	29,662 Sheffield North.
Do. West ...	14,957	14,105	26,538	24,416	27,566 Do. South.
Do. South ...	17,919	18,411			
Do. Park ...	19,948	21,401	25,323	26,390	26,555 Do. Park.
Brightside West	56,719	67,083	40,214	46,228	48,024 Brightside West.
Do. East			37,778	40,035	40,505 Do. East.
Attercliffe ...	26,965	35,883	51,585	61,693	64,918 Attercliffe.
Handsworth (part) ...	—	—	757	1,188	1,365 Handsworth (part).
Tinsley (part) ...	—	—	—	5,284	7,413 Tinsley (part).
Hillsbro' ...	—	—	11,763	17,965	20,469 Hillsbro'.
Nether Hallam ...	38,967	46,328	42,828	48,949	50,756 Ecclesall North.
Upper Hallam ...	2,513	2,709	35,165	44,803	48,127 Do. W. Central.
Ecclesall ...	67,538	80,824	26,995	26,588	26,268 Do. South.
			28,323	26,266	25,447 Broomhall.
Norton ...	—	—	10,828	19,261	23,060 Sharrow.
					23,060 Norton.
Totals ...	284,508	324,243	409,070	459,916	476,971 Totals.

* As altered since the date of the Census.

TABLE IV.—*Acreage and Persons per acre in Registration Sub-Districts, 1914.*

Registration Sub-District.	Area in Acres.	Mean Estimated Population, 1914.	Persons per Acre.
Sheffield North ...	258	29,662	115·0
Do. South ...	356	27,566	77·4
Do. Park ...	2,507	26,555	10·6
Brightside West ...	2,089	48,024	23·0
Do. East ...	1,593	40,505	25·4
Attercliffe ...	1,394	64,918	46·6
Handsworth (part) ...	76	1,365	18·0
Tinsley (part of Rotherham) ...	691	7,413	10·7
*Hillsbro' ...	1,521	20,469	13·5
Ecclesall North ...	654	36,836	56·3
Do. West Central ...	7,588	50,756	6·7
Do. South ...	3,613	48,127	13·3
Broomhall ...	365	26,268	72·0
Sharrow ...	275	25,447	92·5
Norton ...	1,906	23,060	12·1
City ...	24,886	476,971	19·2

*Hillsbro' includes the Rivelin extension.

TABLE V.—*Marriages and Marriage Rates in Sheffield and in England and Wales since 1888.*

Year.	Total Number of Marriages in Sheffield.	Persons Married per 1,000 in Sheffield.	Persons Married per 1,000 in England and Wales.
1888	2,885	17·9	14·4
1889	3,073	18·7	15·0
1890	3,174	19·7	15·5
1891	3,128	19·2	15·6
1892	3,091	18·7	15·4
1893	2,797	16·6	14·7
1894	3,215	18·8	15·0
1895	2,810	16·2	15·0
1896	3,322	18·8	15·7
1897	3,465	19·3	16·0
1898	3,496	19·2	16·2
1899	3,663	19·8	16·5
1900	3,508	18·7	16·0
1901*	3,640	18·8	15·9
1902	3,682	17·8	15·9
1903	3,506	16·7	15·7
1904	3,507	16·5	15·3
1905	3,466	16·2	15·3
1906	3,943	18·2	15·7
1907	4,004	18·3	15·9
1908	3,419	15·5	15·1
1909	3,445	15·4	14·7
1910	3,639	16·1	15·0
1911	3,726	16·3	15·2
1912*	3,885	16·7	15·5
1913	4,077	17·3	15·5
1914*	4,062	17·0	15·9
Average ...	3,445	17·7	15·5

* City extended October 31st, 1901, April 1st, 1912, and October 1st, 1914.

TABLE VI.—*Birth-rates during the year for the whole City and for each of the Registration Sub-Districts; also the total number of Births, Legitimate and Illegitimate in each.*

District.	Estimated Population in the middle of 1914.	Legitimate.		Illegitimate.		Totals.	Birth-rate per 1000 persons living per annum.	
		Male.	Female.	Male.	Female.		Crude.	Corrected for Public Institutions.*
Sheffield North ...	29,662	465	495	22	27	1,009	34·0	35·6
Do. South ...	27,566	479	454	19	26	978	35·4	26·6
Do. Park ...	26,555	370	362	14	13	759	28·5	29·3
Brightside West ...	48,024	622	567	50	60	1,299	27·0	26·2
Do. East ...	40,505	681	646	20	25	1,372	33·8	34·6
Attercliffe ...	64,918	1,092	1,065	36	35	2,228	34·3	35·1
Handsworth ...	1,365	18	18	...	...	36	26·3	26·4
Tinsley ...	7,413	67	57	1	2	127	17·1	17·3
Hillsbro' ...	20,469	217	198	6	5	426	20·8	21·4
Ecclesall North ...	36,836	564	544	28	22	1,158	31·4	32·6
Do. W. Cent. ...	50,756	462	497	12	16	987	19·4	20·0
Do. South ...	48,127	475	460	41	23	999	20·7	20·3
Broomhall ...	26,268	284	287	8	15	594	22·6	23·3
Sharrow ...	25,447	294	269	10	7	580	22·7	23·7
Norton ...	23,060	218	241	7	5	471	20·4	20·7
Totals ...	476,971	6,308	6,160	274	281	13,023	27·3	
Add—Transfers from outside City	Districts ...	1	1	4	5	11		
		6,309	6,161	278	286	13,034		
Deduct—Transfers to outside City	Districts ...	11	12	2	5	30		
Nett totals	...	6,298	6,149	276	281	13,004		27·3

*The corrected Birth-rate for the Sub-Districts is obtained by distribution of the Births which occurred in the Jessop Hospital and the two Union Hospitals among the Sub-Districts in which the mothers' homes were situated at the time of their admission to the hospitals.

TABLE VII.—Population and Births and Deaths in Sheffield in past years. Also Birth-rates and Death-rates in Sheffield and in England and Wales.

YEAR.	SHEFFIELD.					ENGLAND.	
	POPULATION.	BIRTHS.		DEATHS.		Birth-rates.	Death-rates.
		Number of Births.	Birth-rates per 1000 persons living per annum.	Number of Deaths.	Death-rates per 1000 persons living per annum.		
1736	14,105						
1801	45,755						
1811	53,231						
1821	65,275						
1831	91,692						
1841	111,091						
1851	135,310	5,946	41·6	4,027	28·2	34·2	22·0
1861	186,375	7,561	40·5	4,610	24·7	34·6	21·6
1871	241,506	9,764	40·4	6,843	28·3	35·0	22·6
1872	245,023	9,973	40·6	6,445	26·3	35·6	21·3
1873	248,954	10,761	43·2	6,558	26·3	35·4	21·0
1874	253,645	10,861	42·8	7,009	27·6	36·0	22·2
1875	257,827	11,026	42·7	6,642	25·7	35·4	22·7
1876	262,080	11,205	42·7	6,568	25·1	36·3	20·9
1877	266,401	10,859	40·7	6,154	23·1	36·0	20·3
1878	270,791	10,985	40·3	7,208	26·6	35·6	21·6
1879	275,356	10,822	39·2	6,422	23·3	34·7	20·7
1880	279,800	10,723	38·3	6,410	22·9	34·2	20·5
1881	284,508	10,814	38·0	5,909	20·7	33·9	18·9
1882	289,194	10,837	35·4	6,281	21·1	33·8	19·6
1883	293,001	10,812	36·9	6,755	23·0	33·5	19·6
1884	296,856	11,272	37·9	6,832	23·0	33·6	19·7
1885	300,762	10,737	35·6	6,328	21·0	32·9	19·2
1886	304,720	10,573	34·6	6,130	20·1	32·8	19·5
1887	308,730	10,389	33·6	6,820	22·0	31·9	19·1
1888	312,793	9,863	31·5	6,611	21·1	31·2	18·1
1889	316,901	10,844	34·2	6,841	21·5	31·1	18·2
1890	321,079	10,691	33·2	8,316	25·9	30·2	19·5
1891	325,547	11,862	36·4	7,775	23·9	31·4	20·2
1892	330,816	11,846	35·8	6,840	20·7	30·4	19·0
1893	336,171	11,584	34·5	7,419	22·1	30·7	19·2
1894	341,612	11,267	33·0	6,028	17·6	29·6	16·6
1895	347,141	12,012	34·6	7,008	20·2	30·3	18·7
1896	352,760	11,853	33·6	6,732	19·1	29·6	17·1
1897	358,470	12,132	33·8	7,464	20·8	29·6	17·4
1898	364,272	12,066	33·1	7,213	19·8	29·3	17·5
1899	370,168	12,459	33·7	7,975	21·5	29·1	18·3
1900	376,160	12,572	33·4	8,292	22·0	28·7	18·2
*1901	410,151	12,766	33·0	7,891	20·4	28·5	16·9
1902	414,506	13,938	33·6	7,064	17·0	28·5	16·3
1903	418,906	14,136	33·6	7,976	19·0	28·5	15·5
1904	423,355	13,850	32·7	7,284	17·2	28·0	16·3
1905	427,850	13,082	30·6	7,510	17·6	27·3	15·3
1906	432,395	13,420	31·1	7,475	17·3	27·2	15·5
1907	436,986	14,125	32·3	7,772	17·8	26·5	15·1
1908	441,630	14,268	32·3	7,337	16·6	26·7	14·8
1909	446,321	13,296	29·8	7,098	15·9	25·8	14·6
1910	451,065	12,664	28·1	6,426	14·2	25·1	13·5
1911	455,817	12,623	27·7	7,335	16·1	24·4	14·6
*1912	466,408	12,887	27·7	6,661	14·3	23·8	13·3
1913	471,662	13,288	28·2	7,446	15·8	23·9	13·7
*1914	476,971	13,004	27·3	7,790	16·3	23·8	13·7

* City extended.

The number of deaths during 1913 was 7,790. Of these 4,092 were deaths of males, and 3,698 deaths of females. The death-rate was 16·3 per 1,000 per annum; or 17·4 per 1,000 for males, and 15·3 per 1,000 for females.

TABLE VIII.—Mortality Rates in Quinquennial Periods in Sheffield and in England.

Quinquennial Periods.	Mean Mortality rate per 1,000 of the population.	
	Sheffield.	England.
1871 to 1875	26·8	22·0
1876 to 1880	24·2	20·8
1881 to 1885	21·6	19·4
1886 to 1890	22·1	18·9
1891 to 1895	20·9	18·7
1896 to 1900	20·6	17·7
1901 to 1905	18·2	16·1
1906 to 1910	16·4	14·7
1911 to 1914 (4 years)	15·6	13·8

TABLE IX.—*Death Rates per 1,000 persons living, from all Causes, from Principal Zymotic Diseases and from Tuberculous Diseases, also Infantile Mortality Rates in the City and in the several Registration Sub-Districts, during the Five years, 1909-1913 and 1914.*

DISEASE.	NORTH.		SOUTH.		PARK.		BRIGHT-SIDE WEST.		BRIGHT-SIDE EAST.		ATTER-CLIFFE.		HANDS-WORTH.		TINSLEY.		HILLSBRO'.		ECCLESALL NORTH.		ECCLESALL WEST CENTRAL.		ECCLESALL SOUTH.		BROOMHALL.		SHARROW.		NORTON.		CITY.	
	5 Years 1909 to 1913	1914	5 Years 1909 to 1913	1914	5 Years 1909 to 1913	1914	5 Years 1909 to 1913	1914	5 Years 1909 to 1913	1914	5 Years 1909 to 1913	1914	1912 and 1913	1914	1912 and 1913	1914	5 Years 1909 to 1913	1914	5 Years 1909 to 1913	1914	5 Years 1909 to 1913	1914	5 Years 1909 to 1913	1914	5 Years 1909 to 1913	1914	5 Years 1909 to 1913	1914	5 Years 1909 to 1913	1914		
ALL CAUSES ..	23.0	28.0	17.5	22.0	17.9	16.6	13.1	14.5	17.0	18.7	17.8	17.3	12.8	12.5	12.4	11.3	13.3	11.0	14.7	17.4	13.5	13.6	11.0	11.8	15.2	17.7	14.1	15.9	10.7	10.4	15.1	16.3
Small Pox ..	...	...	...	...	...	...	0.00	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.00	...
Measles ...	2.06	1.69	0.87	1.81	1.01	0.60	0.77	0.54	1.16	0.35	0.78	0.45	0.38	0.73	0.23	0.54	0.34	0.44	0.86	0.98	0.58	0.59	0.40	0.37	0.65	1.71	0.54	1.10	0.39	0.39	0.82	0.77
Scarlatina ..	0.08	0.13	0.09	0.15	0.05	0.19	0.10	0.10	0.10	0.35	0.08	0.19	...	...	0.08	0.13	0.05	0.05	0.08	0.27	0.12	0.22	0.11	0.29	0.07	0.27	0.04	0.08	0.20	0.04	0.09	0.19
Diphtheria ..	0.13	0.20	0.07	0.15	0.14	0.08	0.08	0.12	0.10	0.22	0.12	0.26	...	...	0.27	...	0.15	...	0.12	0.11	0.10	0.08	0.07	0.06	0.11	0.04	0.09	0.28	0.05	0.09	0.10	0.14
Whooping Cough	0.52	1.25	0.30	0.51	0.20	0.60	0.25	0.33	0.30	0.54	0.28	0.43	0.80	...	0.61	0.13	0.22	0.34	0.27	0.65	0.15	0.51	0.12	0.27	0.17	0.69	0.18	0.39	0.18	0.22	0.25	0.50
Fever ...	0.10	0.07	0.11	0.04	0.10	0.04	0.04	0.04	0.05	0.07	0.06	0.05	...	...	...	0.13	0.06	...	0.07	0.14	0.06	0.08	0.02	0.06	0.12	...	0.03	...	0.05	0.09	0.06	0.06
Diarrhoea and Enteritis ..	1.48	2.36	1.16	0.94	1.50	1.36	0.74	0.90	1.21	1.73	1.36	1.86	...	...	0.64	0.67	0.39	0.34	0.85	0.98	0.51	0.49	0.40	0.35	0.83	1.14	0.70	0.63	0.43	0.30	0.91	1.07
Phthisis ...	2.42	2.49	1.72	2.32	1.00	1.09	1.00	1.00	1.08	0.84	1.13	1.09	1.16	...	0.34	0.94	1.02	0.68	1.27	1.52	1.00	1.06	0.77	1.29	1.29	1.29	1.40	1.45	0.81	0.95	1.19	1.27
Other Tuber. Dis.	0.56	0.74	0.44	0.44	0.32	0.30	0.31	0.31	0.37	0.47	0.42	0.51	...	1.47	0.08	0.40	0.37	0.64	0.40	0.57	0.31	0.35	0.32	0.17	0.45	0.30	0.36	0.12	0.37	0.30	0.39	0.40
† Infant Mortality per 1,000 births	166	188	146	143	143	148	113	100	143	130	136	144	57	56	121	117	99	100	118	146	103	107	79	98	135	158	117	129	89	92	124	132

* Figures for the two years only are available for Handsworth and Tinsley extensions.

† The Infant Mortality Rates have been obtained after allocating to the district of fixed or usual residence of the parent those births which occurred in the lying-in hospitals of the city, namely:— Jessop Hospital for Women, and the Sheffield and Ecclesall Union Hospitals. The deaths of infants born and dying within a year of birth in these institutions have been treated in the same way.

TABLE X.—Registration Sub-Districts and Sections.* Estimated Population; Density; Death-rates All Causes

DISTRICT.	SHEFFIELD NORTH.			SHEFFIELD SOUTH.			PARK.		BRIGHTSIDE WEST.		BRIGHTSIDE EAST.		ATTER-CLIFFE.		
	A.	B.	C.	A.	B.	C.	A.	B.	A.	B.	A.	B.	A.	B.	
ESTIMATED POPULATION.	5290	15645	8727	14584	5473	7509	13205	13350	23129	24895	12852	27653	18681	46237	
PERSONS PER ACRE	53	172	128	89	75	64	98	6	71	14	54	20	69	41	
Small Pox.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Measles	1·51	2·11	1·03	2·40	2·01	0·53	0·91	0·30	0·99	0·12	0·54	0·25	0·59	0·39	
Scarlet Fever	—	0·19	0·11	0·14	0·18	0·13	0·38	—	0·13	0·08	0·31	0·36	0·05	0·24	
Diphtheria	—	0·19	0·34	0·14	—	0·27	0·15	—	0·17	0·08	0·16	0·25	0·05	0·35	
Whooping Cough... ..	2·27	1·09	0·92	0·27	1·83	—	0·61	0·60	0·52	0·16	0·70	0·47	0·54	0·39	
Typhus Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Enteric Fever	—	0·06	0·11	0·07	—	—	—	0·07	0·04	0·04	0·08	0·07	0·05	0·04	
Puerperal Fever	—	—	—	0·07	—	0·27	0·23	—	0·04	0·08	—	—	0·10	0·13	
Diarrhœa and Enteritis	1·13	3·20	1·60	1·10	0·91	0·67	2·04	0·67	1·56	0·28	3·35	0·98	1·77	1·90	
Pneumonia	3·40	3·52	2·98	3·02	2·92	1·33	2·20	1·35	1·99	1·00	2·88	1·66	2·94	2·10	
Cancer	1·51	1·73	1·03	1·37	0·73	1·20	0·45	1·27	0·52	0·84	0·54	0·80	0·80	0·65	
Pulmonary Tuberculosis and Phthisis	4·35	2·43	1·49	2·33	3·65	1·33	1·44	0·75	1·34	0·68	1·01	0·76	1·23	1·04	
Other Forms of Tuberculosis	1·32	0·83	0·23	0·27	0·91	0·40	0·53	0·07	0·52	0·12	0·78	0·33	0·64	0·45	
Rheumatism, etc	—	0·19	—	0·14	—	0·27	0·15	0·07	0·13	0·08	0·16	0·07	0·05	0·06	
DISEASES OF	Circulatory System	3·21	4·09	1·26	3·15	2·92	1·73	1·89	1·57	3·20	1·33	3·66	1·84	1·71	1·41
	Nervous System and Organs of Special Sense	2·84	2·11	1·72	2·26	1·83	1·86	1·74	1·12	1·21	1·49	2·02	2·13	2·30	1·64
	Respiratory System except Pneumonia	3·40	3·26	1·49	2·40	1·46	1·33	1·59	1·65	1·73	0·92	2·65	1·01	1·39	1·62
	Digestive System except Diarrhœa and Enteritis	0·76	1·15	0·92	1·17	0·55	0·67	1·29	0·67	0·74	0·56	0·70	0·51	0·75	0·50
	Genito-urinary System except Venereal Diseases	0·95	0·83	0·57	0·69	0·55	0·27	0·76	0·30	0·65	0·48	1·01	0·65	0·64	0·61
	Early Infancy	1·32	1·79	1·60	1·30	1·28	1·20	1·51	0·75	1·56	0·52	2·41	1·23	1·66	1·34
	Puerperal State except Puerperal Fever	—	0·06	0·23	0·14	—	0·27	0·08	0·07	—	0·04	0·08	0·04	0·05	0·04
Suicide	0·19	—	0·23	—	—	0·27	0·08	0·07	0·13	0·04	0·23	0·04	0·16	0·09	
Other Affections produced by external causes	0·95	1·34	0·34	0·62	0·91	0·40	0·53	0·15	0·61	0·40	1·09	0·47	0·70	0·48	
Other Causes	1·51	1·98	0·80	1·92	1·46	0·27	1·52	1·73	1·04	1·08	1·48	1·48	1·34	0·89	
All Causes... ..	30·62	32·15	19·02	24·96	24·12	14·65	20·07	13·26	18·81	10·44	25·83	15·41	19·54	16·35	
Infant Mortality	201	210	133	182	107	112	148	148	118	68	161	108	159	138	
Birth-rates	31·00	38·73	32·77	23·31	40·03	22·51	38·85	19·77	34·80	18·20	45·05	29·80	35·38	35·04	
DISTRICT.	SHEFFIELD NORTH.			SHEFFIELD SOUTH.			PARK.		BRIGHTSIDE WEST.		BRIGHTSIDE EAST.		ATTER-CLIFFE.		

and certain Specified Causes and Birth-rates per 1,000 living; also Infantile Mortality Rates for the Year 1914.

