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County Borough of Oldham.

REPORT

ON THE

HEALTH OF OLDHAM

FOR THE YEAR 1902,

BY

JAMES B. WILKINSON,

M.D., C.M., D.P.H., F.C.S.,

Medical Officer of Health,

Medical Superintendent of Westhulme and Strinesdale Hospitals,

Ex-President and Examiner to the Institute of

Sanitary Engineers.

OLDHAM:

W. F. CLEGG PRINTER AND STATIONER, 30, MARKET PLACE, AND PETER STREET.

MEMBERS OF THE HEALTH COMMITTEE, 1902.

Mr. Alderman Simister, Chairman.

,, Councillor Grime, Vice-Chairman.

The Mayor.
Mr. Alderman .G Hanson.
,, Councillor Carson.
Mr. Councillor Clough.
,, ,, Dixon.
,, ,, Doran.
Mr. Councillor Schofield.

HOSPITALS SUB-COMMITTEE AND
INSANITARY DWELLINGS SUB-COMMITTEE.

All the Members of the Committee.

To the Chairman and Members of the Health Committee.

GENTLEMEN,

I have the honour to present for your consideration my Annual Report on the Health of the Borough during the year 1902.

The same order, as in previous years, has been observed, in dealing with the various conditions affecting the Health and Sanitary Condition of the Town. In Part I. the Population, Birth and Death Rates, with other Vital Statistics, and the Meteorological observations are dealt with. In Part II. are given the Statistics, distribution and prevalence of the various Infectious Diseases ; and Part III. is devoted to a consideration of the work which has been done in the Borough to maintain or improve the Sanitary surroundings of the inhabitants.

The Appendices contain a report of the measures adopted, and the success of these measures, for purifying the Sewage of the Borough at Slack's Valley, and a report on the Small Pox epidemic.

I have very great pleasure in reporting to you that as regards the death rates the year 1902 may be considered as a record one.

In the year 1898 I had the pleasure of calculating the lowest death rate which had ever been recorded in the Borough, and for 1902 I have again to inform you that the *General Death Rate* is *the lowest ever known* in Oldham. The *Infantile Mortality Rate*, the *Phthisis Death Rate*, and the *Diarrhœa Death Rate* are also all the *lowest* which have been *recorded in the town.*

I am glad also to be able to report that the Birth Rate has increased.

Almost the only unsatisfactory conditions, which have occurred, are the increase in the number of cases of Diphtheria and the epidemic of Small Pox. This epidemic has now practically ended, but it has entailed a very considerable amount of extra work upon all the members of the staff and myself. These extra duties have been most cheerfully performed, and though I have had to summon them at all hours, even from their beds at night, not one word of grumbling have I heard, but—Inspectors or Clerks—responded most willingly.

Being a speedy runner is not one of the qualifications usually required by a Medical Officer of Health, but to my early training in this respect I owe the capture of a Small Pox patient in one of your busiest streets.

I regret to report that a very sudden death removed one of your oldest servants—Inspector Thomas—who had completed 25 years' service in the Health Department.

In conclusion I beg to tender my sincere thanks for your support and assistance, and I trust our association may always remain as pleasant and agreeable as it has been during the past year.

I have the honour to remain, Gentlemen,

Your obedient Servant,

JAMES B. WILKINSON,

Medical Officer of Health.

Town Hall,
Oldham.

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PART I.

VITAL STATISTICS.

POPULATION.

The population on which the birth and death rates and other statistics are calculated is usually that estimated upon the rate of increase in the population of a town during the period between the two previous censuses, and from that data the population of the year 1902 is found to be 138,091, an increase on the previous year of 709 persons.

The natural increase, or the increase of births over deaths, in the Borough amounts to 974. During the 1891-1900 decade the estimate considerably exceeded the natural increase, while, in 1902, the contrary is the case.

The natural increase of males is 388; that of females 586.

BIRTHS.

In 1901 the birth-rate for the year was the lowest on record, being only 24·6 per 1,000 of the population.

In 1902 there were 285 more births, and the rate has increased to 26·1 per 1,000, and, with the single exception of the year 1901, is the lowest recorded.