HNS- WRTH	TINS- LEY.	H'LLS- BRO'.	ECCLESALL NORTH.		ESALL W. CNTL.	ESALL SOUTH	BROOM- HALL.		SHAR- ROW.	NOR- TON.	CITY.	DISTRICT.
			A.	B.			A.	B.				
1365	7413	20469	11476	25366	50756	48127	15569	10699	25447	23060	476971	ESTIMATED POPULATION.
18	11	21	52	59	7	13	140	42	93	12	20	PERSONS PER ACRE.
—	—	—	—	—	—	—	—	—	—	—	—	Small Pox.
0·73	0·54	0·44	1·83	0·59	0·59	0·37	2·83	0·09	1·10	0·39	0·765	Measles.
—	0·13	0·05	0·26	0·28	0·22	0·29	0·26	0·28	0·08	0·04	0·191	Scarlet Fever.
—	—	—	0·17	0·08	0·08	0·06	—	0·09	0·28	0·09	0·136	Diphtheria.
—	0·13	0·34	1·13	0·43	0·51	0·27	0·96	0·28	0·39	0·22	0·497	Whooping Cough.
—	—	—	—	—	—	—	—	—	—	—	—	Typhus Fever.
—	0·13	—	0·26	0·08	0·08	0·06	—	—	—	0·09	0·057	Enteric Fever.
—	—	0·10	—	0·04	0·04	—	—	0·09	0·04	0·04	0·052	Puerperal Fever.
—	0·67	0·34	1·05	0·95	0·49	0·35	1·73	0·28	0·63	0·30	1·067	Diarrhoea and Enteritis.
0·73	2·02	1·03	2·70	1·42	1·38	0·96	2·06	0·65	0·98	1·13	1·744	Pneumonia.
0·73	0·54	1·03	0·96	0·79	0·85	0·79	1·73	0·93	1·34	0·78	0·910	Cancer.
—	0·94	0·68	1·83	1·38	1·06	1·29	1·61	0·84	1·45	0·95	1·273	Pulmonary Tuberculosis and Phthisis.
1·47	0·40	0·64	1·22	0·28	0·35	0·17	0·32	0·28	0·12	0·30	0·403	Other Forms of Tuberculosis.
0·73	0·13	0·19	0·09	0·12	0·18	0·06	0·06	—	0·16	0·13	0·111	Rheumatism, etc.
1·47	1·35	1·22	1·13	1·62	1·95	1·43	1·28	2·62	1·53*	1·04	1·853	DISEASES OF { Circulatory System. Nervous System and Organs of Special Sense.
1·47	1·21	1·27	1·39	1·34	1·30	1·62	2·25	1·50	2·08	0·95	1·644	
2·20	0·27	0·73	2·00	1·42	0·99	1·04	1·35	0·93	1·26	0·48	1·377	Respiratory System except Pneumonia.
0·73	0·27	0·29	0·61	0·67	0·55	0·37	0·51	0·65	0·75	0·43	0·618	Digestive System except Diarrhoea and Enteritis.
—	—	0·39	0·26	0·43	0·73	0·35	0·77	0·37	0·51	0·52	0·560	Genito-urinary System except Venereal Diseases.
—	0·94	0·93	2·27	1·50	0·65	0·75	0·90	0·84	1·02	0·91	1·153	Early Infancy.
—	—	—	—	0·16	0·04	0·06	0·13	—	—	0·04	0·057	Puerperal State ex- cept Puerperal Fever
—	—	0·10	—	—	0·06	0·06	0·06	0·09	0·04	0·04	0·071	Suicide.
0·73	0·81	0·15	1·13	0·24	0·37	0·23	0·77	0·65	0·35	0·22	0·489	Other Affections pro- duced by external causes.
1·47	0·81	1·08	1·74	1·46	1·16	1·25	1·74	1·03	1·77	1·26	1·304	Other Causes.
12·45	11·33	10·99	21·96	15·26	13·63	11·84	21·32	12·52	15·88	10·36	16·322	All Causes.
56	117	100	191	120	107	98	177	106	129	92	132	Infant Mortality.
26·37	17·27	21·40	37·82	30·17	20·00	20·26	29·03	14·95	23·70	20·73	27·3	Birth-rates.
HNS- WRTH	TINS- LEY.	H'LLS- BRO'.	A. B. ECCLESALL NORTH.		ESALL W. CNTL.	ESALL SOUTH	A. B. BROOM- HALL.		SHAR- ROW.	NOR- TON.	CITY.	DISTRICT.

* For description of Sub-districts and Sections see pages XXVII and XXVIII.

TABLE XI.—*Infant Mortality: Nett Deaths from stated causes at various Ages under 1 year of age.*

CAUSE OF DEATH.	Under 1 week.	1-2 weeks.	2-3 weeks.	3-4 weeks.	Total under 4 weeks.	4 weeks and under 3 months.	3 months and under 6 months.	6 months and under 9 months.	9 months and under 12 months.	Total Deaths under 1 year.	
All Causes—Certified	326	90	66	70	552	294	311	256	278	1,691	
Uncertified	10	...	1	1	12	2	6	1	2	23	
Small-pox ... ..	...	...	...	...	...	...	...	...	...	...
Chicken-pox ... ..	...	...	...	...	...	...	...	1	...	1
Measles ... ..	...	1	...	...	1	2	4	25	35	67
Scarlet fever ... ..	...	...	...	...	...	...	2	...	4	6
Whooping Cough ... ..	...	...	...	3	3	18	27	25	33	106
Diphtheria and Croup ... ..	...	...	...	...	...	...	...	2	1	3
Erysipelas ... ..	...	1	...	3	4	...	1	...	2	7
Tuberculous Meningitis ... ..	...	...	...	...	...	...	4	1	3	8
Abdominal Tuberculosis ... ..	...	...	...	...	...	2	11	9	...	22
Other Tuberculous Dis... ..	...	...	...	...	...	...	3	4	2	9
Meningitis (<i>not Tuberculous</i>) ... ..	...	...	1	...	1	2	5	7	3	18
Convulsions	13	10	4	6	33	13	15	8	13	82	
Laryngitis ... ..	...	...	1	...	1	...	...	...	1	2
Bronchitis ... ..	...	5	1	4	10	29	32	29	24	124
Pneumonia (all forms) ... ..	...	1	2	...	3	22	39	48	66	178
{ Diarrhoea	...	...	...	...	...	...	...	...	...	...
{ Enteritis	2	5	5	15	27	77	107	73	62	346	
Gastritis ... ..	...	...	2	1	3	4	3	...	2	12
Syphilis ... ..	...	...	2	2	4	11	2	...	...	17
Rickets ... ..	...	...	...	...	...	...	1	3	4	8
Overlying	4	...	2	1	7	7	8	1	...	23	
Other Suffocation	4	...	...	1	5	...	1	...	...	6
Injury at Birth	16	...	1	...	17	...	...	...	...	17
Atelectasis	29	6	4	1	40	6	...	...	...	46
Congenital Malformations	12	6	3	...	21	10	2	2	1	36	
Premature Birth	199	34	24	20	277	25	10	...	...	312
Atrophy, Debility and Marasmus	42	17	10	9	78	47	19	11	2	157	
Other Causes	15	4	5	5	29	21	21	8	22	101	
TOTALS	336	90	67	71	564	296	317	257	280	1714	
Nett Births in the year—	legitimate, 12,447 ; illegitimate, 557.				Nett Deaths in the year—				legitimate infants, 1586 ; illegitimate infants, 128.		

TABLE XII.—Deaths and Death-rates per annum per 1,000 persons living from all Causes and from Specified Causes; Persons living; Deaths and Death-rates at Specified Age Periods during 1914.

	All Ages.	Under 1 year.	1 and under 2 years.	2 and under 3 years.	3 and under 4 years.	4 and under 5 years.	Totals 5 years.	5 and under 10 yrs.	10 and under 15 yrs.	15 and under 20 yrs.	20 and under 25 yrs.	25 and under 35 yrs.	35 and under 45 yrs.	45 and under 55 yrs.	55 and under 65 yrs.	65 and under 75 yrs.	75 yrs. and upwards.
Age Distribution of Population ...	476971	11549	10756	11737	11539	11056	56637	51724	47428	44503	40078	82162	66029	43814	27127	13642	3827
Deaths ...	7790	1714	664	256	154	118	2906	225	110	139	144	398	566	761	928	971	642
Death-rates per 1,000.	16.332	148.4	61.7	21.8	13.3	10.7	51.3	4.4	2.3	3.1	3.6	4.8	8.6	17.4	34.2	71.2	167.8
Small-pox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles ...	365	67	150	72	32	21	342	19	3	1	...	...	...	...	...	...	...
Scarlet Fever ...	191	6	13	11	13	17	60	21	5	1	2	2	...	...	...	...	...
Diphtheria ...	65	3	9	7	10	8	37	24	1	...	...	...	...	...	...	...	...
Whooping-cough ...	237	106	79	24	12	12	233	4	...	...	...	...	...	...	...	...	...
Typhus Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever ...	27	...	...	...	...	...	...	2	...	2	3	7	7	5	1	...	...
Puerperal Fever ...	25	...	...	...	...	...	...	...	...	1	4	15	5	...	...	...	...
Diarrhoea and Enteritis ...	509	346	76	17	6	4	449	4	1	...	...	8	8	6	8	13	12
Pneumonia ...	832	178	168	53	34	20	453	41	10	16	12	38	60	64	64	44	30
Cancer ...	434	...	...	1	...	1	2	...	1	3	1	15	40	99	136	107	30
Pulmonary Tuberculosis and Phthisis ...	607	3	4	5	4	2	18	9	12	28	47	120	146	124	81	20	2
Tuberculous Meningitis ...	80	8	17	10	7	5	47	16	7	5	2	3	...	...	...	...	...
Tuberculosis of Peritoneum and Intestines ...	64	22	10	2	7	1	42	7	6	2	2	1	2	2	...	...	...
Tuberculosis of other organs and General Tuberculosis ...	48	6	6	3	...	1	16	4	6	3	4	2	2	4	2	1	4
Nervous System and Organs of Special Sense ...	784	110	34	11	7	5	167	12	11	8	7	34	59	89	138	169	90
Circulatory System ...	884	5	...	...	...	...	5	8	13	24	22	34	82	137	198	245	116
Respiratory System (except Pneumonia) ...	657	134	53	25	10	6	228	7	1	4	2	10	15	49	97	144	100
Digestive System (except Diarrhoea and Enteritis) ...	295	40	9	2	1	2	54	10	6	5	10	21	35	45	59	41	9
Non-venereal diseases of genito-urinary system ...	267	4	4	1	1	...	10	5	5	4	5	23	30	53	59	55	18
Puerperal State (except Puerperal Fever) ...	27	...	...	...	...	...	...	...	...	...	6	10	11	...	...	...	...
Suicide ...	34	...	...	...	...	...	...	...	...	2	1	6	5	12	3	5	...
Other affections produced by external causes ...	233	38	12	8	8	11	77	17	7	9	9	20	24	24	19	14	13
Other causes ...	1225	638	20	4	2	2	666	15	15	21	5	28	34	47	63	113	218

DISEASES OF

TABLE XIII.—Mortality at certain age periods, 1914 and previous 10 years.

AGES.	Death-rate per 1,000 Persons living at each age of Group										
	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914
Under 1 year ...	178.9	174.4	167.0	158.9	153.3	118.4	125.8	137.8	122.0	149.0	148.4
1 and under 2 years	46.5	68.8	48.9	59.7	49.8	49.2	46.3	61.7	38.9	56.8	61.7
2 .. 3 ..	17.0	21.4	17.6	25.1	16.2	19.9	15.8	26.2	15.9	19.1	21.8
3 .. 4 ..	12.2	13.5	14.3	15.1	10.3	10.4	7.8	16.3	9.2	10.9	13.3
4 .. 5 ..	8.2	9.9	11.8	9.9	7.4	8.1	5.3	8.0	7.4	8.4	10.7
Total under 5 ..	57.2	62.1	56.2	57.8	51.4	44.2	43.5	53.5	38.9	48.9	51.3
5 and under 10 ..	3.7	3.6	4.6	3.8	3.3	3.8	3.0	3.7	3.0	4.1	4.4
10 .. 15 ..	2.2	1.9	2.4	2.5	1.5	1.9	1.6	2.1	2.2	1.9	2.3
15 .. 20 ..	2.3	2.4	2.4	2.6	2.1	2.4	2.3	2.3	3.0	2.7	3.1
20 .. 25 ..	3.6	3.3	2.8	2.9	3.0	2.6	2.1	3.0	3.2	3.1	3.6
25 .. 35 ..	5.1	4.8	4.7	4.4	4.3	4.4	4.0	4.6	4.3	4.1	4.8
35 .. 45 ..	10.1	9.6	9.1	9.6	9.0	8.9	8.1	9.8	7.7	8.5	8.6
45 .. 55 ..	16.6	16.7	17.2	18.0	16.7	16.3	15.3	17.1	16.4	15.6	17.4
55 .. 65 ..	36.5	32.3	36.3	37.2	35.0	35.6	34.4	33.1	33.1	33.6	34.2
65 .. 75 ..	79.1	73.4	78.8	80.4	81.2	85.1	77.2	76.0	74.4	76.3	71.2
Over 75 years ...	165.7	184.7	177.7	187.6	193.9	189.5	115.2	187.2	160.5	175.9	167.8
All ages ...	16.8	17.1	16.7	17.1	15.8	15.1	14.2	16.1	14.3	15.8	16.3

TABLE XIV.—Cases of Infectious Disease notified during each month of the year 1914.

DISEASES.	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	TOTALS.
Small-pox ...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria ...	95	80	90	46	63	66	69	43	68	77	71	82	850
Erysipelas ...	68	58	43	33	33	24	23	40	28	40	45	61	496
Scarlet Fever ...	368	313	266	250	199	255	241	221	217	269	266	249	3,114
Typhus Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever ...	33	13	12	8	4	6	7	5	8	4	6	7	113
Puerperal Fever ...	6	8	3	3	8	2	1	2	...	4	7	5	49
Cerebro-Spinal Fever ...	...	...	1	1	1	...	...	...	...	...	...	...	3
Poliomyelitis ...	1	...	2	3	3	1	3	4	3	4	2	1	27
* Ophthalmia Neonatorum ...	...	...	...	38	33	25	25	26	23	16	17	18	221
TOTALS ...	571	472	417	382	344	379	369	341	347	414	414	423	4,873

* Ophthalmia Neonatorum was made compulsorily notifiable on April 1st, 1914.

TABLE XV.—Cases of Infectious Disease notified since 1904.

DISEASES.	NUMBER OF CASES NOTIFIED.										Average, 10 years 1904-1913	Cases notified, 1914.
	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913		
Small-pox ...	44	4	1	...	...	...	7	...	...	...	6	...
Diphtheria...	400	407	675	431	438	373	397	504	545	831	500	850
Erysipelas ...	385	350	395	414	295	447	333	448	455	478	400	496
Scarlet Fever ...	2,906	3,086	4,905	2,357	1,404	1,530	1,337	1,382	1,754	3,501	2,416	3,114
Typhus Fever ...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever ...	348	320	390	209	237	177	126	251	165	74	230	113
Continued Fever ...	3	2	3	1	...	...	...	...	...	...	1	...
Puerperal Fever ...	32	38	52	42	43	51	32	43	55	48	49	49
†Cerebo-Spinal Fever ...	...	...	...	2	...	2	2	4	8	7	4‡	3
§Poliomyelitis ...	...	...	...	...	...	...	...	...	40	6	23*	27
¶Ophthalmia Neonatorum ...	...	...	...	...	...	...	...	...	...	...	...	221
Totals ...	4,118	4,207	6,421	3,456	2,417	2,580	2,234	2,632	3,022	4,945	3,629	4,873

† Cerebro-Spinal Fever was made compulsorily notifiable on 14th November, 1910.

‡ 7 years only. § Poliomyelitis was made compulsorily notifiable on 1st March, 1912. * 2 years only.

¶ Ophthalmia Neonatorum was made compulsorily notifiable on 1st April, 1914.

TABLE XVI.—Measles.—Mortality in Males and Females, and under certain age periods; also Mortality Rates, 10 years, 1904—1913 and 1914.

Years.	Deaths.	Rate per 1,000 Persons living	Deaths.		AGE AT DEATH.							
			Males.	F'males	Under 1 year.	1 and under 2 years	2 and under 3 years	3 and under 4 years	4 and under 5 years	5 and under 10 yrs.	10 and under 15 yrs.	Over 15 years
1904	33	.08	15	18	10	8	10	4	0	1	0	0
1905	415	.97	220	195	81	183	74	33	22	22	0	0
1906	75	.17	39	36	24	25	10	8	6	2	0	0
1907	386	.88	205	181	73	165	77	37	17	17	0	0
1908	108	.24	50	58	20	37	23	9	8	10	0	1
1909	423	.95	217	206	80	166	85	39	19	32	0	2
1910	118	.26	59	59	19	57	22	12	3	5	0	0
1911	790	1.73	421	369	173	321	146	83	27	38	1	1
1912	189	.41	104	85	37	73	34	14	9	20	1	1
1913	362	.77	186	176	75	155	53	31	21	26	0	1
Average, 10 years 1904-1913	290	.65	152	138	59	119	53	27	13	17	0	1
1914	365	.77	185	180	67	150	72	32	21	19	3	1

TABLE XVII.—*Scarlet Fever.*—*Notifications, Percentage of Cases removed to Hospital, Deaths, and Percentage Mortality, ten years, 1904-1913, and 1914.*

Year ...	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	Average 10 years, 1904-1913.	1914
Cases Notified	2906	3086	4905	2357	1404	1530	1337	1382	1754	3501	2416	3114
Percentage of Cases removed	77	76	63	73	81	82	86	86	88	69	78	75
Deaths ...	88	98	229	102	39	42	34	25	36	75	77	91
Percentage Mortality	3·0	3·2	4·7	4·3	2·8	2·7	2·5	1·8	2·1	2·1	2·9	2·9

TABLE XVIII.—*Scarlet Fever.*—*Sickness Rate per 1,000 persons living in Registration Sub-Districts and in City, ten years, 1904-1913, and 1914.*

YEAR.	REGISTRATION SUB-DISTRICTS.												CITY.				
	North.	South.	Park.	Brightside.		Attercliffe.	Handsworth.	Tinsley.	Hills-bro'.	Nether Hallam.	Upper Hallam.			Ecclesall.	Norton.		
1904	6·81	7·21	6·77	7·06		3·98			14·67	8·47	8·63		5·16	8·24	6·83		
1905	5·14	6·00	3·64	7·95		6·77			7·97	6·72	7·59		7·65	9·36	7·22		
1906	9·06	8·56	9·92	B'side West	B'side East	14·28	No Record.	No Record.	15·69	11·04	E'sall. North.	E'sall. W. Cntl.	E'sall. South.	Broom- hall.	Shar- row.	11·12	11·34
1907	3·36	3·52	4·87	5·16	4·95	5·19	No Record.	No Record.	6·89	6·02	4·24	8·93	3·03	4·91	6·66	5·59	
1908	2·23	1·21	1·79	4·78	3·80	1·48			3·30	3·97	4·28	3·14	2·08	2·78	4·63	3·18	
1909	1·47	2·15	1·86	4·17	4·22	2·54			5·93	3·82	5·04	2·95	2·18	2·54	3·63	3·43	
1910	1·73	1·63	3·15	3·47	2·56	2·48			4·25	2·59	3·61	4·54	2·36	2·35	3·90	3·00	
1911	2·75	1·89	1·60	2·52	3·02	2·79			3·36	4·07	2·97	3·71	2·26	3·10	6·30	3·03	
1912	4·03	2·78	3·36	3·50	4·08	1·89	...	4·69	5·39	6·10	2·62	4·49	2·49	4·08	7·74	3·76	
1913	4·79	4·83	4·71	8·30	9·36	9·61	0·76	14·07	9·96	6·84	6·31	6·58	6·82	7·70	7·56	7·42	
Average for 10 yrs. 1904 1913	4·14	3·98	4·17	5·36 5·56 8 years only		5·10	0·38 9·38 2 years only		7·74	5·56	4·69	5·32	3·80	5·16	6·91	5·48	
1914	4·32	5·04	7·08	6·35	9·06	6·69	...	8·36	3·56	6·40	7·31	7·67	6·18	6·25	5·25	6·53	

TABLE XIX.—Whooping Cough. Mortality under Certain age periods since 1904.

AGES.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	Av. for Years 1904-13.	1914.
Under 1 year	78	54	43	61	109	13	78	27	87	31	59	106
1 and under 2 years	33	51	28	59	83	22	65	18	58	20	44	79
2 " 3 " "	20	9	14	21	27	9	26	5	27	6	16	24
3 " 4 " "	12	6	9	13	13	4	9	5	9	6	9	12
4 " 5 " "	6	5	8	5	9	4	4	3	6	2	5	12
Over 5 years	2	4	7	3	6	2	6	4	5	3	4	4

TABLE XX.—Enteric Fever. Sickness Rate per 1,000 persons living in Registration Sub-Districts and in City, ten years 1904-1913, and 1914.

YEAR.	REGISTRATION SUB-DISTRICTS.												CITY.			
	North.	South.	Park.	Brightside.	Attercliffe.	Handsworth.	Tinsley.	Hillside.	Nether Hallam.	Upper Hallam.	Ecclesall.	Norton.				
1904	1.15	0.50	0.38	1.10	1.12			1.12	0.82	1.17	0.39	0.63	0.86			
1905	1.02	0.77	0.26	1.36	0.52			0.86	Ecclesall North. 1.05	Ecclesall West Central. 0.61	0.34	0.07	0.75			
1906	0.61	0.66	0.37	B'side West. 0.93	B'side East. 1.28	1.51	No Record.	No Record.	E'sall. North. 1.37	E'sall. W.Centl. 1.37	E'sall. South. 0.19	Broomhall. 0.32	Sharrow. 0.28	0.86	0.90	
1907	0.46	0.55	0.44	0.48	0.69	0.73	No Record.	No Record.	0.06	0.59	0.59	0.12	0.22	0.21	0.13	0.47
1908	1.19	0.70	0.18	0.39	0.27	0.21	No Record.	No Record.	0.86	0.81	0.75	0.36	0.47	0.42	0.24	0.53
1909	0.51	0.31	0.46	0.38	0.38	0.39			0.12	0.47	0.36	0.26	0.75	0.14	0.17	0.40
1910	0.31	0.33	0.23	0.55	0.20	0.35			0.17	0.20	0.43	0.05	0.23	0.15	0.16	0.28
1911	0.89	0.70	0.72	0.60	0.35	0.52			0.50	0.84	0.51	0.22	0.41	0.53	0.51	0.55
1912	0.67	0.54	0.53	0.15	0.52	0.46	...	...	0.21	0.33	0.38	0.20	0.23	0.27	0.05	0.35
1913	0.27	0.18	0.23	0.17	0.30	0.08	...	0.45	...	0.14	0.24	0.06	0.08	0.08	0.14	0.16
Average for 10 yrs. 1904-1913	0.71	0.52	0.38	0.46	0.50	0.59	...	0.23	0.42	0.59	0.58	0.18	0.34	0.26	0.30	0.53
				8 years only			2 years only			8 years only						
1914	0.37	0.15	0.19	0.18	0.35	0.22	...	0.13	0.10	0.30	0.28	0.23	0.27	0.20	0.22	0.24

TABLE XXI.—*Enteric Fever. Cases of Sickness in each month since 1905.*

YEAR.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1905	29	31	21	16	21	10	13	44	53	30	23	29
1906	22	6	20	18	9	11	14	31	69	109	48	33
1907	26	7	18	18	12	16	14	13	19	36	13	17
1908	22	16	7	15	8	14	8	16	34	43	34	20
1909	19	19	10	9	9	8	5	14	30	25	19	10
1910	10	7	6	11	7	9	10	3	25	14	9	15
1911	20	25	13	12	10	10	13	14	30	21	25	58
1912	39	17	15	22	14	7	10	5	3	19	9	5
1913	5	—	12	5	4	4	3	6	10	3	12	10
1914	33	13	12	8	4	6	7	5	8	4	6	7

TABLE XXII.—*Enteric Fever Notifications, Deaths, and Percentage Mortality at several Age periods during 1914.*

	At all Ages.	AT AGES—YEARS.						
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 45.	45 to 65.	65 and upwards.
Cases Notified	113	...	4	20	26	46	16	1
Deaths	27	...	...	2	5	14	6	...
Percentage Mortality	23·9	...	...	10·0	19·2	30·4	37·5	...

TABLE XXIII.—*Diphtheria.—Percentage Mortality in Hospital and Home-treated Cases, 1914.*

	HOSPITAL TREATED.			HOME TREATED.			TOTAL.		

Cases Notified	593	257	850	...	...	...
Deaths	30	35	65	...	...	...
Percentage Mortality	5·1	13·6	7·6	...	...	...

TABLE XXIV.—*Puerperal Fever. Cases of Sickness, Deaths, and Number of Births to each Death, 10 years, 1905 to 1914.*

	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914
Notified Cases	38	54	42	43	51	32	43	55	48	49
Deaths	22	25	23	19	20	12	14	20	18	25
No. of Births to every Death from Puerperal Fever	595	537	614	751	665	1055	902	644	738	520

TABLE XXV.—*Tuberculous Diseases. Mortality Rates during 10 years, 1904-1913, and 1914.*

DISEASE.	Mortality Rates per 1,000 living.											Average 1904 to 1913	1914
	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913			
Tuberculous Phthisis and <i>Phthisis</i>	1·27	1·15	1·04	1·20	1·28	1·17	1·01	1·22	1·28	1·24	1·18	1·27	
Tuberculous Meningitis	0·30	0·22	0·20	0·26	0·23	0·20	0·16	0·16	0·19	0·14	0·21	0·17	
Tuberculosis of Peritoneum and Intestines	0·21	0·18	0·16	0·14	0·17	0·11	0·13	0·13	0·09	0·12	0·14	0·13	
Other forms of Tuberculosis	0·11	0·09	0·11	0·09	0·11	0·09	0·08	0·07	0·10	0·14	0·10	0·10	
Total Deaths	797	701	656	742	785	702	626	723	777	774	728	799	
Death-rate per 1,000 persons living	1·88	1·64	1·52	1·70	1·78	1·57	1·39	1·59	1·67	1·64	1·64	1·68	

TABLE XXVI.—*Tuberculous Diseases. Mortality Rates in the two Sexes, 1904-1913 and 1914.*

Disease.	Sex.	Mortality Rates per 1000 living.											1914
		1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	Avg. 1904 to 1913	
Tuberculous Phthisis and <i>Phthisis</i>	Males ...	1·76	1·57	1·42	1·57	1·65	1·43	1·39	1·55	1·79	1·66	1·58	1·68
	Females	0·72	0·66	0·61	0·73	0·79	0·67	0·65	0·86	0·77	0·83	0·73	0·84
Tuberculous Meningitis	Males...	0·32	0·23	0·22	0·25	0·28	0·20	0·19	0·18	0·23	0·17	0·23	0·19
	Females	0·26	0·19	0·17	0·25	0·15	0·17	0·14	0·15	0·16	0·10	0·17	0·15
Tuberculosis of Peritoneum and Intestines	Males ...	0·22	0·20	0·16	0·14	0·16	0·11	0·16	0·16	0·11	0·15	0·16	0·17
	Females	0·18	0·16	0·14	0·14	0·15	0·11	0·11	0·10	0·08	0·10	0·13	0·10
Other forms of Tuberculosis	Males ...	0·12	0·11	0·11	0·09	0·10	0·09	0·10	0·09	0·12	0·16	0·11	0·12
	Females	0·10	0·06	0·10	0·08	0·11	0·07	0·06	0·06	0·09	0·12	0·09	0·08

TABLE XXVIII.—Vital Statistics of Whole District during 1914 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 Resi-dents not registered in the District.	Under 1 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
1908 ...	441,630	14,268	14,268	32.3	7,364	16.7	129	102	2,008	141	7,337	16.6
1909 ...	446,321	13,296	13,296	29.8	7,084	15.9	108	122	1,577	119	7,008	15.9
1910 ...	451,065	12,664	12,664	28.1	6,420	14.2	134	140	1,604	127	6,426	14.2
1911 ...	455,817	12,650	12,623	27.7	7,344	16.1	164	155	1,775	141	7,335	16.1
1912 ...	466,408	12,902	12,887	27.7	6,666	14.3	159	154	1,373	107	6,661	14.3
1913 ...	471,662	13,307	13,288	28.2	7,411	15.7	177	212	1,702	128	7,446	15.8
1914 ...	476,971	13,023	13,004	27.3	7,751	16.3	212	251	1,714	132	7,790	16.3

NOTE.—This Table is arranged to show the gross births and deaths in the district, and the births and deaths properly belonging to it with the corresponding rates. The rates have been calculated per 1,000 of the estimated gross population.

Area of District in Acres (land and inland water)—24,886.

Total population at all ages—459,916,
 Number of Inhabited Houses—98,815,
 Average number of persons per house—4.7, } At Census, 1911.

TABLE XXIX.—Continued.

CAUSE OF DEATH	TOTALS—ALL AGES.		1 & under 2 years. 2 years. 3 years. 4 years. 5 years.		TOTALS—UNDER FIVE YEARS.		5 & under 10 years. 10 years.		15 & under 20 years. 20 years.		25 & under 35 years. 35 years.		45 & under 55 years. 55 years.		65 & under 75 years. 75 years.		75 & under 85 years. 85 years.		TOTALS—ABOVE FIVE YEARS.				
	Totals.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Totals.	M.	F.	
																							M.
VI. NON-VENEREAL DISEASES OF THE GENITO-URINARY SYSTEM AND ANNEXA.																							
119. Acute nephritis ...	37	22	15	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	11	29
120. Bright's disease— A. Bright's disease as in 1901 list ...	143	83	60	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	83	60	143
B. Nephritis (unqualified 10 years and over, and Uremia ...)	32	12	20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12	20	32
121. Chyluria ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
122. Other diseases of the kidney and annexa— A. Abscess of kidney ... B. Cystic disease ... C. Suppression of urine ... D. Other diseases included under 122 ...	5	3	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	4
123. Calculi of the urinary passages ...	3	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	3
124. Diseases of the bladder ...	7	3	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	4	7
125. Diseases of the urethra, Urinary abscess, etc.— A. Perineal abscess ... B. Other diseases of urethra, etc. ...	5	5	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	5	10
126. Diseases of the prostate ...	21	21	21	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21	21	42
127. Non-veneral diseases of male genital organs ...	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2
128. Uterine hemorrhage (non-puerperal)— A. Menorrhagia ... B. Other uterine hemorrhage ...	5	5	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	5	10
129. Uterine tumour (non-cancerous) ...	5	5	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	5	10

TABLE XXX.—*Meteorology at Sheffield during 1914.*

Week Ending.	Mean Barometer Corrected.	MEAN DAILY SUNSHINE.				MEAN DAILY TEMPERATURE.									Total Rainfall for the Week (in inches).
		Weston Park.	Attercliffe.	High Hazels.	Lodge Moor.	Dry Bulb.	Wet Bulb.	Humidity.	Grass Minimum.	Soil 1 foot.	Soil 4 feet.	Air Maximum (Shade).	Air Minimum (Shade).		
1914		H. M.	H. M.	H. M.	H. M.										
Jan. 3 ...	30·188	2 29	1 3	1 5	2 21	35·0	33·4	82%	25·6	38·1	44·8	39·1	31·7	0·243	
10 ...	29·920	1 33	0 33	1 15	1 21	41·8	40·3	87%	34·4	39·4	43·7	47·5	37·3	1·106	
17 ...	30·369	...	...	0 4	...	34·8	33·5	87%	30·6	38·4	43·2	37·5	32·3	0·089
24 ...	30·160	1 0	0 39	1 9	1 15	33·6	32·0	83%	28·9	37·1	42·6	37·6	31·4	0·020	
31 ...	29·984	1 35	0 21	1 9	1 20	42·9	40·8	84%	36·7	39·0	42·0	48·7	41·1	0·333	
Feb. 7 ...	29·909	2 1	1 20	2 27	2 7	45·8	43·7	84%	39·6	42·8	42·4	51·3	43·4	0·060	
14 ...	29·546	2 44	2 9	2 43	2 36	43·6	41·2	82%	35·5	42·4	43·1	50·4	41·1	0·780	
21 ...	29·534	2 25	1 27	2 18	2 13	41·7	38·2	74%	33·3	41·0	43·4	46·8	36·9	1·015	
28 ...	29·537	3 1	2 3	2 48	3 24	41·8	39·8	86%	31·2	40·5	43·1	48·3	36·5	0·120	
Mar. 7 ...	29·678	3 16	2 32	2 48	3 15	44·1	41·0	78%	37·6	42·3	43·0	48·8	40·0	0·721	
14 ...	29·613	3 22	1 38	1 45	3 57	40·7	39·0	87%	31·9	40·8	43·1	47·8	36·1	0·655	
21 ...	29·296	1 32	0 49	1 14	1 42	38·5	36·9	87%	32·6	41·1	43·0	45·9	35·6	0·570	
28 ...	29·468	2 39	1 56	2 52	3 44	41·7	39·7	84%	31·4	40·7	42·8	48·3	35·7	0·455	
April 4 ...	29·946	3 41	2 35	3 15	3 17	49·7	47·0	82%	38·6	44·3	42·9	56·0	44·0	0·356	
11 ...	29·496	5 0	3 40	4 42	4 42	46·8	43·8	79%	35·3	45·0	44·0	52·8	39·9	1·141	
18 ...	30·296	9 32	8 53	10 49	11 14	48·6	44·9	76%	29·6	45·6	44·7	58·5	37·7	...	
25 ...	30·307	7 32	6 21	8 23	8 36	53·1	48·5	73%	36·5	45·4	45·2	62·8	43·4	0·010	
May 2 ...	30·331	5 27	5 26	6 41	6 20	49·8	46·2	76%	33·8	48·9	46·3	58·4	41·1	...	
9 ...	29·650	3 32	2 40	3 43	3 24	49·2	47·0	85%	41·1	49·0	46·9	55·3	43·9	0·947	
16 ...	30·187	4 35	2 39	4 41	5 32	49·1	46·6	82%	38·0	48·9	47·3	58·3	42·1	0·030	
23 ...	30·269	6 50	3 56	6 7	7 21	59·1	54·0	73%	44·2	53·8	48·1	66·4	48·8	0·450	
30 ...	30·198	4 39	2 35	4 37	5 4	50·36	46·0	71%	36·9	51·3	49·3	56·3	41·9	0·047	
June 6 ...	30·104	3 43	2 44	3 22	3 41	55·0	50·7	74%	42·5	52·8	49·7	60·2	45·2	0·027	
13 ...	29·901	5 58	5 38	6 8	5 35	52·9	49·9	82%	43·9	52·7	50·1	60·2	47·0	1·793	
20 ...	30·720	11 46	9 16	11 1	12 34	64·3	58·1	68%	47·8	57·8	51·0	72·9	51·8	0·030	
27 ...	30·097	8 57	6 20	8 27	9 2	58·8	51·0	68%	47·3	58·8	52·7	65·9	51·5	0·326	
July 4 ...	30·010	8 15	7 9	7 53	9 9	65·8	61·1	76%	51·8	61·8	53·9	74·4	56·1	0·310	
11 ...	29·984	6 07	5 6	6 3	6 38	61·0	58·0	83%	48·2	60·7	55·2	69·8	52·5	0·180	
18 ...	29·838	3 18	2 31	3 3	3 26	62·5	60·1	87%	52·8	61·7	55·9	68·9	56·4	0·490	
25 ...	29·676	4 27	3 25	3 56	4 14	61·1	58·9	86%	53·7	61·2	56·5	81·9	54·6	0·267	
Aug. 1 ...	29·806	3 15	2 17	2 57	3 15	56·8	54·8	88%	49·3	58·6	56·6	64·5	51·7	0·375	
8 ...	29·733	2 59	2 37	3 6	3 19	58·9	55·6	80%	46·9	58·6	56·3	64·8	51·0	0·427	
15 ...	30·153	8 22	7 24	8 16	8 24	61·6	58·6	83%	48·1	50·1	56·2	72·6	55·7	0·120	
22 ...	30·131	5 24	3 32	6 2	5 26	59·2	56·2	82%	46·7	59·5	56·7	68·1	51·7	0·044	
29 ...	30·002	5 51	4 52	5 35	5 34	64·9	60·4	79%	50·8	60·5	56·9	71·9	55·5	0·560	
Sept. 5 ...	30·284	3 48	2 42	4 2	4 32	63·0	59·2	79%	52·9	60·8	57·2	69·5	56·1	...	
12 ...	29·950	3 23	3 2	3 56	3 3	56·6	55·7	93%	49·1	59·1	57·3	67·2	52·1	1·000	
19 ...	29·704	6 45	5 5	6 27	5 40	55·5	51·9	78%	44·1	56·2	56·9	60·2	47·8	0·582	
26 ...	30·279	7 43	6 32	7 59	8 39	53·7	49·5	72%	35·3	53·2	55·9	60·7	42·7	0·010	
Oct. 3 ...	30·250	5 55	4 54	5 39	6 20	54·5	51·0	78%	42·2	53·4	54·8	60·3	46·8	...	
10 ...	30·307	2 46	1 56	2 45	2 48	53·6	49·6	75%	44·1	53·3	54·0	58·3	48·1	0·027	
17 ...	30·086	1 13	1 7	1 11	1 20	50·6	49·0	90%	43·5	51·8	53·5	55·8	47·5	0·390	
24 ...	30·050	0 12	0 37	1 13	0 37	47·1	46·4	95%	38·8	49·9	52·8	53·1	43·9	0·297	
31 ...	29·815	2 33	1 43	2 42	2 24	45·5	46·8	89%	40·5	48·9	51·9	53·0	43·6	1·534	
Nov. 7 ...	29·707	1 5	0 39	1 8	1 0	57·4	48·0	95%	42·3	48·8	51·1	52·5	45·1	1·103	
14 ...	29·832	2 30	1 50	2 18	2 27	47·9	45·8	84%	37·2	48·0	50·7	51·9	41·5	1·860	
21 ...	30·119	1 35	0 39	1 36	2 27	36·6	35·1	87%	27·0	42·2	49·5	42·0	33·6	0·280	
28 ...	29·797	0 37	0 5	0 31	0 35	42·1	40·7	88%	30·3	41·0	47·4	45·6	37·6	0·352	
Dec. 5 ...	29·493	1 37	1 9	1 46	1 11	46·5	44·1	80%	37·8	43·4	46·7	50·4	40·1	2·105	
12 ...	29·525	0 26	0 19	0 33	0 18	40·3	39·3	91%	31·7	41·1	46·2	44·5	38·4	1·195	
19 ...	29·346	1 4	0 9	1 0	1 19	42·2	40·9	89%	34·8	41·2	45·3	44·3	38·5	1·327	
26 ...	29·824	1 8	0 25	0 52	1 36	35·4	34·5	91%	27·3	38·6	44·7	40·0	32·6	0·680	

Sanitary Administration

HOUSING OF THE WORKING CLASSES ACTS, 1890—1909.

1,434 dwelling-houses were dealt with under and for the purposes of Section 17 of the Housing and Town Planning Act, 1909.

As the result of the inspections a list of the repairs and alterations required was sent to the owner in each case. In the majority of cases the owner agreed to carry out the work required on receipt of the list.

In 546 cases the dwelling-houses were considered on inspection to be in a state so dangerous or injurious to health as to be unfit for human habitation, and with respect to these houses representations were made to the Local Authority with a view to the making of Closing Orders.

After the receipt of the Representation the Local Authority sent notice to each of the owners that unless a satisfactory scheme was submitted they proposed to make Closing Orders with regard to these houses.

- (1) In 172 cases Closing Orders were made and served. The following is the result of the 172 Closing Orders up to the time of writing :—(a) 5 houses have been put into a fit state for human habitation and the Closing Orders made with regard to them have been determined; (b) 14 houses are still closed; (c) 1 house has been demolished; and in the case of (d) 152 houses, the Closing Order has not yet been made operative. In the case of 61 of these 152 houses, work was in progress at the time of writing.
- (2) The following statement shows how the remaining 1,262 houses were dealt with. The total of 1,262 houses includes 374 of the 546 houses which were dealt with after representations had been made to the Local Authority, and also the larger number which were dealt with without the necessity of making representations :—(a) 373 were renovated; (b) 14 were demolished; (c) in the case of 312, work was in progress at the time of writing, and (e) 563 were houses with regard to which negotiations were in progress at the time of writing.

The general character of the defects found to exist was :—Absence of efficient ventilation in back-to-back houses; insufficient lighting; damp walls and ceilings; defective and perished plaster; defective roofs; unsanitary outbuildings; water supply by means of stand-pipes in yards; and defective paving.

CONVERSION OF PRIVIES INTO WATER-CLOSETS.

During the year, 1,822 privies were converted and 127 additional water-closets were provided; the corresponding figures for 1913 being 1,589 and 131 respectively. Full particulars with regard to the work will be found in table xxxiv.

The work done under the supervision of this sub-department represents an expenditure during the year 1914 of about £29,727, of which the Corporation's share amounted to £8,994.

The number of sanitary conveniences at 31st December, 1914, was approximately as follows :—

(a) Privies with fixed receptacles	...	...	...	...	11,030
(b) Privies with movable receptacles (known as pail closets)					386*
(c) Fresh water-closets	...	...	...	...	65,490
(d) Waste water-closets	...	...	...	...	1,100

* This number includes 44 in use at Military Depots.

WORK WITH REGARD TO TUBERCULOSIS.

948 new cases of Tuberculosis of the Lung were brought to the notice of the Health Department during the year ; 25 of these cases were not notified during life.

In 9 cases the medical attendant undertook to give the necessary instructions to prevent the spread of infection.

In addition to first visits of investigation to new cases, the male inspectors paid 488 periodical re-visits, 625 visits for further investigation, 345 visits for disinfection after death, 44 visits with regard to removal to hospital, and 14 visits with regard to cleansing of houses.

The number of rooms disinfected was 5,653. In 590 cases disinfection was done after removal to hospital, in 345 cases after death, and in a number of cases after removal to another address.

In 22 cases reports of structural defects were sent to the District Inspectors of Nuisances ; in 2 cases reports were made to the Cleansing Superintendent ; and 135 cases of consumptives employed in factories or workshops were reported to the Workshops Inspector.

Most of the periodical re-visiting is now being carried out by the women inspectors, and at the close of the year, 1,301 consumptives were being so visited.

49 consumptives were known to have left the City, of whom 3 went to Canada and two to Australia. The number of cases on the register at December 31st, 1914, was 1,463. The large reduction as compared with the previous year is due to the fact that all the cases received the careful consideration of Dr. Rennie during the year. In every case where he was satisfied that the symptoms and signs of consumption were absent, the name was removed from the register. The number so removed was 652, some of which had been on the register for a long time. In the majority of these cases the symptoms were never definite and the removal of the names is practically a revision of the original diagnosis. In some cases the removal of the names means that a case of undoubted consumption has had the disease arrested.

CANAL BOATS ACTS.

The number of inspections of canal boats made during the year was 561. On the whole the boats were in fairly good condition.

The total number of infringements complained of was 77 (relating to 70 inspections of boats).

The nature of the infringements was as follows :—

Absence of certificate, and certificate not identifying owner	...	16
Want of marking, lettering or numbering	... ..	43
Want of painting	... ..	14
Want of repairs	... ..	4
		—
		77

It was not found necessary to institute legal proceedings with regard to any infringement.

There were 8 written notices served relating to 13 infringements, and 28 letters were sent to owners of boats requiring compliance with the Acts, etc. There were also verbal notices given to masters or owners, who promised compliance.

There have been no cases of infectious disease on board any of the boats during the year.

There have been no boats detained for cleansing or disinfection.

The number of boats on the Sheffield register on December 31st, 1914, was 73, of which number 45 were believed to be in use or available.

The actual number of persons visiting Sheffield on canal boats during the year was 946, made up as follows:—

Males over 14 years of age	...	...	...	...	...	448
Females over 14 years of age	...	...	...	...	...	230
Children between 5 and 13 years of age	...	...	...	...	...	132
Children under 5 years of age	...	...	...	...	...	136
						946

WOMEN INSPECTORS' WORK.

The figures with regard to attendances at the Baby Consultations again show an increase.

The attendances since the consultations were begun in August, 1907, have been as follows:

1907	...	...	...	...	1,332	(from August 12th, to end of year).
1908	...	...	...	...	2,830	
1909	...	...	...	...	5,322	
1910	...	...	...	...	6,975	
1911	...	...	...	...	7,181	
1912	...	...	...	...	9,425	
1913	...	...	...	...	11,912	
1914	...	...	...	...	14,521	

In four instances legal proceedings were taken for neglect of children, and on several other occasions the Women Inspectors gave evidence in support of proceedings taken by the National Society for the Prevention of Cruelty to Children.

The women inspectors, as in previous years co-operated with the School Medical Department and had to visit and follow up several cases of gross neglect reported by the School Medical Officer and the head teachers of the schools.

It was found necessary to take legal proceedings against one landlord for failing to comply with the bye-laws for houses let-in-lodgings with regard to the thorough limewashing of the premises.