Compared with the other large towns of Lancashire, Blackburn is the only one with a lower rate, and, with the 33 large towns in England, Halifax, Bradford, Huddersfield, and Brighton, are the only ones with lower rates—Croyden has the same rate for the year.

The average birth rate for the last ten years in Oldham was 28·0, and for the last five years 27·0 per 1,000. Among the various Wards in the Borough the birth rate was actually less than the death rate in Coldhurst and Hartford In Hartford the birth rate was only 16·9 per 1,000.

The highest birth rates are in St. Mary's Ward with 34·9, and Hollinwood with 33·5

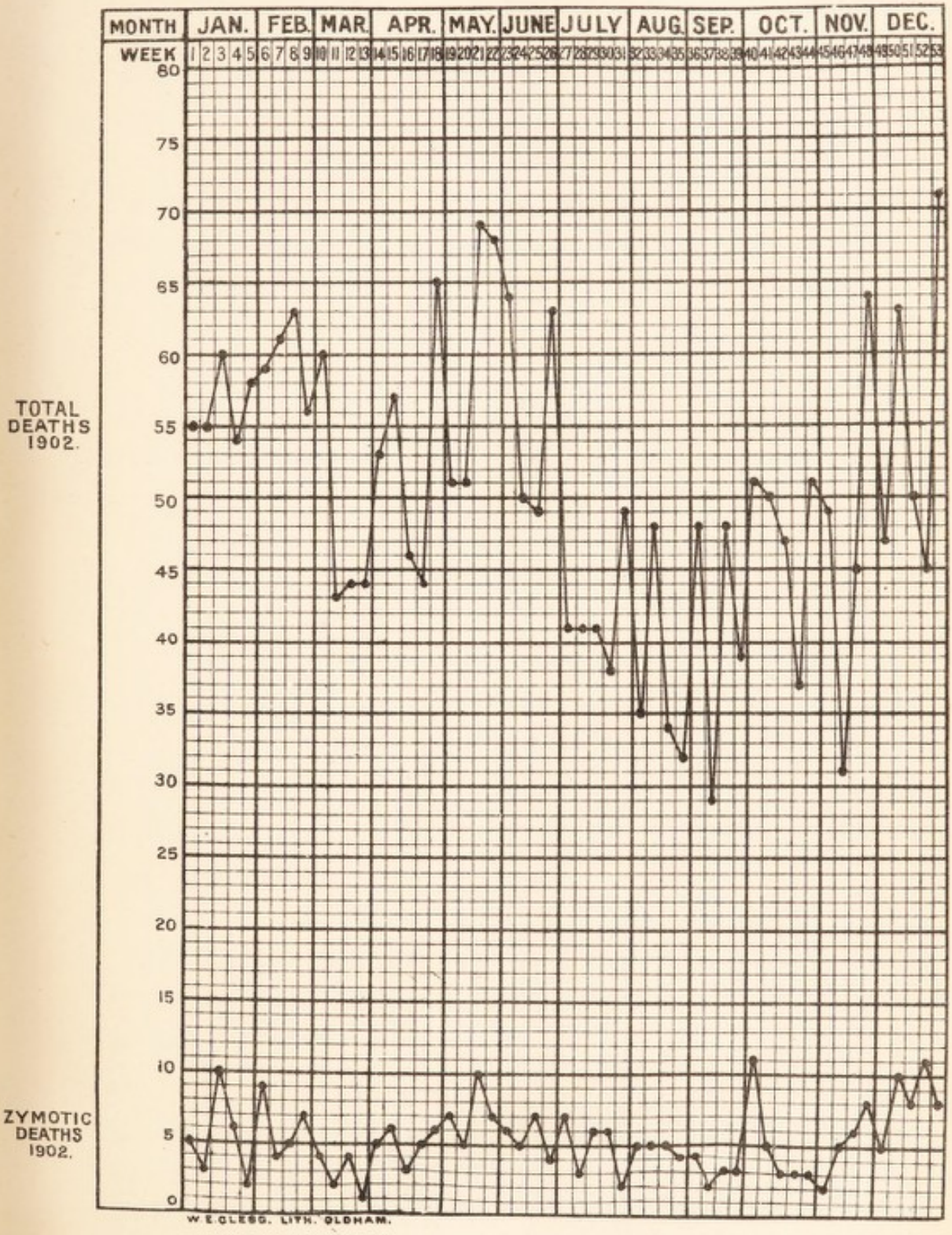
The illegitimate births during the year numbered 154, or 4·2 per cent. of the total number.