Twelve summonses were issued against three landlords of furnished houses let to single families on account of dirty, verminous and dilapidated bedsteads and bedding, or for failure to limewash, or on account of the premises or conveniences being dirty. In each case a fine was imposed.

The sub-let houses regularly visited by the Women Inspectors were as follows:— 96 furnished houses-let-in-lodgings; 445 furnished houses let to single families; and 15 unfurnished houses sub-let to single families. The last-named are houses in the same court or in the same block of property as the furnished houses and constitute a part of the holding of the "farmer" of the furnished houses.

The following table gives a summary of the work:—

TABLE XXXI.

Visits to houses-let-in-lodgings	...	...	...	...	...	519
Visits with regard to Births	...	...	...	...	...	42,740
Visits with regard to Tuberculosis (including full reports on newly notified cases among women and children)	...	...	...	...	...	5,735
Special reports to Tuberculosis Medical Officer	...	...	...	...	...	230
Visits with regard to Schools complaints	...	...	...	...	...	100
Visits for other reasons	...	...	...	...	...	7,190
Cases reported to the N.S.P.C.C.	...	...	...	...	...	100
Cases reported to S.Q.V.D. Nursing Association	...	...	...	...	...	14

Cases reported to the Guild of Help	38
Nuisance notices served	375
Reports to District Sanitary Inspectors and to other Departments...	1,028
New houses-let-in-lodgings recommended for registration	10
Prosecutions for overcrowding and uncleanness in houses-let-in-lodgings	1
Prosecutions for neglect of children	4
Prosecutions for overcrowded and dirty dwelling houses	1
Children recommended for and subsequently sent to the Country Holiday Society's Homes	17
Cases of Nursed-out Children reported to the Guardians under part I. of the Children Act	22
Prosecutions in respect of furnished houses sub-let to single families for failure to lime-wash and on account of dirty bedding, etc. ...	12

The women inspectors report that they met with more cases of overcrowding during 1914 than in any previous year. The number of cases dealt with in the 16 districts was 245. Of these 68 were dealt with by verbal notices and 177 by written notices. In 61 instances written intimations were sent to the landlords.

In former reports mention used to be made of the increasing use of the boat-shaped bottle and the decreasing use of the unsanitary long-tube bottle. It can now be said that the long tube bottle has practically disappeared. The same cannot be said of the "dummy teat," which appears to be regarded as a necessity. It is probable that during the time diarrhoea is prevalent, the dirty dummy teat is one of the common exciting causes of this disease.

A separate cot for the baby from birth is increasing in popularity, but it is a difficult matter to get it adopted universally. The difficulty is not the expense but the superstition that the baby requires for the first few weeks of life the warmth of the mother.

I am informed by the City Coroner that during 1913 there were inquests on 23 cases of overlying in Sheffield, 28 during 1914, and that during the first half of 1915 there were 22. The want of the separate cot is therefore, accountable for a very serious mortality every year.

In May, a special inspection of the furnished houses was made. A large number of straw palliasses and a large quantity of dirty furniture were destroyed. Proceedings were taken in several cases as already mentioned.

At the beginning of the year the question of extending the consultations to children between babyhood and the school-age was considered. The matter was several times before the Health Committee and in September was again considered in connection with the circular on Maternity and Child Welfare issued by the Local Government Board. In November, a conference took place with representatives of the voluntary Hospitals, the University and the Education Committee with regard to the provision of treatment when found to be necessary for children attending the child-welfare Centre, in the case of whom the relatives are unable to pay for medical advice. The matter was still under consideration at the end of the year.

At the beginning of the year, five half-days per week were devoted by the Medical Staff to the Baby Consultations. The number of half-days was increased to seven in December, and since the close of the year a further increase has been necessary.

The War has had the effect of increasing the number of mothers who avail themselves of the Consultations. The firms supplying us with Dried Milk have had to increase the price since the outbreak of the war. The war has also thrown a large amount of extra work on the Women Inspectors Department. The extra work has come under the following headings:—

- (1) The visitation and systematic relief of Consumptives compulsorily discharged from Winter Street Hospital when the hospital was taken over by the Military Authorities during the latter part of the year.

- (2) The visitation of families said to be impoverished by the War, with a view to grants being made from the Lord Mayor's Relief Fund.
- (3) The visitation of the families of soldiers and sailors reported to be in distress principally during the first months of the War, before the system of Government allowances was in proper working order.
- (4) The visitation of families in connection with the scheme for the provision of layettes for newly-born infants and for clothing for children under two years, organised by the Women Inspectors Department and the Motherhood League, the funds for which were partly supplied by private donations and partly from the Lord Mayor's Relief Fund.
- (5) The investigation of cases of child-neglect on the part of women in the receipt of Government War Allowances. There were a considerable number of these cases usually associated with excessive drinking, and nearly all in connection with women of improvident habits who were suddenly put into possession of more money than they had ever had before. In several cases proceedings were found necessary.

MIDWIVES ACT, 1902.

At the end of the year 1914 there were 61 midwives in practice on their own account in Sheffield. At the end of 1913 there were 62. The reduction in the number is accounted for by one removal from the city.

Of the 61 practising midwives 22 were midwives certified by examination, 5 were midwives who had had twelve months training at a lying-in hospital, but had not sat for any examination, and 34 were untrained midwives, who were in bona-fide practice as such at the time of the passing of the Act.

There were 200 visits of supervision paid to midwives at their own homes during the year.

According to the rules of the Central Midwives Board, notifications have to be sent by midwives under certain circumstances. There were 206 notifications of still-births received from midwives, 113 having reference to full-term births and 93 to premature births. In each of these cases a burial certificate was issued by the department after due enquiry had been made.

The number of notifications received that the midwife had been obliged to send for medical help was 618.

The reasons for sending for medical help, as far as can be ascertained, were as follows:—

- (1) Abnormal presentations, namely:—Funis, 7; Transverse, 10; Face, 4; Breech, 9; Foot, 5; Shoulder, hand, or arm, 10; Right Occipito-Posterior, 10; Total, 55.
- (2) Causes affecting the child, namely:—Debility, 37; Asphyxiation, 17; Prematurity, 55; Spina Bifida, 1; Convulsions, 19; Ophthalmia, 54; Jaundice, 6; Cleft Palate and Hare Lip, 2; Monstrosities, 2; Miscellaneous, 24; Total, 217.
- (3) Causes affecting the mother, namely:—Placenta Prævia, 10; Ante-partum hæmorrhage, 8; Post-partum hæmorrhage, 20; Uterine inertia, contracted pelvis and undilated os, 94; Adherent placenta, 31; Adherent membranes, 2; Laceration of perineum, 59; Rise of temperature, 57; Eclampsia, 8; Miscarriage, 4; Prolapse of Uterine Wall, 5; Miscellaneous, 48; Total, 346.

There were 49 cases of puerperal fever notified during the year of which 24 ended fatally. Another case notified during 1913 ended fatally in 1914. There were 45 visits paid with regard to these cases. In 16 cases the confinement was attended by a medical practitioner, and 9 of these cases ended fatally. In three cases the confinement was attended by a medical practitioner and a midwife. Two cases occurred inside the Jessop Hospital, both of which ended fatally. Six other cases which ended fatally occurred in connection with abortions which were not attended by either a medical practitioner or a midwife.

Of the 16 cases which occurred in the practice of Midwives, 4 cases occurred in the practice of one midwife, 3 cases in the practice of another, 2 cases each in the practice of two midwives, and one case each in the practice of five midwives.

Some information was obtained during the year with regard to the prevalence of Ophthalmia Neonatorum. The number of cases coming under the notice of the Inspectors and notified to this department was 221. Of this number 26 occurred in confinements attended by medical practitioners and of these, in one case the child lost the sight of one eye, in another case the eye was permanently injured, and in a third case the eye was left weak. There were 184 cases which occurred in confinements attended by midwives. Of these, in one case the child lost the sight of one eye and in five other cases the eyes were left weak. Two cases occurred in connection with confinements in the Sheffield Union Hospital. Of the 9 remaining cases, 5 died from some other illness before it could be ascertained whether the injury to the eye was permanent and in four cases the families had removed and could not be traced.

Various matters were brought to the notice of the Health Committee during the year.

Owing to the finding of a Coroner's Jury that certain midwives were guilty of neglect, an enquiry was held by the Committee and a report was sent to the Central Midwives Board, that a *prima facie* case had been established. The case came up for hearing by the Central Midwives Board and was dismissed.

An epidemic of Impetigo Bullosa occurred in the practice of a midwife. The cause of the epidemic was investigated and it cannot be said that any definite negligence on the part of the midwife was discovered. None of the cases proved fatal. All possible steps were taken in the matter of having the midwife's home and outfit disinfected, and these steps were apparently efficacious.

In June a midwife was charged with being the worse for drink while carrying out her duties, and also with want of cleanliness. The case with regard to her being under the influence of drink was not proved, but the midwife was cautioned with regard to the need for greater cleanliness in her methods. Shortly after the close of the year, this midwife gave up practise.

In July an unqualified woman was charged with practising as a midwife. She was brought before the Committee and cautioned. It is believed that she has ceased to practise.

In December a midwife was cautioned for not notifying Ophthalmia cases with sufficient promptitude.

In December an enquiry was held with regard to three cases of Puerperal Fever occurring in the practice of a midwife. The midwife was exonerated from blame as there appeared to be no connection between the cases, two of which were attended by medical practitioners as well as the midwife.

On April 1st Ophthalmia Neonatorum became compulsorily notifiable by medical practitioners. All the members of the medical profession practising in the City were notified with regard to the matter.

All cases of Ophthalmia Neonatorum coming to the knowledge of the women inspectors are followed up with a view to seeing that the relatives obtain adequate treatment for the baby. Owing to the fact that there is no visitor in connection with the hospitals to follow up such cases, a baby suffering from Ophthalmia Neonatorum attending the Out-patient Department may between visits to the Hospital become irretrievably worse without the hospital authorities being aware of it. In order to meet this difficulty the Queen Victoria Nurses attend such cases and an arrangement has been made that any case of Ophthalmia which is doing badly can be admitted to the hospital at once as an in-patient, either with, or without the mother. In four cases babies have been admitted to the hospitals in this manner as emergency cases and there is very little doubt that by this means the sight was saved in each case.

BLACK SMOKE NUISANCE.

Proceedings were taken in 18 cases as follows:—12 steel manufacturers, 5 haulage contractors, and 1 ganister grinder. The results of the proceedings were as follows:—In 9 cases, orders and costs; in four cases, £5, £4, £3 15s., and £1 respectively, including costs; and in the other four cases, £10, £2, 10s. and 7s. 6d. respectively, and costs.

The usual tables are given.

FACTORY AND WORKSHOP ACT.

The number of registered workshops was reduced by 33 during the year, 35 workshops being removed from the register and 2 added to it.

The following are particulars of the 35 workshops removed. 12 workshops became factories owing to the introduction of electric power, namely, 1 bakehouse, 2 tailoring establishments, 3 wood-working establishments, 3 boot-repairing establishments, 3 razor case making establishments. 23 workshops were closed during the year namely, 2 bakehouses, 7 tailoring establishments, 7 dressmaking establishments, 1 millinery establishment, 3 electro-plate working establishments, 3 file-cutting establishments.

The 2 workshops added to the register were, 1 Chinese hand laundry and 1 restaurant kitchen.

In addition to the work done in answer to notices shown in the table, the following matters were dealt with in response to verbal intimations.

Reconstructions of defective drains	...	...	...	...	...	12
Reconstructions of water-closets	...	...	...	...	...	7
Provision of additional water-closets	...	...	...	...	...	24
Substitution of water-closets for privies	...	...	...	...	...	10
Provision of new urinals	...	...	...	...	...	5

One cellar used as a bakehouse for pikelets was closed immediately on being found.

Notices were sent to the firms who employ outworkers when the lists became due and only one firm was prosecuted for failing to send in the list, a fine of 5s. 6d. being imposed.

124 visits were paid to houses where homework was being carried on.

The Inspector visited 130 factories and workshops in which notified consumptives were employed.

In the case of five of the factories visited, the attention of His Majesty's Inspector of Factories was called to conditions found. The usual table is given, numbered xxxv.

OFFENSIVE TRADES.

The following list gives the number of premises where offensive trades are carried on and the number of visits paid during 1914.

	Premises occupied.	Visits paid.
Blood driers...	1	23
Bone crushers	2	42
Hide and skin markets	2	95
Horn sloughers	1	38
Grease manufacturers	1	18
Gut dressers	4	113
Tallow melters	1	14
Tripe dressers	18	219

One new tripe dressing business was established. The tripe dressing places have, therefore, increased from 17 to 18.

One gut dressing place was demolished for street improvements.

During the year, permission was given for the temporary establishment of a special grease distilling plant, but owing to the War, the plant had not been erected at the close of the year.

A considerable amount of attention was given to the question of nuisances caused by rabbit skin drying places and in two instances, establishments of this kind had to be closed.

In June an exceedingly offensive manure manufactory at which butcher's offal and fish refuse were used, had to be closed.

In December permission was given for an additional gut dressing place, but this had not been established at the close of the year.

GENERAL SANITARY WORK.

TABLE XXXII.—*Summary of Work done by Inspectors of Nuisances during 1914.*

Details of Work Done.	No. 1 District.	No. 2 District.	No. 2a District.	No. 3 District.	No. 4 District.	No. 5 District.	TOTALS.
(1) Premises visited on account of Nuisances	753	1,693	304	1,668	2,092	1,044	7,554
(2) Premises where Smoke test applied to Drains ...	504	349	65	377	382	297	1,974
(3) Premises where Water test applied to Drains ...	399	544	204	837	725	562	3,271
(4) Premises where Colour test applied to Drains ...	82	71	16	187	53	81	490
(5) Visits to Work in progress	2,876	2,752	1,108	4,713	4,842	4,031	20,322
(6) Miscellaneous Visits ...	1,600	2,449	909	2,762	5,174	3,490	16,384
(7) Interviews with Owners	132	394	73	611	459	270	1,939
(8) Nuisances abated ...	868	962	209	1,334	1,739	916	6,028
(9) Houses inspected under the Housing Acts ...	13	163	...	303	374	505	1,358
(10) Houses renovated under the Housing Acts ...	23	36	...	302	317	258	936
(11) Houses closed under the Housing Acts ... ..	...	8	...	...	33	23	64
(12) Houses Demolished under the Housing Acts ...	2	18	...	1	7	27	55
(13) Visits for Zymotic Diseases	749	773	344	1,171	1,469	1,697	6,203
(14) Visits for Disinfection of Premises	493	507	221	757	994	993	3,965
(15) Visits to Milkshops ...	61	106	112	53	151	410	893
(16) Visits to Butchers' Shops	...	...	...	1	...	...	1
(17) Notices served—							
(a) Statutory	224	404	82	627	1,328	396	3,061
(b) Informal	350	1,135	138	560	567	707	3,457
(18) Proceedings ordered ...	33	29	...	60	104	35	261
(19) Proceedings taken ...	...	6	...	7	3	3	19

DISINFECTING STATION.

The Disinfecting Station has been working at very full pressure during recent years. The requirement of the voluntary hospitals with regard to disinfection is one of the principal causes of the increase of work, the full extent of which is indicated in the following table which gives particulars of the heavier articles sent in for the purpose of disinfection during the past six years :

		Beds.		Blankets.		Mattresses.		Sheets.
1909	...	2,913	...	3,472	...	2,227	...	3,008
1910	...	2,725	...	3,364	...	2,243	...	3,564
1911	...	2,801	...	4,070	...	2,490	...	3,332
1912	...	3,311	...	5,726	...	2,495	...	3,549
1913	...	5,212	...	7,979	...	3,400	...	4,840
<hr/>								
Average								
1909—1913		3,392	...	4,922	...	2,571	...	3,659
<hr/>								
1914	...	5,703	...	9,673	...	3,808	...	4,719

During the year the question of an increase of the plant in order to get through the work more quickly was under consideration. It was ultimately decided to provide Drying Horses in a hot air chamber, the air being changed by an electric fan. This enables more use to be got out of the two disinfecting machines, and has worked very satisfactorily. The new apparatus was, fortunately, in working order soon after the outbreak of the War, as we have been asked to do a very large amount of extra work for the Military Authorities since August, 1914.

The following table gives a summary of the work during the year.

TABLE XXXIII.—*Disinfecting Station. Summary of Work during 1914.*

Number of Articles.	Description.	Number of Articles.	Description.	Remarks.
5,703	Beds	10,433	Pillows	
1,436	Bed Hangings	9,833	Pillow Cases	
5,333	Bed Slips	4,719	Sheets	These articles were
9,673	Blankets	1,378	Carpets	brought in from
6,558	Bolsters	3,304	Articles of Men's Clothing	4,405 private houses,
6,233	Bolster Cases	2,154	„ Women's „	and from 429
7,082	Counterpanes	5,230	„ Children's „	public institution cases.
3,808	Mattresses	11,567	Various Articles	

TABLE XXXV.—*Factories, Workshops, Workplaces and Homework.*

I.—INSPECTION OF FACTORIES, WORKSHOPS AND WORKPLACES.

Premises.	Number of		
	Inspections.	Written Notices.	Prosecutions.
Factories (including Factory Laundries) ...	525	16	—
Workshops (including Workshop Laundries) ...	2,236	54	—
Workplaces (other than Outworkers' premises included in Part 3 of this Table) ...	15	—	—
TOTALS	2,776	70	—

2.—DEFECTS FOUND IN FACTORIES, WORKSHOPS AND WORKPLACES.

Particulars.	Number of Defects			Number of Prosecutions
	Found.	Remedied.	Referred to H.M. Inspector.	
<i>Nuisances under the Public Health Acts :—*</i>				
Want of cleanliness	81	78	...	...
Want of ventilation	7	5	...	...
Overcrowding	4	4	...	...
Want of drainage of floors ... ..	...	...	...	...
Other nuisances	25	25	...	...
Sanitary accommodation { insufficient	6	4	...	...
{ unsuitable or defective	29	24	...	...
{ not separate for sexes	3	1	...	...
<i>Offences under the Factory and Workshop Acts :—</i>				
Illegal occupation of underground bakehouse (s. 101)	1	1	...	...
Breach of special sanitary requirements for bakehouses (ss. 97 to 100) ... ..	...	...	...	...
Other offences (Excluding offences relating to outwork which are included in Part 3 of this Table)	6	4	...	...
TOTALS	165	146	...	...

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

NATURE OF WORK	OUTWORKERS'					
	Lists received from Employers.					
	Sending twice in the year.			Sending once in the year.		
	Lists.†	Outworkers.†		Lists.	Outworkers.	
Con-tractors.		Work-men.	Con-tractors.		Work-men.	
Wearing Apparel—						
(1) making, etc.	148	414	258	8	...	14
(2) cleaning and washing ... ..	...	...	...	...	...	...
Household linen ... ..	...	...	...	...	...	...
Lace, lace curtains and nets	2	...	6	...	...	...
Curtains and furniture hangings ... ..	...	...	...	...	...	...
Furniture and upholstery	6	19	2	...	...	...
Electro-plate	204	2,518	194	1	...	2
File making	136	88	2,532	...	...	...
Brass and brass articles ... ..	...	...	...	...	...	...
Fur pulling ... ..	...	...	...	...	...	...
Cables and chains ... ..	...	...	...	...	...	...
Anchors and grapnels ... ..	...	...	...	...	...	...
Cart gear ... ..	...	...	...	...	...	...
Locks, latches and keys ... ..	...	...	...	...	...	...
Umbrellas, etc. ... ..	...	...	...	...	...	...
Artificial flowers ... ..	...	...	...	...	...	...
Nets, other than wire nets ... ..	...	...	...	...	...	...
Tents ... ..	...	...	...	...	...	...
Sacks ... ..	...	...	...	...	...	...
Racquet and tennis balls ... ..	...	...	...	...	...	...
Paper, etc., boxes, paper bags	2	...	6	...	...	...
Brush making ... ..	...	...	...	...	...	...
Pea picking ... ..	...	...	...	...	...	...
Feather sorting ... ..	...	...	...	...	...	...
Carding, etc., of buttons, etc. ... ..	...	...	...	...	...	...
Stuffed toys ... ..	...	...	...	...	...	...
Basket making ... ..	...	...	...	...	...	...
Chocolates and sweetmeats ... ..	...	...	...	...	...	...
Cosaques, Christmas crackers, Christmas Stockings, etc. ... ..	...	...	...	...	...	...
Textile weaving ... ..	...	...	...	...	...	...
TOTALS	498	3,039	2,998	9	...	16

† The figures in columns 2, 3 and 4 are the *total* number of the lists received from those employers who comply strictly with the statutory duty of sending *two* lists each year and of the entries of names of outworkers in those lists.

4.—REGISTERED WORKSHOPS.

Workshops on the Register (s. 131) at the end of the year.	Number.
Bakehouses and Confectionery	281
Tailoring and Dressmaking	952
Metal Workers	870
Wood Workers	355
Hand Laundries	12
Restaurant Kitchens	63
Miscellaneous	403
Total number of Workshops on Register	2,936

TABLE XXXVI.—*Summary of Smoke Nuisance Proceedings, during 1914, and during the previous ten years.*

Year.	Total Prosecutions.	Cases in which penalties imposed.	Cases in which orders made and costs imposed.	Cases withdrawn or dismissed.	Total penalties and costs imposed.			Average penalties and costs imposed.		
					£	s.	d.	£	s.	d.
1904	38	20	15	3	78	19	0	2	5	1
1905	56	34	21	1	105	12	6	1	18	5
1906	26	16	10	0	90	1	0	3	9	3
1907	55	33	20	2	108	13	0	2	1	0
1908	38	21	16	1	79	11	0	2	3	0
1909	25	9	13	3	68	16	0	3	2	7
1910	19	10	7	2	50	4	0	2	19	1
1911	5	4	1	0	11	12	6	2	6	6
1912	10	6	4	0	64	6	0	6	8	7
1913	15	9	6	0	42	6	0	2	16	5
1914	18	9	9	0	33	6	0	1	17	0

TABLE XXXVII.—*Details of Work done by Smoke Inspectors during 1914, and during the previous ten years.*

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914
Number of observations upon chimneys of each one hour ...	7730	7813	7995	7611	7504	8441	8119	8542	7842	7381	7738
Average number of minutes of black smoke per hour ...	3·1	3·0	2·9	3·2	2·9	2·4	2·4	2·2	2·5	2·6	2·6
Number of notices served ...	168	142	131	96	80	58	49	65	71	90	96
Number of complaints received	48	58	34	56	52	56	77	66	56	50	22
Number of new boilers put down	20	27	28	23	6	23	7	15	18	16	24
Number of chimneys erected ...	7	11	20	16	3	7	8	9	23	16	22
Number of chimneys raised ...	11	15	11	10	14	12	11	24	14	15	11
Appliances or improvements introduced ...	27	17	34	37	17	23	24	17	32	34	36

SALE OF FOOD AND DRUGS ACTS.

TABLE XXXVIII.—Food and Drugs Samples purchased in pursuance of the Sale of Food and Drugs Acts, also the number found to be Adulterated, during 1914 and the preceding ten years.

ARTICLES PURCHASED FOR ANALYSIS.	1904		1905		1906		1907		1908		1909		1910		1911		1912		1913		1914	
	TOTAL SAMPLES.	NO. ADULTERATED.	TOTAL SAMPLES.	NO. ADULTERATED.	TOTAL SAMPLES.	NO. ADULTERATED.	TOTAL SAMPLES.	NO. ADULTERATED.	TOTAL SAMPLES.	NO. ADULTERATED.	TOTAL SAMPLES.	NO. ADULTERATED.	TOTAL SAMPLES.	NO. ADULTERATED.	TOTAL SAMPLES.	NO. ADULTERATED.	TOTAL SAMPLES.	NO. ADULTERATED.	TOTAL SAMPLES.	NO. ADULTERATED.	TOTAL SAMPLES.	NO. ADULTERATED.
Milk ...	444	42	418	36	412	31	468	40	512	42	432	48	475	41	401	26	326	29	421	36	390	41
Butter Milk ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Butter ...	74	17	70	4	73	...	134	4	118	4	126	...	92	3	46	2	92	4	85	2	52	1
Margarine ...	11	...	7	...	2	...	1	...	1	...	...	...	...	...	1	...	1	...	5	...	5	...
Cream ...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	1	...
Cheese ...	18	5	10	2	7	...	17	...	22	...	23	...	19	...	19	...	21	...	18	...	20	...
Margarine Cheese	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lard ...	2	...	13	...	44	...	42	...	28	...	29	...	37	...	17	1	16	...	20	...	19	...
Bread and Butter	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Teacake and Butter	2	1	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Flour ...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whisky ...	50	12	62	13	60	10	44	2	19	3	20	...	48	7	21	1	28	4	29	...	30	4
Gin ...	...	...	8	...	45	2	33	...	5	2	8	1	26	7	17	2	23	3	22	1	24	6
Brandy ...	...	...	1	...	...	...	...	...	...	...	4	1	3	...	2	...	2	1	5	...	2	...
Rum ...	...	...	6	2	42	1	36	2	11	3	14	2	45	10	18	...	26	2	24	1	26	4
Honey ...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tea ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Coffee ...	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...
Vinegar ...	...	...	...	...	...	...	3	3	3	...	20	13	...	...	...	...	...	...	...	...	...	...
Pepper ...	10	...	7	...	4	...	3	...	10	...	27	...	40	1	19	2	42	4	17	...	23	...
Mustard ...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	2	...	...	...	...	...	...	...
Ground Ginger	8	...	10	...	3	...	1	...	5	...	4	...	...	...	11	...	2	...	3	...	1	...
Rice ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...
Paregoric ...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Paregoric S'bstit'te	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Laudanum ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...	...
Laud'n'm S'bstit'te	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Com. Liq. Powder	10	1	3	...	11	1	29	1	31	...	13	...	30	2	14	2	18	...	20	1	16	...
Swe't Spirit of Ni're	39	10	37	6	10	1	31	5	23	1	28	2	16	1	14	5	16	4	16	4	11	3
Friars Balsam ...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Camphorated Oil	22	2	41	3	10	...	30	1	26	1	32	...	31	...	12	...	27	...	14	...	17	...
Arrowroot...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Olive Oil ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tincture of Iodine	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
Saffron ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...
Baking Powder ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
TOTALS ...	699	91	696	66	723	46	875	59	817	56	784	67	863	72	614	41	654	52	699	45	640	59
Percentage adulterations Sheffield ...	13.0	9.5	6.4	6.7	6.9	8.5	8.3	6.7	8.0	6.4	9.2											
Percentage adulterations England ...	8.5	8.2	9.3	8.1	8.5	7.5	8.2	8.7	8.4	8.2	...											...

The figures given above do not correspond with those given in the reports of the Local Government Board, because the samples certified by the City Analyst to be below the standard, but not certified to be adulterated, are not included in the columns "No. Adulterated."

TABLE XXXIX.—*The Sale of Food and Drugs Acts. Samples purchased, adulterations, and proceedings taken in 1914.*

MILK	Number of Samples purchased	390
	" " found to be genuine	346
	" " found to be adulterated with water	10
	" " found to be deficient in fat	31
	" " found to contain a preservative	1
	" " found to be inferior in quality	2
	Result of proceedings.—Fines imposed—One, £4; three, £2 10s. each; one, £2 and 7s. costs; five, £2 each; one £1 and 19s. 6d. costs; one, £1 and 7s. costs; one, £1 and 4s. 6d. costs; two, £1 each; one, 15s. Four cases were withdrawn on payment of costs amounting to 16s. 6d. each; one on payment of 14s. 6d. costs, and nine on payment of 10s. costs. In nine cases a letter of caution was sent. One case was dismissed, and two were dismissed on warranty. One vendor was fined 25s. for obstruction, and one was fined £4 for refusing to sell to the inspector.	
CREAM	Number of samples purchased and found to be genuine	1
BUTTER	Number of samples purchased	52
	" " found to be adulterated	1
	" " found to be genuine	51
	Result of proceedings.—Fine imposed, £3, including costs.	
PEPPER	Number of samples purchased and found to be genuine	23
WHISKY	Number of Samples purchased	30
	" " found to be adulterated	4
	" " found to be genuine	26
	Result of proceedings.—Fines imposed—one, £1 and 7s. costs; two, £1 each; one, 15s. 6d.	
RUM	Number of Samples purchased	26
	" " found to be adulterated	4
	" " found to be genuine	22
	Result of proceedings.—Fine imposed—one, £1 and 7s. costs. Other three cases not taken into Court but a letter of caution sent.	
GIN	Number of Samples purchased	24
	" " found to be adulterated	6
	" " found to be genuine	18
	Result of proceedings.—Fines imposed—two, 15s. 6d. each. Other four cases not taken into Court, but a letter of caution sent.	
SWEET SPIRIT OF NITRE	Number of Samples purchased	11
	" " found to be adulterated	3
	" " found to be genuine	8
	Result of proceedings.—Fines imposed—two, £1 each; one, 15s.	
CHEESE	Number of Samples purchased and found to be genuine	20
LARD	Number of Samples purchased and found to be genuine	19
CAMPHORATED OIL ...	Number of Samples purchased and found to be genuine	17
COMPOUND LIQUORICE POWDER	Number of Samples purchased and found to be genuine	16
BAKING POWDER	Number of Samples purchased and found to be genuine	3
MARGARINE	Number of Samples purchased and found to be genuine	5
BRANDY	Number of Samples purchased and found to be genuine	2
GROUND GINGER	Number of Samples purchased and found to be genuine	1

During the year, 11 informal samples were taken, with the following results:—One sample of butter, and one of pepper were found to be genuine. One sample of butter consisted of margarine. One sample of lobster paste was found to contain 0.19 per cent. of boric acid added as a preservative. Seven samples of preserved cream were taken and were found to conform to the Public Health (Milk and Cream) Regulations, 1912.

REPORT OF THE CHIEF VETERINARY INSPECTOR FOR THE YEAR 1914.

VETERINARY STAFF.

During the first half of the year there was a staff of three qualified Veterinary Surgeons, occupied as follows:—In the inspection of dairies and cowsheds in the City and examining the udders of cows in the city cowsheds, or in country cowsheds from which diseased or suspected milk was sent into Sheffield; in inspecting meat, meatshops and slaughter-houses; in carrying out the veterinary and administrative work under the Diseases of Animals Acts; and in the veterinary supervision of the Corporation stud of horses. In May, Mr. H. P. Lewis, senior assistant veterinary inspector, was appointed to a similar position in Hull, and Mr. H. L. Torrance, of Shotts, Lanarkshire, was appointed to the staff. At the outbreak of the war, Mr. Torrance volunteered for service with the Army Veterinary Corps and was immediately accepted. Since that time, the veterinary staff has only consisted of two members, and the work of the department has been somewhat curtailed.

TRAM AND OTHER ACCIDENTS.

Sixteen cases of alleged damage to horses due to tram accidents were investigated, and reports made to the General Manager of the Tramways. Two cases were also investigated, and reported upon for the Highway and Sewerage Department.

SLAUGHTER-HOUSES.

According to the Town Improvement Clauses Act, 1847, every existing slaughter-house had to be registered. The earliest register which the Corporation possesses is dated 1865 and contains entries of 37 slaughter-houses. Of these, one is licensed as a horse slaughterhouse, one has been bought by the Corporation and is now let to a gut-dresser, and 7 have not been used for slaughtering purposes for upwards of three years. In addition to these there are 10 private slaughter-houses which the owners claim to have been registered, but of which there is no evidence of registration. There are also nominally 35 slaughter-houses belonging to the Corporation, which are practically always let.

The following list shows the number of slaughterhouses in the City at December 31st, 1914:—

No. of Slaughterhouses belonging to the Corporation and in use previous to 1865	35
No. of Slaughterhouses in use previous to 1865, of which there is no evidence of registration	10
No. of Slaughterhouses now in use and on the Register drawn up in 1865 under the Town Improvement Act, 1847	28
No. of slaughterhouses licensed under the Public Health Act, 1875	11
No. of slaughterhouses licensed annually under the Sheffield Corporation Act 1890	77
No. of Horse Slaughterhouses licensed	1
Total No. of slaughterhouses on the Register	162

Four slaughterhouses were transferred to new occupiers during the year.

Two new annual licences have been granted and two have been allowed to lapse.

In one case, a butcher continued to use a building as a slaughterhouse which was unlicensed. He had been invited to apply for a licence but would not do so. Prosecution followed, the butcher being fined £1 and costs. He then applied for and obtained an annual licence.

MEAT AND FOOD INSPECTION.

The following represents the work of meat inspection—

No. of visits to Slaughterhouses	4,287
No. of Visits to Market Places and Shambles	1,980
No. of Visits to Shops and Stores	2,922

In connection with Meat Inspection 287 notifications of 375 diseased or suspected animals or carcasses were received from butchers 36 being in respect of carcasses in private slaughter-

houses, and 251 in respect of carcasses in Slaughter-house 42 in the Killing Shambles, the slaughter-house set apart by the Health Committee for butchers to kill and dress suspected animals and carcasses as the case may be. After inspection of the 375 carcasses, 262½ were passed as fit for human food, the diseased parts (if any) being first removed and destroyed, and 112½ were condemned, being afterwards voluntarily surrendered by the owners for destruction. A payment of 1s. 6d. per cwt. is allowed by the Health Committee to the owners for carcasses so notified, surrendered and destroyed.

The particulars of the 55 carcasses of beef condemned during 1914 as being affected with Tuberculosis were as follows:—Ten were beasts bought by the butchers as sound animals, which when killed were found to be affected with Tuberculosis; 10 were the carcasses of city cows whose milk was found to contain tubercle bacilli; 20 were emaciated or badly affected cows slaughtered under the Tuberculosis Orders by order of the Sheffield City Council and the County Councils of Derbyshire and Yorkshire (West Riding); 10 were diseased cows killed by butchers on behalf of the owners. Particulars with regard to all carcasses condemned during the year will be found in the table which follows, but in addition, the following were also condemned and destroyed.

(1) *Fresh Meat*.—(a) Affected with Tuberculosis—29 beasts' offals; 10 beasts' heads; 11 beasts' hearts; 101 beasts' lungs; 45 beasts' livers; 27 beasts' spleens; 32 beasts' udders; 20 beasts' viscera; 1 calf's offal; 1 calf's lungs; 1 calf's liver; 2 pigs' offals; 2 pigs' heads; 5 pigs' lungs; 5 pigs' livers; and 5 pigs' spleens.

(b) Affected with other diseases or decomposing—12 beasts' offals; 3 beasts' heads; 8 beasts' hearts; 16 beasts' lungs; 52 beasts' livers; 3 beasts' spleens; 10 beasts' udders; 4 beasts' kidneys; 8 pigs' offals; 5 pigs' heads; 29 pigs' lungs; 5 pigs' livers; 3 pigs' spleens; 1 pig's udder; 3 sheeps' offals; 3 sheeps' heads; 3 sheeps' lungs; 4 sheeps' livers; 4 pieces of veal, 2 calves' offals, 2 calves' heads, and 2 calves' lungs, 2 calves' livers.

(2) *Preserved Food*.—155 pieces of bacon; 5,600 tins of canned food.

(3) *Foreign and Frozen Meat*.—16 bags and 101 pieces of beef; 1 bag of tripe; 36 bags of cow heels; 202 ox tails; 8 dozen sheeps' kidneys; 4 cwts. pigs' chitterlings.

(4) *Game, etc.*—52 hares; 1,490 couples of rabbits; 2 hampers of rabbits, 6 black game; 30 partridges; 6 brace of pheasants.

(5) *Poultry*.—6 couple fowls; 480 eggs.

(6) *Fruit*.—2 cases of pears; 22 bundles of tomatoes.

(7) *Vegetables*.—2 bags of cabbage; 2 baskets of mushrooms; 13 crates of lettuce.

(8) *Fish*.—896½ boxes, barrels, crates, etc., of various species.

The total weight condemned during the year was 37 tons 19 cwts. of meat; 26 tons 12 cwts. of fish; and 26 cwts. of fruit and vegetables. It should be pointed out that the latter figures do not include unsound fruit and vegetables dealt with at the Wholesale Market where it is the custom of wholesale dealers to sell questionable fruit, etc., to hawkers *subject to sorting*. This appears to be what is called a custom of the market and, by a recent decision, it appears to be perfectly legal. In the case *Cointal v. Myham & Son* it was decided that Section 55 of the Sale of Goods Act favoured that custom.

MEAT PROSECUTIONS.

During the year two magistrates' orders were required for the condemnation and destruction of bad meat. Three prosecutions were ordered by the Health Committee, one defendant being sent to prison for two months, the other two being fined £15 and £1 and costs respectively. One large firm was also cautioned by the Town Clerk.

TABLE XL.—Showing the number of Carcasses of Meat Condemned and Destroyed as being affected with Tuberculosis, and various other Diseases, and for other causes, during 10 years 1905 to 1914.

Year.	Number of Carcasses of Meat condemned and destroyed affected with Tuberculosis.						Number of Carcasses of Meat condemned and destroyed affected with various other diseases and for other causes.					
	Beef.	Mutton	Pork.	Veal.	Lamb.	Goat.	Beef.	Mutton	Pork.	Veal.	Lamb.	Goat.
1905	22	1	1	1	...	...	31	39	10	43½	2	...
1906	42	...	...	1	...	...	37	35	2	36	4	2
1907	38	...	1	2	...	...	44	46	4	53	2	...
1908	46	...	2	1	...	...	48½	49½	8	44	7	...
1909	58	...	1	1	...	...	42½	64	8	39	3	1
1910	57½	1	¼	1	...	...	29½	55	6½	47	3	...
1911	85½	2	18	1	...	...	61½	123	28	105	...	...
1912	64½	...	18	...	...	...	56½	54½	18	108	5	...
1913	67½	...	4	1	...	...	25	42½	8	42	9	...
1914	55	...	5	1	...	...	34	26	23	30	5	...

DAIRY INSPECTION.

In addition to examining the udders of the milking cows in the city cowsheds, the Veterinary Inspectors inspect the sanitary conditions of the cowsheds, dairies, and milk vessels, and take note of the cleanliness of the cows, also of the feeding and general management. In the case of two poor samples of genuine milk found by chemical analysis, enquiries were made into the principles and methods of feeding the cows, and friendly advice given to assist the owners in improving the quality of the milk. During the year over 750 visits were made to dairy farms within the city. Four new cowsheds were built during the year, giving accommodation for 41 cows. Three new dairy wash-houses were also provided. During the year, seven dairy farms in the Rivelin Valley came into the City area, under the Sheffield Corporation Act, 1914, giving a total accommodation for 85 cows.

TUBERCULOSIS AND MILK.

The power of the Health Committee to deal with tubercular infection in milk is contained in the Tuberculous Milk Clauses of the Sheffield Corporation Act, 1900, and in the Dairies, Cowsheds and Milkshops Amended Order of 1899. The latter only gives power over milk from cows housed in the city cowsheds; the former applies to milk sold within the city, whether produced by cows inside or outside the city.

In carrying out the executive work under these powers three kinds of samples of milk are taken: mixed, control and special. A *mixed sample* is generally one of country milk brought into the city by road or rail conveyance. In 1914, 1 mixed sample was taken from a herd of city cows for the reason that the city cows were temporarily at grass outside the city boundaries. A *control sample* is one taken to check the veterinary examination of the cows' udders when (1) in following up tuberculous mixed milks no cows can be found exhibiting signs of tuberculosis of the udder, or from remaining cows in the herd after excluding cows with suspected udders from which special samples have been taken; (2) in city cowsheds when the cows examined approach twenty in number in any given shed. A *special sample* is one taken from a cow showing some abnormal condition of the udder more or less indicative of tuberculosis.

Premature Deaths of Inoculated Guinea-pigs.—A very considerable increase in the number of premature deaths in connection with the biological test of milk samples in guinea-pigs took place towards the end of the year and to some extent interfered with the accuracy of the results obtained at that time. Cows suffering from some septic condition of the udder often give milk which proves fatal to the inoculated animals in a few days, and such cases may occur at any time. The fact that at the end of the year these premature deaths became epidemic pointed to the

presence of some infection amongst the test animals or to the insanitary condition under which they were housed. The University Authorities took precautions against both conditions (1) by obtaining guinea-pigs from a fresh source (2) by keeping them in a fresh house, with the result that premature deaths again assumed a more normal percentage. Eighty-one premature deaths occurred in only four of which could the result be given as positive. A considerable number of the negative (mixed) samples were repeated.

During the year 595 samples of mixed milk coming into Sheffield were taken for bacteriological examination, 43 of which, equal to 7·2 per cent., gave a positive result, whilst 552 were negative. 326 of the mixed samples came into the City by road conveyances, 21 of which (6·4 per cent.) were tuberculous, whilst 269 came by rail, 22 of which (8·2 per cent.) were tuberculous, figures which seem to indicate that the herds nearest Sheffield are least affected with tuberculosis of the udder.

In following up the 43 tuberculous samples, 61 visits were made to 51 farms, and the udders of 805 cows examined. At 22 of these farms 23 cows with tuberculous udders were found. At the remaining 29 farms no cows with tuberculous udders were found, and subsequent control samples of the mixed milk from these farms were proved negative by bacteriological examination. In most of these instances the farmers had sold cows off the farms during the period intervening between the taking of the tuberculous mixed sample and the date of the inspection. Eight farms were visited because the milk sellers obtained part of their milk supplies from them.

The average number of cows found at the 51 farms from which tuberculous mixed samples were sent was 16, and if we allow that number for the 553 farms from which the negative mixed samples were sent, we have 8,848 cows, the milk from which was examined bacteriologically and proved negative. The total number of country cows examined, either clinically or (through their milk) bacteriologically, will thus total up to (805+8848) 9,653, amongst which 23 cows with tuberculous udders were found, equal to a percentage of 0·24. If we take the percentage of 23 tuberculous udders amongst the 805 country cows clinically examined, the figures work out at 2·9 per cent.

Control Samples.—Altogether 84 control samples were taken, 58 representing 49 farms and 717 cows, being taken from country herds, and 26 representing 21 farms and 391 cows, from city herds.

Seven of the country samples, equalling 12·1 per cent., and two of the city samples (7·7 per cent.) were found to be tuberculous. At six country farms some difficulty in finding the cows giving tuberculous milk was met with and 14 control samples had to be taken, of which 7 were positive, before the implicated cows were found. At 3 city farms, 8 control samples were taken but as already stated only 2 altogether were positive.

Special Samples.—A total of 108 special samples were taken, 29 being from City cows, 9 of which (31 per cent.) were positive and 79 from country cows, 23 of which (29 per cent.) were positive.

The number of cowshed premises inside the city was 210, having 353 cowsheds and accommodation for 2,904 cows. The occupiers of 11 of these premises (=246 cows) have given up keeping cows to produce milk for sale. The total maximum number of cows kept in the city was 2,697. Allowing each cow to be in a city cowshed eight months, it follows that about 4,000 fresh cows must be added to that number, making about 4,000 in the city cowsheds to be examined during the year. The number of inspections of city cows made was 8,740 and 10 cows having tuberculous udders were discovered—equal to a percentage on 4,000 of 0·25. One city cow affected with tuberculosis of the udder was also notified by the owner under the Tuberculosis Order of 1913 making a total of 11. The number of visits made by the Assistant Veterinary inspectors to the city farms was 751.

Including country cows examined 108 showed symptoms suspicious of Tuberculosis of the udder, and a sample of milk was taken from each of them for bacteriological examination. 32 proved positive, 76 giving negative results. Two city cows were condemned on microscopical examination of the milk alone, making a total of 34.