DEATHS.

During the year 1902 there were nine fewer deaths than in the year 1901, and, as in that year there were 304 fewer than in the previous year, the record for the year is a good one.

Not only are the deaths fewer, but the death rate is also lower. In 1898 the rate, calculated on the then estimated population, was 17·6. At the census of 1901 it was found that the estimated population was considerably higher than the actual figures, and, when worked out on the corrected numbers, the rate for that year becomes 19·2, and that for the present year 19·1 per 1,000 of the population.

BOROUGH OF OLDHAM.



In the year 1898 I had the pleasure of calculating the lowest death rate ever recorded in the Borough, and, as in this year, the rate is one decimal less, I have again to record the lowest death rate which has been known to occur in the town of Oldham.

The average rate for the last ten years is 21·2, and for the last five years 20·9. The decrease in the number of deaths during the past year, compared with the five years' average, is equal to about 250 fewer deaths in the year.

In comparing the Wards of the town with each other, the lowest death rates are to be found in Werneth and St. Paul's, with 16·5 per 1,000 each.

The highest rate is recorded in St. Mary's, with 22·5 ; whilst Coldhurst and Mumps closely follow, with 22·5 and 21·8 respectively.

There is a decrease of three per cent. in the proportion of deaths which have occurred in children under the age of five years. This is principally due, however, to the diminution in the number of infantile deaths, or deaths under the age of one year.

Although there are nearly 7,000 more females in the Borough than males, there have been 183 more deaths among the latter class.

As to the principal causes of death there has been a considerable decrease in the number ascribed to Diarrhœa, also in those from Convulsions and Inflammation of the Brain, and an increase in the number due to Measles.

No deaths have been certified as due to Alcoholism, whereas in 1901, 16 were put down to this cause, but sixteen deaths have been certified as due to Cirrhosis of the Liver (a disease generally associated with excessive drinking), compared with 10 in 1901.

In comparing the death rate of Oldham with that of the other large Lancashire Towns, Bolton and Blackburn have the lower rates of 17·2, and Preston with a rate of 19·3, Salford with 19·5, Burnley with 19·7, Manchester with 20·2, and Liverpool with 22·8, have higher rates.

In the list of the 33 great towns of England, Oldham stands, as regards its death rate, eighth ; Newcastle and Sunderland having also higher death rates than Oldham.

PHTHISIS.

The death rate from this disease was in 1901 the lowest ever recorded, and in 1902 there is again a decrease in this rate, which is for the year 1·5 per 1,000 of the population.

There is also, this year, a decrease in the number of deaths from other forms of tubercular disease ; the numbers being 66 instead of 77.

St. Peter's and Coldhurst Wards have the highest rates, and Waterhead, which had last year a high rate, has the lowest. St. Mary's Ward, in which the density of the population is the greatest, has only an average rate.

INFANTILE MORTALITY.

There have during the year been 543 deaths, compared with 584 in the previous year.

As the rate for deaths under one year is calculated upon the number of births, and not on the total population, the low birth rate will have some effect in lowering the figures under this heading, but not to the extent to which the rate has fallen.

The lowest infantile mortality rate previously recorded in the Borough was in the year 1888, when it was 151 per 1,000 births; this year it is 148 per 1,000 births, thus establishing another record in the Borough.

It is singular that this decline in the infantile mortality is synchronous with the appointment of the Female Inspectors, though it can hardly be claimed as entirely due to their influence, the great cause being the few deaths ascribed to Diarrhœa, and this disease being greatly influenced by the cold season.

There is a considerable increase in the number of deaths of this age due to congenital conditions; an increase also in the number due to Zymotic Diseases, exclusive of Diarrhœa, chiefly due to Measles and Whooping Cough. There is also an increase in the number of deaths under one year from Tubercular Disease.

The highest rates in the Borough were in Hartford and Coldhurst Wards, and the lowest in St. James' and Westwood.