The 34 cows thus definitely proved to have tuberculous udders were disposed of as follows:—9 were sold by the owners and were lost sight of; and 25 were killed, the carcasses of 9 being passed as human food after the diseased parts had been first removed and destroyed, and 16 totally condemned and the carcasses destroyed at the destructor or knackers' yards.

The next table gives a summary of the results obtained under the Tuberculous Milk Clauses since they were first put into force in 1901:—

TABLE XLI.—Summary of Results obtained under the Tuberculous Milk Clauses, Sheffield Corporation Act, 1900.

Number of Samples of Milk bacteriologically examined for Tubercular infection.

	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	TOTALS & AVER-AGES.
Mixed Samples	—	28	66	89	68	115	175	251	184	336	358	447	632	595	3,344
Tuberculous	—	5	11	6	10	11	17	25	20	35	34	34	45	43	296
Percentage	—	17.8	16.7	6.7	14.7	9.6	9.7	9.9	10.9	10.4	9.8	7.6	7.1	7.2	8.8
Control Samples	—	1	7	11	17	8	39	62	56	100	128	75	53	84	641
Tuberculous	—	—	—	3	6	1	8	7	8	10	14	4	7	9	77
Percentage	—	—	—	27.3	35.3	12.5	20.5	11.2	14.3	10.0	11.0	5.3	13.2	10.7	12.0
Samples from cows with suspicious udders	7	20	31	27	29	17	188	173	236	253	159	150	123	108	1,521
Tuberculous	3	9	9	9	13	11	43	47	60	51	50	46	38	32	421
Percentage	42.8	45	29	33.3	44.8	64.7	23.4	27.1	25.4	20.1	31.4	30.7	30.9	29.6	27.7
Estimated number of cows on country farms where mixed milk samples were free from Tuberculous infection	—	345	2,967	2,350	1,339	1,820	4,108	3,842	2,460	5,418	5,491	5,782	9,392	8,848	54,162
No. of country cows clinically examined for Tuberculosis of the udder, in following up tuberculous mixed samples	—	75	622	170	231	279	783	544	451	760	648	685	1,690	805	7,743
Tuberculous	—	2	6	1	9	10	15	13	18	29	23	29	29	23	207
Percentage	—	2.7	.96	.59	3.9	3.6	1.9	2.4	4.0	3.8	3.5	4.2	1.7	2.8	2.7
No. of city cows clinically examined for tuberculosis of the udder	1,067	2,264	672	1,774	1,521	1,434	8,808	13,587	13,958	9,573	8,784	7,531	7,747	8,740	87,460
Tuberculous	5	7	3	8	4	2	29	34	42	22	28	18	8	10	220
Percentage	.47	.31	.45	.45	.26	.14	.8*	.9*	1.1*	0.6*	0.7*	0.5*	0.2†	0.25†	0.3
Disposition of cows with tuberculous udders—															
Killed	5	9	7	7	12	11	39	45	50	46	44	43	40	25	383
Passed	2	5	4	6	9	6	26	33	37	27	20	23	15	9	222
Percentage	40	55.5	57.1	85.7	75	54.5	66.6	73.3	74.0	58.7	45.4	53.5	37.5	36.0	58.0
Condemned	3	4	3	1	3	5	13	12	13	19	24	20	25	16	161
Percentage	60	44.5	42.9	14.3	25	45.5	33.3	26.7	26.0	41.3	54.6	46.5	62.5	64.0	42.0
Sold or otherwise lost sight of	—	—	2	2	1	1	5	2	11	5	7	4	3	9	52

*Percentage on 3,600 only.

†Percentage on 4,000 only.

DISEASES OF ANIMALS ACTS AND ORDERS.

SUSPENSION AND SUBSTITUTION OF ORDERS.

The most important feature in connection with the Contagious Diseases of Animals was the substitution of the Tuberculosis Order of 1914, for Order of 1913. But this new Order, the Parasitic Mange Order and several Sheep Dipping Orders were suspended on the 6th August, immediately after the outbreak of the war.

The most serious matter, however, was the great increase in the outbreaks of Swine Fever. Seventy cases suspicious of Swine Fever were reported to the Board of which 42 were confirmed, whereas during the previous 5 years the confirmed cases only totalled 27. This serious condition of affairs caused the Board of Agriculture & Fisheries to declare Sheffield a Swine Fever Infected Area, the consequences of which were practically the abolition of dealing in store pigs and the necessity of obtaining licences for every movement of swine.

ANTHRAX.

Four suspected outbreaks of Anthrax were reported on premises in the city. Each case was investigated but the presence of the disease was not confirmed.

PARASITIC MANGE.

Fifty suspected outbreaks of this disease in studs in the City were dealt with during the year. In 41 cases the existence of the disease was confirmed. Fifty-three horses were affected. All were isolated and medically treated until cured or slaughtered. Two hundred and forty-three in-contact horses were also inspected. Under the Parasitic Mange Order of 1911, in addition to notification by the owners of suspected or affected animals it is also compulsory for veterinary surgeons to report such cases occurring in their practice. Thirty cases were so notified. Several were also notified by the Inspectors of the Sheffield Society for the Prevention of Cruelty to Animals, by the City Police and by the Assistant Veterinary Inspectors. In connection with two outbreaks prosecutions were ordered. The two owners were fined £5 respectively for failing to isolate and notify. In addition, in one case the horsekeeper was fined £1, and in the other case the driver was fined £1 for working a horse whilst affected with the disease. The Order was suspended on August 6th.

SWINE FEVER.

Two hundred and forty-seven cases of illness or death of pigs were reported during the year. In 70 cases the symptoms or post mortem appearances were suspicious of Swine Fever, and the cases were consequently reported to the Board of Agriculture and Fisheries in compliance with the Swine Fever Order. These cases were investigated by the Veterinary Inspectors of the Board, and forty-two were confirmed as Swine Fever. Owing to the large number of pigs which had been directly or indirectly in contact with the affected pigs, 79 notices of detention and isolation had to be served, 549 pigs being concerned. Over two hundred visits had to be made to see the Orders were being observed. Seven prosecutions were ordered for offences in connection with Swine Fever and movement of swine. Fines ranging from costs in one case to £5 in three others being imposed.

SWINE MOVEMENT ORDERS.

The following summary shows the number of pigs for which movement licences were issued during the year:—

Number of store pigs licensed into the City	...	...	...	...	...	2,039
„ fat pigs licensed to sale yards and slaughterhouses in the city	...	...	...	...	...	49,027
„ fat pigs licensed from sale yards to slaughterhouses in the city	...	...	...	...	...	37,972
„ fat pigs licensed to slaughterhouses outside the city	...	...	...	...	...	2,699

In connection with Swine Movement Licences, 250 visits were made to sale yards, lairs, and other premises.

SHEEP DIPPING.

The Scotland and North of England Sheep Dipping Order of 1907 was one of the Orders suspended at the commencement of the war. Under the Order two dipping periods were appointed the first of which was practically completed when the Order was suspended. Several of the sheep owners, however, elected to comply with the Order so far as the second dipping period was concerned. In the first period the number of sheep dipped was 376 and in the second 196. The portion of Sheffield lying between the Midland Railway from Chesterfield and the Great Central Railway from Penistone is included within the Yorkshire (West Riding) and Peak District (Sheep Dipping) Order of 1912. This Order was not suspended. To comply with this Order sheep had to be dipped twice during the month of September with not less than 10 days and not more than 21 days interval between the first and second dippings. Six owners, having 196 sheep, complied with the Order.

SHEEP SCAB.

One suspected outbreak of sheep-scab was reported during the year, 15 animals being suspected. Veterinary inspection confirmed the existence of the disease. The sheep were isolated and repeatedly dipped in accordance with the Sheep Scab Order until cured.

TUBERCULOSIS.

The Tuberculosis Order of 1913 continued in force up to June 30th. During the six months ending at that date 17 notifications were received and in 14 cases the existence of the disease was confirmed, 14 animals being slaughtered under the Order. The total compensation paid was £42 5s. 5d. On July 1st, the Tuberculosis Order of 1914 came into force. Under this Order two notifications were received, two animals being slaughtered and £15 19s. 10d. paid as compensation. The new Order considerably extended the operations against Tuberculosis in cattle and materially increased the amount of funds paid by the Treasury to Local Authorities for the purposes of compensation and administration. The following are the chief alterations in the Order:—

1.—*Scope of the Order.* The Order has been extended so as to include any bovine animal which is suffering from a chronic cough and showing definite clinical signs of Tuberculosis but not necessarily accompanied by emaciation.

2.—*Valuation for Compensation.*—In the 1913 Order two valuations were required, first, on the basis that the animal was free from Tuberculosis, the second, that it was affected with Tuberculosis. In the new Order only one valuation (market value) is required.

3.—*Compensation.* If the post-mortem examination shows that the animal was free from Tuberculosis full market value plus the sum of 20s. has to be paid. If the carcase is found to be affected with Tuberculosis but fit for food, three-quarters of the market value has to be paid. If the carcase is found to be affected with advanced Tuberculosis and in consequence has to be condemned, one-quarter of the market value or 30s. has to be paid. If the sum received on the sale of the carcase exceeds the amount to be paid as compensation the Local Authority has to pay the excess to the Owner.

4.—*Precautions with respect to Milk.* An Order served under this Article ceases to have effect at the end of three days unless in respect of a cow to which a notice of intended slaughter has been served when the notice as to the milk extends to the day of slaughter.

5.—*Treasury Grant.* In a letter dated the 23rd June and addressed to Local Authorities, the Secretary of the Board of Agriculture stated that three-fourths of the gross compensation paid, less excess salvage received, will be refunded to Local Authorities.

This is apparently to cover or assist in covering the cost of administration. To show the advantages to Local Authorities under the new Order, I have prepared the appended comparative statement from which it will be seen that instead of the Corporation being out of pocket £15 8s. 10d. as under the 1913 Order, there would be under the new arrangements a gain of £43 18s. 7d.

TUBERCULOSIS ORDERS.

Comparative Statement showing the result of the compensation clauses under the Orders of 1913 and 1914.

Animals Slaughtered—37.

	1913			1914		
	£	s.	d.	£	s.	d.
Gross compensation paid	117 14 1			
Less excess salvage	17 19 1			
			<u>99 15 0</u>			99 15 0
Gross salvage received	108 15 11			
Less excess salvage	17 19 1			
Less expenses of slaughter	21 19 6			
			<u>39 18 7</u>			
			68 17 4			68 17 4
Nett. compensation paid	30 17 8			30 17 8
Treasury Grant $\frac{1}{2}$ nett compensation	15 8 10			
						$\frac{3}{4}$ gross compensation
						less excess salvage
						<u>74 16 3</u>
Cost to Corporation, being nett compensation less Treasury Grant	15 8 10			
			<u>15 8 10</u>			
Gain to Corporation, being Treasury Grant less nett cost of compensation						<u>43 18 7</u>

As stated above, only two animals were dealt with under the 1914 Order, the latter being one of the Orders suspended on the outbreak of the war. The following statement shows that the action taken under the Order resulted in a profit to the Corporation of £9 0s. 9d.

	£ s. d.				£ s. d.		
Compensation paid...	12 19 10	Net salvage received	...	...	12 19 10
Compensation paid	3 0 0	„ „ „	...	...	0 15 9
			<u>15 19 10</u>				
Total		Treasury Grant being $\frac{3}{4}$ of the gross compensation less 19/10 excess salvage	...	...	11 5 0
							<u>25 0 7</u>
				Deduct	...	...	15 19 10
							<u>9 0 9</u>
				Surplus	...	...

RABIES.

There were two suspected cases of rabies to investigate during the year, but the existence of the disease was not confirmed.

FOREIGN DOGS.

During the year 9 foreign dogs were licensed into the city, under the Importation of Dogs Order of 1901. They belonged to three different owners, and all were dogs performing at Sheffield music halls. Six visits were paid to see that the Board of Agriculture's conditions were being complied with by the owners.

ANIMAL TRANSIT.

Over five hundred and twenty visits were made to the railway stations and cattle landings for the purposes of the Animals (Transit and General) Order of 1912, and the Exportation of Horses Orders of 1910. Several visits were also made to slaughterhouses in connection with the importation of animals from Ireland.

FOOT AND MOUTH DISEASE IN IRELAND.

In consequence of outbreaks of this disease in Ireland, considerable work fell on the Veterinary staff in tracing and examining suspected animals that have been landed from Ireland about the same time that the disease appeared. Fortunately all these animals were fat and intended for immediate slaughter. Later large numbers of Irish animals were licensed from the port of landing to slaughterhouses in the city, where they had to be detained under observation until slaughtered. The premises of 15 butchers had to be regularly visited for nearly four months, 660 cattle, 1,314 sheep and 432 pigs being inspected.

NOTIFICATION OF DISEASE.

Under the Animals (Notification of Disease) Order of 1910 Veterinary Surgeons in practice are required to notify the existence or suspected existence of the scheduled contagious diseases of animals occurring in their practices. As already stated a considerable number of cases of Parasitic Mange and Tuberculosis were so notified.

Owing no doubt to the existence of notification under the Tuberculosis Order, owners of cattle have become impressed with the necessity of notifying animals suspected of contagious disease. Five notifications have been received since the order was suspended. Veterinary assistance was given to the owners in each case and the animals were slaughtered at the Corporation slaughterhouse or sent to the knacker yard as seemed necessary.

HORSE SALES.

The weekly auctions of horses and the horse fairs were regularly visited as required by the Glanders and Farcy Order of 1907.

MARKETS AND SALEYARDS.

Repeated visits were made to the Calf Market, and the saleyards authorised for the sale of pigs were visited at least three times weekly.

VETERINARY CHARGE OF CORPORATION HORSES.

In connection with the treatment of sick and lame horses in the Corporation studs, 540 visits were made to 10 stable depots. Veterinary advice was also given to the different committees in connection with the purchase of new horses and the sale or slaughter of horses unfit for further service owing to disease, lameness, etc.

Appended is a table showing the number of visits to each stable depot.

Stable Depot.	No. of visits.
Heeley	131
Olive Grove	77
Penistone Road	84
Woodside	45
Worthing Road	91
Lodge Moor	2
Winter Street	7
Westbar	50
Carver Lane	49
Rockingham street	4
	<hr/> 540 <hr/>

PROSECUTIONS.

TABLE XLII.—Showing the prosecutions during the year, the Act or Order under which proceedings were instituted, the nature of the offences and the penalties imposed.

No. of case.	Act or Order under which prosecution was taken.	Nature of Offence.	Penalty imposed.
1	Swine Fever Orders ...	Failure to notify swine fever	£5
2	"	"	£2
3	"	"	withdrawn on payment of costs.
4	"	Movement of swine without licence	£1
5	"	Failure to notify swine fever	owner £5, servant in charge £1.
6	"	Failure to keep register of sales	£5
7	Parasitic mange order	Failure to report mange	owner £5 ; horsekeeper £1.
8	"	"	£5
9	"	Working horse with mange	£1
10	Public Health Acts ...	Failure to notify diseased carcass	£1 and cost.
11	"	Depositing diseased meat	owner 2 months imprisonment, salesman £2 and costs.
12	"	"	£15
13	"	Exposing diseased meat ...	£10 and costs.
14	"	Unlicensed slaughterhouse	£1 and costs.

J. S. LLOYD, F.R.C.V.S., D.V.S.M.Vict.,
Chief Veterinary Inspector.

.. REPORT ..

TO THE

Health Committee of the Sheffield City Council

ON THE RESULTS OBTAINED BY THE

Chemical Investigation of Rain Water collected at various sites in the City Area.

In March, 1909, a Smoke Abatement Exhibition was held in Sheffield, and, although the meetings held in connection with it may have done little towards reducing the amount of Sheffield smoke, they led to the foundation of a Smoke Abatement League, which in 1912 promoted the first International Conference on Smoke Abatement. This Conference, held in London, appointed a Committee for the investigation of Atmospheric Pollution under the chairmanship of Sir Napier Shaw, F.R.S., Head of the Meteorological Office. In co-operation with the work of this London Committee, the study of the impurities washed out of the atmosphere by falling rain was undertaken by 12 English and 5 Scottish towns on a pre-arranged scheme of monthly observations.

After preliminary enquiries had satisfied the Sheffield Medical Officer of Health that the University was willing to co-operate with the Health Committee of the City in conducting an enquiry of this nature, a sub-committee was appointed consisting of the following members:

COUNCILLOR	W. BASHFORTH	...	Health Committee of the City Council.
"	J. BENSON	...	" " " "
"	P. J. BENSON	...	" " " "
"	H. BOLTON	...	" " " "
"	J. HINCKLEY	...	" " " "
"	H. W. JACKSON	...	" " " "
"	S. ROBERTS, JUNR.	...	" " " "
"	T. P. STOKES	...	" " " "
PROFESSOR	W. M. HICKS	...	The University.
"	W. P. WYNNE	...	" "
DR. H. SCURFIELD	...	...	Medical Officer of Health.
MR. E. HOWARTH	...	...	Curator, Weston Park Museum
MR. W. NICHOLSON	...	...	Chief Smoke Inspector.

Authority having been obtained from the City Council for the purchase of four standard soot gauges and for the payment of a chemist to collect and analyse the rain water, it was arranged by the sub-committee, with the sanction of the University Council, that the analytical work should be carried out under the supervision of Professor Wynne in the Chemistry Laboratories of the University.

The standard soot gauge designed by the London Committee is shown in Fig. 1. It consists of a circular enamelled iron gauge vessel of four square feet superficial area. Projecting above the vessel is a wire screen open at the top, intended to prevent birds from settling on the edge of the vessel. The gauge vessel is conical at the bottom and communicates, by means of a glass tube and rubber connection, with a group of three or more bottles of 15 litres' capacity, designed to hold one month's rainfall, and arranged so that as one fills, its contents siphon over into the next. The rain and deposited matter falling on the gauge are collected in the bottles, and at the end of the month any dust remaining in the gauge is washed down with some of the collected water, adhering matter being removed with a brush. The illustration is reproduced from a photograph of the apparatus fixed in Weston Park. During the winter, each set of three bottles was wrapped in a blanket, and the sides of the gauge protected by matchboarding to prevent breakage of the bottles by frost.



FIGURE 1.

At the end of each month, the bottles were disconnected, replaced by empty bottles and the contents analysed after the water had become clear by subsidence of the suspended matter. By filtration, the insoluble matter which collected almost wholly in the first bottle, was separated; when dry, it was extracted by carbon disulphide to remove tarry matter and afterwards ignited to get rid of carbonaceous material, the residue consisting of mineral matter in which iron was always present. From the relative amounts of tarry matter and of carbonaceous material, an estimate can usually be formed of the extent to which smoke from household chimneys is responsible for the impurity in the air, as works' chimneys emit little tar owing to the much higher temperature at which the fuel is burned in boiler furnaces.* The filtrate from the insoluble matter contains chloride, sulphate, ammonia, lime, &c., and may be acid, neutral or alkaline. Of these constituents, the first three were determined. The chloride is derived probably from dust and possibly to some extent from sea spray carried inland by the wind; the sulphate owes its origin to the combustion of sulphur in coal, coke or coal-gas, and in the form of sulphuric acid is responsible for the damage to the exterior of buildings and to metal fittings in houses; the ammonia arises from the imperfect combustion of coal, and, like tarry matter, affords a criterion of smoke from household chimneys.*

*These distinctions between household and industrial smoke become obscured when, as in Sheffield, many reheating and annealing furnaces are in operation, for which coal is burned so as to produce the smoke necessary for the metallurgical processes involved.

At the first meeting of the sub-committee, it was resolved that four gauges should be used in the enquiry, and that these should be fixed as nearly as possible in directions respectively north, south, east and west of the Town Hall. Mr. Howarth undertook to select sites, and with the sanction of the Parks' Committee, the positions adopted were the following, due regard being had to the gauges being fixed at the ground level and at some distance from buildings :—

Attercliffe.—Gauge No. 23, placed in Attercliffe Burial Ground, an open space dedicated to public use, approximately 2 miles E.N.E. of the Town Hall and 148 ft. above sea level. Many of the large steel works are to be found in the district and it is densely populated.

Hillsborough Park.—Gauge No. 24, placed in Hillsborough Park approximately 2 miles N.N.W. of the Town Hall and 250 ft. above sea level. Many of the smaller works are to be found in the district and it has a large population.

Meersbrook Park.—Gauge No. 25, placed in Meersbrook Park approximately 2 miles S. of the Town Hall and 362 ft. above sea level. The district has a large population citywards but few factories.

Weston Park.—Gauge No. 5, placed in Weston Park, approximately 1 mile W. of the Town Hall and 425 ft. above the sea level. The site lies above a densely populated area in the valley of the Don, below Hillsborough.

Only during the first month, and then but to a slight extent, were the gauges interfered with, and thanks are due to the respective Park Keepers who kept them under observation.

The analytical data obtained are set out on pp. 69 and 70. From them have been constructed curves to show in a comparative form the amounts of the more important impurities collected during each month at the four stations. These results are given in the units chosen by the London Committee on Atmospheric Pollution, viz., in metric tons (1,000 kilograms) per square kilometre, but can be converted into tons per square mile by multiplying the respective values by 2.55, the latter unit being, therefore, approximately two-and-a-half times larger than the former.

INSOLUBLE MATTER.—This consists of soot and the insoluble part of dust ejected by chimneys or raised from road surfaces by the wind or movement of traffic. The diagram (Figure No. 2), shows that while the amount of this insoluble matter in the Attercliffe district diminished on the whole, that in the other three districts increased. The Weston Park result for November is remarkable as being the highest recorded in any month for the Parks; no explanation can be suggested for so high a value. The Attercliffe results for April and May are also remarkable, either when considered by themselves or in comparison with those from the Parks; possibly the low values may be due to dispersal of some of the dry dust in the gauge by wind or to some local condition which has escaped observation. That these low values are not to be regarded as arising from some temporary improvement in the Attercliffe atmosphere seems evident from an inspection of the diagram, setting out the amount of dissolved solids for these months (Figure No. 4), where no such striking alteration in the character of the curve is to be observed.

Combustible Matter.—This consists of tarry matter, soluble in certain solvents such as carbon disulphide, and of other carbonaceous matter, comprising unburnt carbon from fuel, animal debris (manure), &c. The monthly variation in its amount is shown in figure No. 3. After removal of this carbonaceous material by ignition, the residue contains the mineral constituents of ordinary dust. Reference to the analytical tables (p. 69), will show that the amount of tarry matter, after the expiration of the first three months varied so little as to make a separate diagram unnecessary, also that it was about twice as much in the Attercliffe district as in any of the Parks. It is this tarry matter which is largely concerned in the formation of town fogs, and is the cause of the slow dispersal of town as contrasted with country fogs. Small as the amount of this constituent may seem to be, when the data are examined, tar is the least desirable impurity in the atmosphere, and the one which either by a radical reform in the methods of burning household coal in grates or by the substitution of other fuels for bituminous coal, should as far as possible be prevented from finding its way into it.

DISSOLVED MATTER.—This consists of those impurities which are either washed out of the air by rain or are dissolved out of soot and dust when left in contact with rain water in the collecting bottles and, doubtless, under natural conditions. In so far as this dissolved material is not acid, it may be looked upon as comparatively unobjectionable, but the well-known taste of a Sheffield smoke fog, due to sulphur dioxide arising from the combustion of the sulphur constituent of coal, coke and coal-gas, and the irritating effect on the lungs, afford evidence that this product of combustion before solution in water is as injurious among soluble atmospheric impurities as tarry matter is among the insoluble. Actually, the sulphur dioxide is oxidised in contact with air and water into sulphuric acid and is determined in the rain water as sulphate; the sulphate values shown in the diagram (Figure No. 5), correspond in the main, if not entirely, with that part of the sulphur constituent of coal, coke and coal-gas which is burnt to sulphur dioxide. Reference has been made to the possible origin of the chlorides; there is no reason to suppose that in Sheffield, either sulphate or chloride is due to emission from chemical works, as the number of these is too small to be taken into account in this connection.

The diagram for dissolved solids (Figure No. 4), shows an improvement in the air of the Attercliffe district and a deterioration in that of the Parks towards the close of the twelve months. It may be noted that these changes seem to be connected with the variation in the sulphate constituent, which in the Attercliffe district is actually below that of the Parks for the last four months of this period, whereas the chloride constituent shows no appreciable relative change. The variations in the amount of ammonia are so slight as to make a separate diagram unnecessary. It will be seen from the analytical data that the Attercliffe values in nearly every month are higher than those for the three Parks. This result, which implies incomplete combustion of coal, may arise from the production of black smoke in certain metallurgical operations; it is of interest to note, therefore, that the figures recorded for tarry matter, again a product of incomplete combustion, also show that it is in the Attercliffe atmosphere that the largest proportion of this objectionable constituent is found.

In the instructions issued by the London Committee, reference is made to determinations of the acid, neutral, or alkaline reaction of the rain water collected by the soot gauges, but no precaution seems to have been taken that the glass collecting bottles supplied with the approved standard apparatus were resistant to the action of water. An acid rain water is most undesirable, on account of its solvent action on building materials containing lime, but after two months' trials had shown that the water in the bottles was alkaline in reaction, it was decided to abandon this part of the enquiry. The alkalinity could be due to two causes: the first, the presence of free ammonia, which—taking all the factors into account—seemed unlikely; and the second, alkalinity derived from the glass by the solvent action of rain water, which if collected early in any month, might remain in contact with the surface of the bottle for so long as six weeks. Experiment showed that the glass of the bottles was attacked in the way suggested, and that the solvent action of successive quantities of water had not come to an end during the four months over which the tests were made.

In the tables of analytical data which follow, A stands for Attercliffe, H for Hillsborough Park; M for Meersbrook Park, and W for Weston Park.

INSOLUBLE MATTER.

Total Weight of Insoluble Matter.

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
A ...	15.71	14.55	14.06	13.78	13.49	12.92	12.37	10.46	12.34	9.93	9.64	12.06
H ...	2.96	4.11	3.07	5.59	6.36	4.83	5.89	6.02	5.64	5.80	6.33	7.20
M. ...	3.53	2.73	3.47	4.94	4.36	3.18	5.67	4.80	7.18	5.49	5.24	6.94
W. ...	5.16	3.81	5.44	4.67	7.92	4.68	5.25	3.14	5.92	4.71	6.62	7.78

Tarry Matter extracted by Carbon Disulphide.

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
A....	0.36	0.48	0.69	0.27	0.12	0.13	0.13	0.19	0.14	0.14	0.09	0.10
H. ...	0.47	0.36	0.10	0.06	0.06	0.09	0.08	0.11	0.08	0.08	0.07	0.04
M. ...	0.06	0.48	0.42	0.13	0.05	0.10	0.08	0.08	0.08	0.07	0.07	0.06
W. ...	0.49	0.55	0.40	0.11	0.11	0.12	0.08	0.09	0.05	0.05	0.05	0.05

Carbonaceous Matter insoluble in Carbon Disulphide.

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
A....	3.48	3.45	3.16	4.78	4.01	4.02	3.78	3.20	3.84	3.01	3.02	3.45
H. ...	0.29	0.74	0.26	1.49	1.44	1.42	1.27	1.48	1.47	1.03	1.53	1.78
M. ...	1.40	0.45	0.45	1.43	1.18	0.91	1.56	1.34	1.88	1.21	1.37	1.60
W. ...	0.95	0.34	0.89	1.53	2.04	1.36	1.38	0.94	1.45	1.03	1.65	1.84

Mineral Matter.

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
A....	11.87	10.62	10.21	8.73	9.36	8.77	8.46	7.07	8.36	6.78	6.53	8.51
H. ...	2.20	3.01	2.71	4.04	4.86	3.32	4.54	4.43	4.09	4.69	4.73	5.38
M. ...	2.07	1.80	2.60	3.38	3.13	2.17	4.03	3.38	5.22	4.21	3.80	5.28
W. ...	3.72	2.92	4.15	3.03	5.77	3.20	3.79	2.11	4.42	3.63	4.92	5.89

DISSOLVED MATTER.

Total Weight of Dissolved Matter.

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
A....	8.32	6.79	6.93	8.43	9.41	9.56	7.66	8.56	6.48	5.31	5.93	5.43
H. ...	3.96	3.25	3.38	5.05	6.07	6.85	6.19	5.71	5.08	4.56	5.29	5.11
M. ...	3.83	2.69	3.90	5.46	6.23	6.83	6.22	5.58	5.88	4.34	4.07	4.76
W. ...	4.47	4.44	3.86	5.75	6.11	7.45	7.18	4.77	6.46	4.07	4.83	4.54

Loss on Ignition (Soluble carbonaceous Matter and Ammonium Salts).

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
A....	1.79	1.36	1.42	1.58	1.80	2.31	1.49	2.30	2.05	1.99	1.91	2.11
H.	0.52	0.89	0.76	1.26	1.17	0.50	1.25	1.50	0.95	0.90	0.83	0.84
M.	1.28	0.64	0.87	0.72	0.75	2.67	1.52	1.50	0.88	0.54	0.49	1.10
W.	0.90	1.50	1.22	1.45	1.60	1.77	1.53	1.61	2.03	1.10	0.94	1.36

Mineral Matter.

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
A....	6.53	5.43	5.51	6.85	7.61	7.25	6.17	6.26	4.43	3.32	4.02	3.32
H.	3.44	2.36	2.62	3.79	4.90	6.35	4.94	4.21	4.13	3.66	4.46	4.27
M.	2.55	2.05	3.03	4.74	5.48	4.16	4.70	4.08	5.00	3.80	3.58	3.66
W.	3.57	2.94	2.64	4.30	4.51	5.68	5.65	3.16	4.43	2.97	3.89	3.18

Sulphate (determined as SO₄).

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
A....	3.17	2.68	2.50	3.08	3.59	3.44	2.45	2.66	1.91	1.49	1.55	1.48
H.	1.18	1.18	1.43	2.22	2.66	2.51	2.04	1.90	2.28	1.78	2.22	2.14
M.	1.44	0.98	1.35	1.97	2.32	2.81	2.20	2.53	2.13	1.87	1.94	2.48
W.	1.37	1.20	1.55	2.58	2.39	2.56	2.72	2.13	2.77	1.72	2.02	2.22

Chloride (determined as Cl).

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
A....	1.28	1.08	1.12	1.76	1.74	1.82	1.79	1.94	1.61	1.41	1.41	1.33
H.	1.02	0.58	0.81	0.76	1.08	1.28	0.64	0.70	0.67	0.58	0.58	0.63
M.	0.78	0.67	0.56	0.86	1.00	1.50	0.85	0.80	0.66	0.58	0.48	0.62
W.	0.95	0.47	0.60	0.74	0.97	1.21	0.93	0.64	0.65	0.55	0.74	0.69

Ammonia.

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
A....	0.06	0.05	0.07	0.16	0.05	0.07	0.15	0.10	0.03	0.04	0.03	0.06
H.	0.05	0.03	0.07	0.04	0.03	0.07	0.04	0.04	0.03	0.02	0.03	0.08
M.	0.06	0.04	0.04	0.04	0.04	0.06	0.05	0.05	0.03	0.02	0.02	0.08
W.	0.08	0.03	0.06	0.04	0.03	0.04	0.04	0.05	0.03	0.02	0.04	0.07

Turning to the interpretation to be put upon these analytical data, in so far as they bear on the problem of atmospheric pollution, it is important to note that they furnish no clue to the amount of impurity in the atmosphere, except when rain is falling. Again, the amount of soluble material extracted from the air by a given quantity of water falling as rain must be connected to some extent with the size of the rain drops—heavy rain in large drops dissolving less than the same amount of water in fine rain spread over a much longer period. Therefore, it will not do merely to add together the amounts collected during the twelve months and regard the sum as a measure of the degree of pollution of the atmosphere for the year. Such a total represents at most a minimum value; it takes no account of the pollution during rainless periods and to convey an approximate idea of the foulness of town air each monthly result would need to be multiplied by a factor (not ascertainable) derived from the proportion of rainless to rainy periods in that month. In Pittsburg, attempts were made to collect the suspended matter in the air by subsidence on prepared surfaces, and the data—since collection went on continuously—admitted of comparison with those recorded by other observing stations working under similar conditions. No such method has been adopted by the London Committee for the insoluble impurities, and with regard to dissolved impurities, a comparison of the results obtained at different stations in the same observing area, or of those from other towns cannot have much value until something is known of the extent to which the amounts observed are dependent on the duration of the rain per month, or on the number of days on which rain was collected, or on the rate at which the rain came down.

Of all these influences, the only one that can be put to the test is the total rainfall per month; meteorological data concerning rainfall are given only in this form. Atmospheric pollution in a manufacturing town will be due to industrial smoke, which may be looked upon as fairly constant in amount all the year round, and to that from household chimneys, which will vary in amount with the season, being greater in the winter than in the summer. Malvern is a town practically free from industrial smoke; the results furnished by the investigation of this town's atmosphere are of exceptional interest, therefore, as the pollution may be assigned to one source—household fires—and should increase with the seasonal fall in temperature. The Malvern figures for the period, July 1st, 1914, to April 30th, 1915, as published in the *Lancet*, are given below:

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April
Tar	0·01	0·01	0·01	nil.	0·01	0·01	Trace	—	—	0·01
Insoluble matter ...	0·71	0·71	0·81	0·42	0·46	0·84	0·12	0·25	0·21	0·27
Soluble matter ...	1·76	1·30	0·72	1·29	1·92	2·54	1·93	1·47	0·81	0·80
Total Solids	2·47	2·01	1·53	1·72	2·38	3·39	2·06	1·72	1·02	1·07
SO ₄	0·56	0·47	0·18	0·43	0·53	0·79	0·74	0·41	0·28	0·25
Cl	0·35	0·13	0·12	0·19	0·36	0·56	0·24	0·41	0·10	0·11
NH ₃	0·05	0·03	0·00	0·02	0·01	0·02	0·01	0·01	0·01	0·12
Rainfall in mm. ...	80	36	22	36	61	80	64	57	19	17

While the figures recorded for insoluble matter, including tar, are not easy to interpret, those for dissolved solids and for sulphate, at first sight, seem to indicate increase in pollution with the advent of winter. But they bear another complexion when plotted against the measured rainfall, as will be seen from an inspection of figure No. 6, and the conclusion is difficult to resist that the amount of impurity disclosed by the London Committee's method of investigation is intimately connected with the volume of rain measured during each month. It is no unreasonable assumption that if the Malvern rainfall were greater in the summer than in the winter (*cf.*, the

July data), the highest point in the curve for dissolved solids would occur in June or July, rather than in December. Moreover, even in the much less simple case of Sheffield's atmosphere, the same conclusion emerges, when a comparison is made of the rainfall curve for each collecting station (Figure No. 7), and the curves for dissolved solids and sulphate (possibly also chloride), shown in figures No. 4 and 5. In figure No. 4, by way of illustration, the Attercliffe rainfall curve is shown above the Attercliffe curve for dissolved solids to emphasise this point.

The chemical investigation of atmospheric pollution is thus seen to afford less information about the total amount of impurity found in the air of towns than perhaps may have been anticipated by those who initiated the enquiry in different localities in England and Scotland. Such a method could give comparative results of scientific value only if rain fell at a uniform rate, and either all day or at the same period of each day—conditions not attainable in nature. Necessarily, Sheffield's atmosphere is at its worst on a calm day; there were many days during last winter when a smoke fog was much in evidence, necessitating the closing of all windows in our houses to keep out the smuts, but as no rain fell on those days the pollution so evident to our senses found no record in the results of this investigation. Nor is this a matter of opinion only; it was corroborated during October and November, 1914, by the records obtained with Owens' Air Filter—an apparatus in which a certain volume of air is drawn at a given rate through porous paper, and the discoloration of the paper read against a standard scale—records which were worse on calm rainless days than on those which were rainy. Better results would no doubt be obtained if air were drawn through water continuously at a given rate, so as to ensure thorough and complete washing out of all impurity, but it is not unlikely that other methods exist or could be devised, which would furnish the desired information about atmospheric pollution more readily and at a less cost.

Subject to these not unimportant limitations, a comparison of Sheffield's atmosphere with that of other towns is not without interest, as it suggests that Sheffield's evil reputation for smoke as contrasted with that of other towns, may not be altogether deserved. According to the reports published in the *Lancet*, certain observation stations in other towns (Birmingham, London, Manchester and Oldham), show a greater amount of pollution than does Attercliffe, which is Sheffield's worst. To what extent this may be due to differences in the kind of coal burned does not appear; Leeds, which may burn a coal not very dissimilar from that used in Sheffield, has not participated in the present enquiry, and a comparison of the atmospheres of the two largest Yorkshire towns is thus precluded. Since the beginning of the year, Manchester has had no less than 10 observation stations, but at the time of writing the *Lancet* has published only the results furnished by them for the first four months; it is a matter for regret that Salford, on the west of the City, has not co-operated in the enquiry, as the record is thus necessarily incomplete. If the results recorded for the stations situated within three miles of the Manchester Town Hall for the period, January to April, 1915, be collated with those of Sheffield (all within two miles of the Town Hall) for the same four months, it will be seen—making allowances for differences in rainfall—that although Sheffield, according to these figures is not exactly a health resort, it has an atmosphere less foul on the whole than that of its great neighbour to the West. The corresponding data for Malvern are added for the purpose of comparison.

Atmospheric Pollution recorded for the period, January 1st to April 30th, 1915.

	Distance from Town Hall.	Tar.	Insol- uble.	Dis- solved.	Total.	Sul- phate.	Chlor- ide.	Am- monia.	Rainfall in mm.
MALVERN	—	0·01	0·85	5·01	5·86	1·68	0·86	0·15	157
SHEFFIELD—									
Attercliffe	2m. ENE.	0·60	45·10	28·01	73·11	8·51	6·75	0·32	193
Hillsborough Park ...	2m. NNW.	0·25	23·35	21·54	44·89	8·00	2·59	0·13	211
Meersbrook Park ...	2m. S.	0·31	23·14	22·02	45·16	8·73	2·89	0·15	221
Weston Park	1m. W.	0·27	19·02	22·48	41·50	9·34	2·77	0·14	220
MANCHESTER—									
Ancoats Hospital ...	700 yds. SE.	0·41	64·03	42·29	106·32	19·63	4·36	0·30	271
Whitworth Street ...	1,400 yds. E.	0·52	43·98	27·08	71·06	11·80	4·15	0·24	250
Queen's Park	2m. NNE.	0·29	35·25	32·53	67·78	15·29	4·16	0·16	257
Philips Park	2m. ENE.	0·38	48·01	37·57	85·58	16·12	5·16	0·17	239
Fallowfield	2·7m. SSE.	0·20	26·22	21·99	48·21	10·66	2·39	0·19	243
Moss Side	1·6m. S.	0·41	32·23	29·29	61·52	12·51	4·14	0·32	262

When the results of this chemical enquiry into the composition of the rain water collected at the four sites are reviewed as a whole, it is the evidence of diminishing atmospheric pollution in the Attercliffe area which seems to conflict with probabilities. It might have been anticipated—and the results for the three Parks bear out this view—that, during the twelve-months ending June 30th, 1915, progressive deterioration of Sheffield's atmosphere as a whole would be demonstrated as the outcome of abnormal industrial activity arising out of the War. Household fires required day and night to meet the needs of munition workers, plant in the East end pushed to its utmost capacity, unsatisfactory fuel supplies and a shortage of competent firemen, all matters of common knowledge, do not suggest improvement; the smoke inspection records show no decrease in the number of excessive smoke emissions notified*; and Attercliffe lost as much sunshine during the period of the enquiry as in any of the ten preceding years. Had the investigation been continued beyond the end of June, it is possible that the apparent increase in pollution in the Attercliffe area which began in May and was more pronounced in June, might prove to be periodic in character, attaining to a maximum in July or August of each year. In the absence of such information, the comment is at least permissible that far too little is known of atmospheric movements and of the effect of land contours on the accumulation or dispersal of smoke by air currents to permit of an exact interpretation of the chemical data as evidence of intensity of pollution. Sheffield derives many advantages from the hills among which it has grown, and not the least of them may be the relatively better atmosphere it enjoys, even in the valleys, than Manchester which, while it probably does not produce more smoke per unit area, is built on a plain.

Through the kindness of Mr. E. Howarth, Curator of the Weston Park Museum, I have been furnished with tables giving the number of days in each month on which rain was measured, the amount of rain collected on these days, the velocity and direction of the wind on these days, and the sunshine record for each month from July 1st, 1914 to June 30th, 1915. For reasons which need not be given, correlation was traced only between the rainfall and the chemical data. The sunshine records, however, are of special interest, and I am glad to avail myself of Mr. Howarth's permission to reproduce them here. For the purpose of comparison, the Bournemouth figures are also given; also the hours of bright sunshine registered at the three stations are displayed in curves which enables the loss which Attercliffe sustains to be more readily appreciated (Figure No. 8). Clearly, during three winter months when every ray of sunshine is most precious to town dwellers, Attercliffe receives only about one-half the amount that falls to the Weston Park district and less than one-third of that registered at Bournemouth. This loss is attributable directly to pollution of the air with smoke; in other words, mainly to the insoluble material suspended in that air.

* It is the practice in Sheffield, before legal proceedings are taken, to intimate to owners of offending factory chimneys that emission of black smoke for a specified time has been observed. The Medical Officer of Health has informed me that in 1912 and 1913 the number of intimations sent was 261 and 244 respectively, and with regard to excessive smoke emissions from July 1st, 1914, to June 30th, 1915 (the period covered by this report), the number sent was 251.

Bright Sunshine Registered, July 1st, 1914 to June 30th, 1915.

	WESTON PARK.					ATTERCLIFFE.					BOURNEMOUTH.		
	Total Hours.	Daily Mean.	Average of 10 years.	Sunless Days.	Per-centage of possible.	Total Hours.	Daily Mean.	Average of 10 years.	Sunless Days.	Per-centage of possible.	Total Hours.	Average of 20 years.	Per-centage of possible.
1914													
July ...	146.3	4.7	169.9	2	29	116.9	3.8	136.7	3	23	203.1	229.6	41
August ...	163.7	5.3	159.7	0	36	132.3	4.3	125.5	1	29	225.8	212.3	51
September ...	176.7	5.9	121.7	0	47	140.8	4.7	94.0	1	38	210.0	167.2	56
October ...	60.0	1.9	81.4	9	19	50.9	1.6	58.4	10	16	106.1	112.3	33
November ...	40.8	1.4	50.7	10	16	22.4	0.7	24.9	18	9	80.4	79.0	31
December ...	38.4	1.2	33.1	14	17	17.7	0.6	14.3	22	8	68.1	53.1	28
1915													
January ...	33.9	1.1	44.9	12	14	15.5	0.5	21.1	15	6	62.6	66.9	24
February ...	63.9	2.3	71.9	7	24	42.0	1.5	46.5	8	16	89.2	87.7	32
March ...	112.7	3.6	103.4	3	31	72.5	2.3	82.6	5	20	118.2	131.0	32
April ...	144.8	4.8	149.9	4	35	115.3	3.8	126.5	5	28	186.0	170.4	45
May ...	185.1	6.0	163.3	3	38	154.2	5.0	129.5	4	32	240.3	220.6	50
June ...	211.0	7.0	181.2	3	42	148.7	5.0	146.5	3	30	201.9	210.4	41
TOTALS ...	1377.3			67	31	1029.2			95	23	1791.7		41

While the scientific value of the chemical work promoted by the London Committee has yet to be determined, there is room for only one opinion about the need for close and careful study of town atmospheres, by all available methods, and for arousing townfolk to a clear understanding of the harm wrought by air pollution to man and beast, plant and animal alike. What filth in the form of sewage may mean to the health of a community is well understood, and by general consent preventive methods are in operation to cope effectively with the sewage problem. The influence of a foul atmosphere on the public health is less widely appreciated, and probably for that reason repressive legislation being in advance of public opinion has not produced any great effect. When the community has gained a clear appreciation of what pollution of the atmosphere of towns by smoke means, not in obvious discomfort merely, but in mental depression, ill health, disease and all those things which diminish the efficiency of the town dweller and impair his enjoyment of work and pleasure, the campaign against smoke from household and factory chimneys will have reached a stage fruitful in results. It may be hoped that the Health Committee of the Sheffield City Council, having set on foot the present enquiry, will follow it up, as Manchester has done, by appointing a Smoke Advisory Board, which by organising research and by public lectures may show the way to what is practicable in dealing with the smoke nuisance. The Manchester Advisory Board, in addition to representatives of the Sanitary Committee and the University, has Medical men, Chemists, Physicists, Engineers, Architects, Naturalists, &c., among its members. Such a Board, with the Metallurgical interests represented, would find in Sheffield a wide field for its labours—the improvement of firegrates, the use in houses of smokeless fuel or "central heating," the extent to which boiler or metallurgical smoke can be diminished without crippling the industries from which Sheffield draws its means of livelihood; these and other like problems press for solution. Legislation hitherto, has been directed against the factory chimney, the household chimney—probably the greater offender in the mass—has gone scot free; the time has come to try whether persuasion based on knowledge may not be more successful in convincing both manufacturer and householder that the highest interests of the community demand the curtailment of smoke pollution within the limits of the unavoidable.

Mr. Percy Haller, B.Sc., was responsible for the whole of the work involved in the collection and analysis of the rain water from the four observation stations. It is to me a pleasure to express warm appreciation of the care and skill with which he carried out a somewhat tedious piece of chemical investigation.

W. PALMER WYNNE,

The University of Sheffield,
September 30th, 1915.

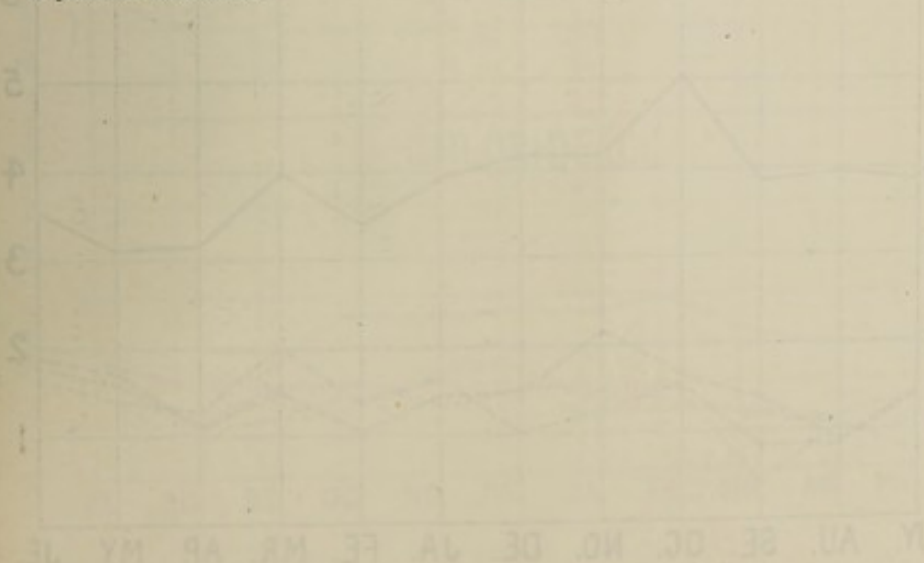


Figure 2. **INSOLUBLE MATTER.**

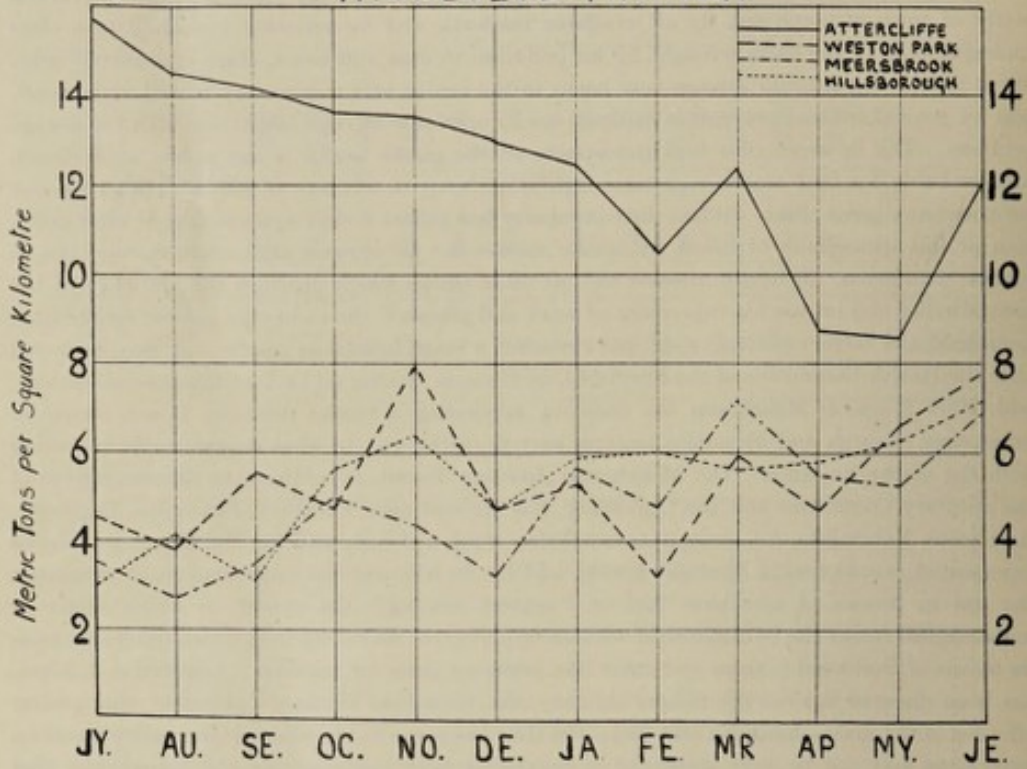


Figure 3. **COMBUSTIBLE MATTER (INCL. TAR).**

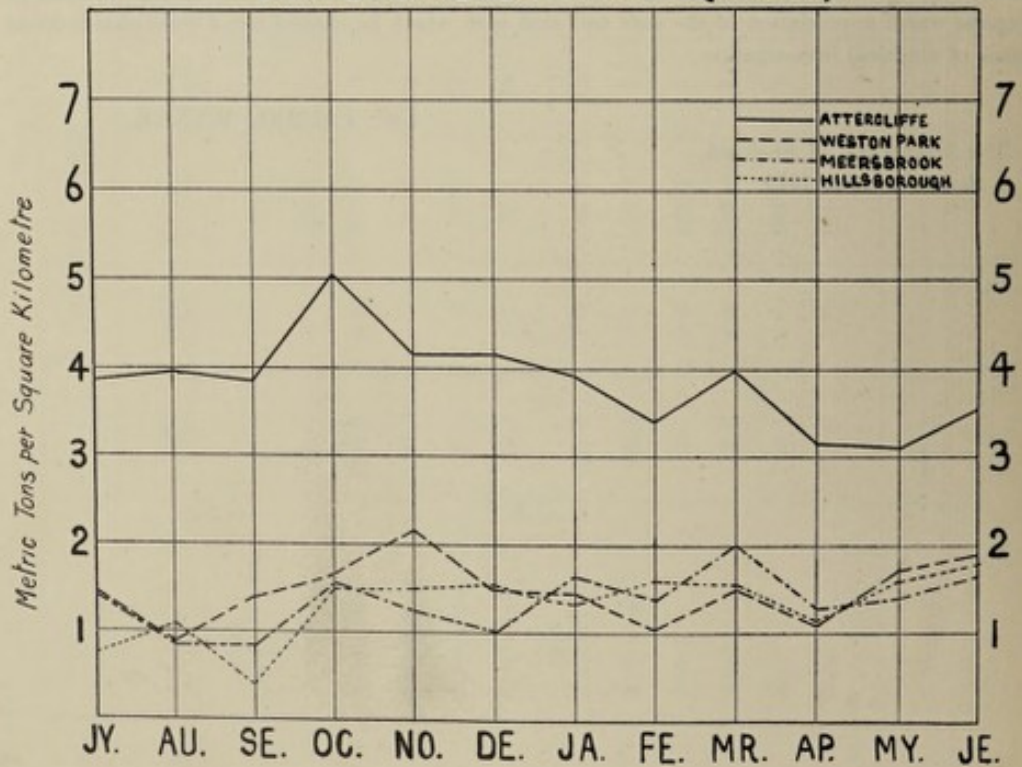


Figure 4. DISSOLVED SOLIDS.

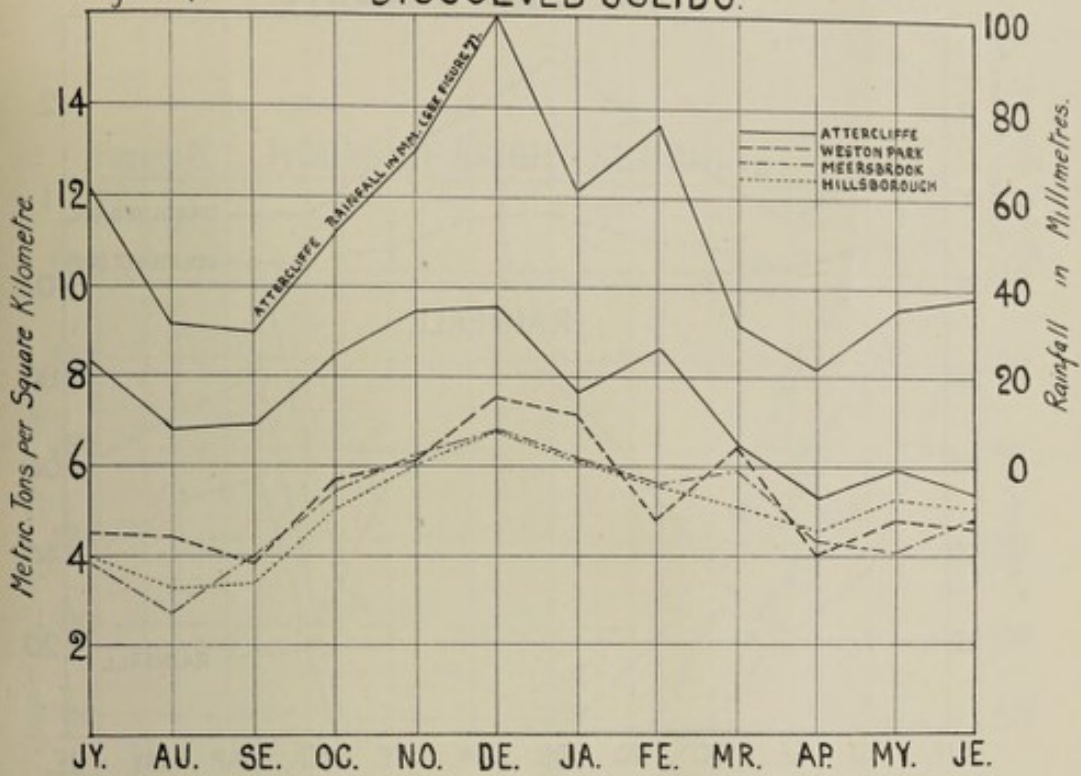


Figure 5. SULPHATE (SO₄).

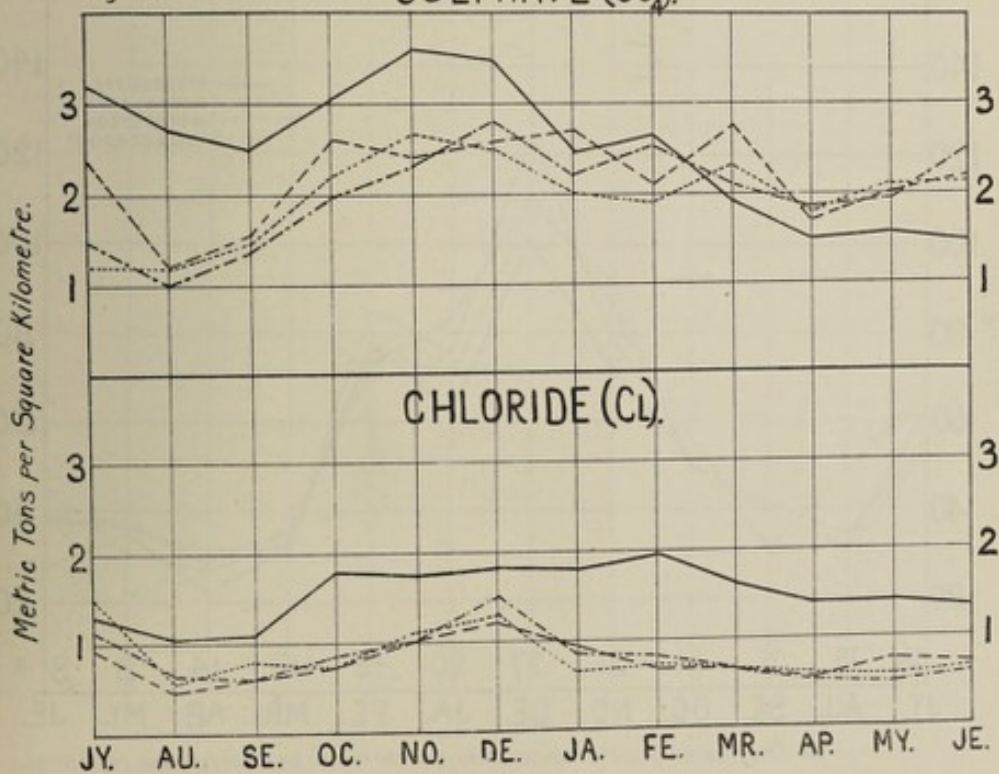


Figure 6

MALVERN RESULTS.

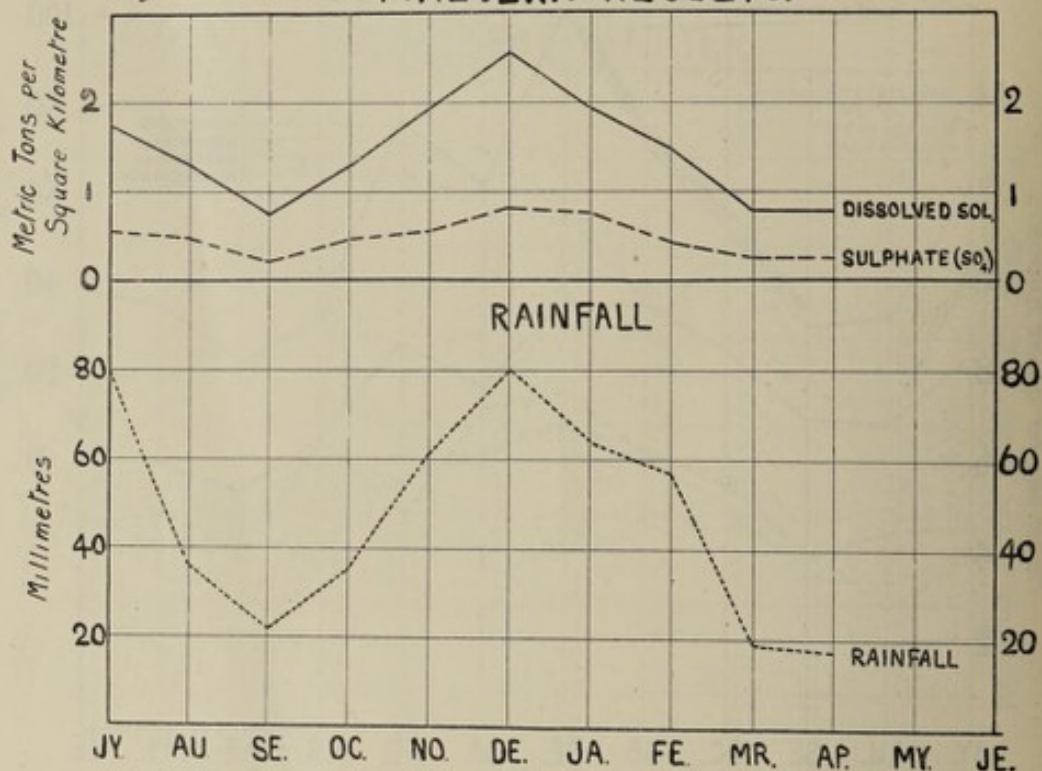
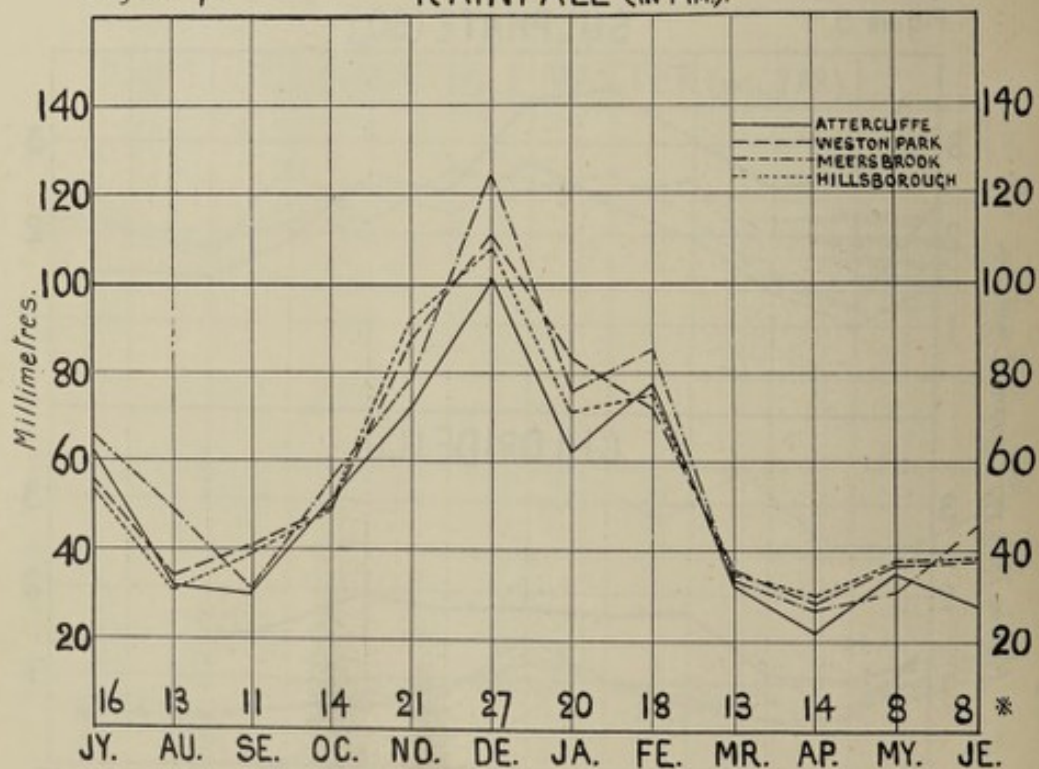


Figure 7.

RAINFALL (IN MM.).



* The figures give the number of days in the month on which rain was registered.

Figure 8. HOURS OF BRIGHT SUNSHINE.

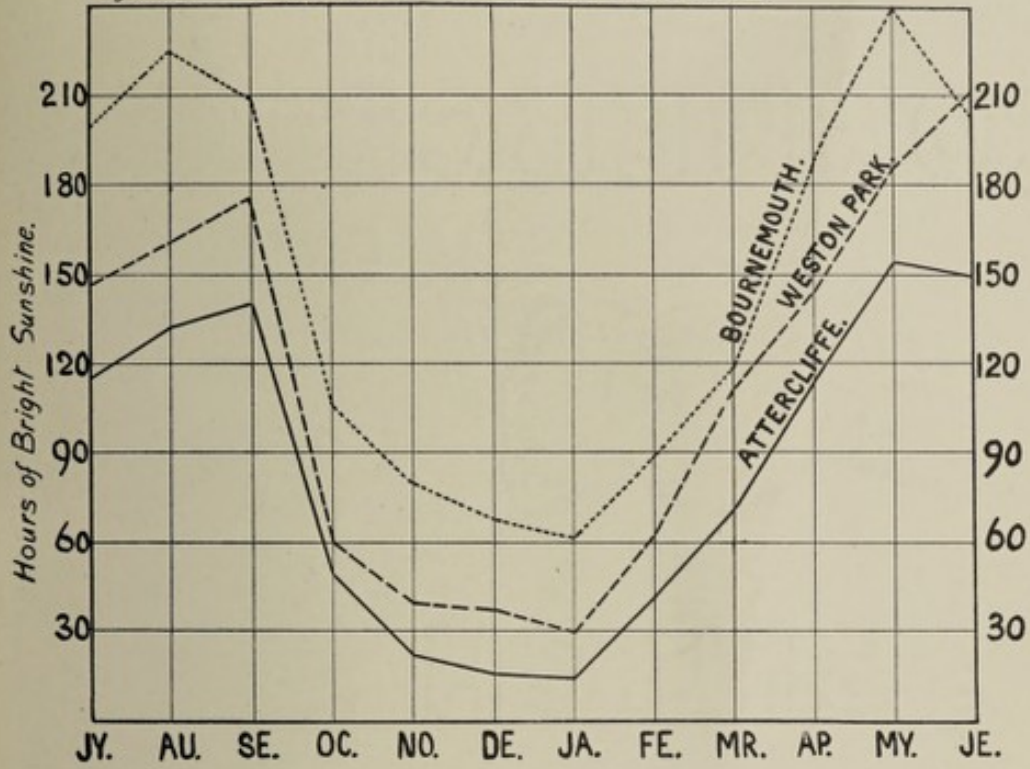


FIGURE 8. HOURS OF BRIGHT SUNSHINE