It is noticeable that a very large proportion of deaths under one year have occurred in children fed, either wholly or partly, on the bottle, or other artificial means.

It is hoped there will be a considerable diminution in the number of deaths due to Atrophy, Convulsions, and Diarrhœa as the influence and instruction of the Female Inspectors becomes more widely distributed.

Compared with other large towns, the Infantile Mortality rate in Oldham is lower than that in all the other Lancashire large towns except Bolton, and stands sixteenth among the 33 large towns in England.

DIARRHŒA.

The deaths, ascribed to this disease, are this year considerably fewer than in the year 1901, being only 42 instead of 171. This is the lowest number put down to Diarrhœa since the records have been kept in the Borough, the previously lowest number being 43 in 1888, when the inhabitants were 14,000 fewer.

There is every probability that the cold season was one of the principal, if not *the* principal cause of the disease, as it is well known that the organism causing it does not become active until the soil in which it multiplies reaches a certain temperature, and during the summer of 1902 this temperature (56 deg.) was not recorded for more than a day or two at a time by the four foot thermometer. In 1901 the weekly mean was above this temperature for eight weeks.

In comparing the various Wards in the town St. Peter's is entirely free, while St. James's and Waterhead have a

death rate from this disease of less than ·1 per 1,000, and St. Mary's has the highest rate of ·8 per 1,000.

The rate for the whole Borough is ·31 per 1,000, which is considerably below the average rate for the previous 10 years of ·83 per 1,000.

The Borough has a lower death rate from this disease than any of the eight large Lancashire towns, and a lower rate than any of the 33 large towns in England and Wales, except Huddersfield, Halifax, Bradford, Newcastle, and Cardiff.

Twenty-eight out of the 42 deaths were in children under one year of age, and 21 of these were less than six months old.

Out of the 28 only 8 were entirely breast-fed, while 14 were being brought up entirely on the bottle.

That this artificial feeding was not rendered necessary by the employment of the mother is gathered from the fact that only six out of the 28 mothers were employed in work other than household duties.

INQUESTS.

The Coroner (Dr. G. Thomson) has kindly filled in the particulars enumerated in Table 14. There have been considerably fewer inquests during the year.

In the 147 cases in which an inquiry was held, suicide was returned as the cause of death in 13 cases (all males), accident in 58, and natural causes in 56.

METEOROLOGICAL REPORT.

JANUARY.—The mean barometric pressure was 30·09, and the mean temperature 39. The minimum temperature recorded on the grass was 17 degrees, and the maximum in the sun was 54 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 42 to 41 degrees. Rain fell on 19 days out of 35, the total rainfall amounting to 5·70 inches.

FEBRUARY.—The mean barometric pressure was 29·95, and the mean temperature 33. The minimum temperature recorded on the grass was 13 degrees, and the maximum in the sun 59 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 41 to 38 degrees. Rain fell on 8 days, the total rainfall for the month amounting to 2·29 inches.

MARCH.—The mean barometric pressure was 29·84 inches, and the mean temperature 42 degrees. The minimum temperature on the grass was 25 degrees, and the maximum temperature in the sun was 63 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 38 to 42 degrees. Rain fell on 16 days, the total rainfall being 2·48 inches.

APRIL.—The mean barometric pressure was 29·96 inches, and the mean temperature 44 degrees. The minimum temperature on the grass was 24 degrees, and the maximum temperature in the sun was 69 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 42 to 44 degrees. Rain fell on 17 days out of 35, the total rainfall amounting to 4·64 inches.

MAY.—The mean barometric pressure was 30·05 inches, and the mean temperature 46 degrees. The minimum temperature recorded on the grass was 24 degrees, and the maximum in the sun 70 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 44 to 47 degrees. Rain fell on 20 days, the total rainfall amounting to 3·50 inches.

JUNE.—The mean barometric pressure was 29·91 inches, and the mean temperature 55 degrees. The minimum temperature recorded on the grass was 29 degrees, and the maximum in the sun 88 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 47 to 51 degrees. Rain fell on 15 days, the total rainfall amounting to 2·49 inches.

JULY.—The mean barometric pressure was 30·03 inches, and the mean temperature 56 degrees. The minimum temperature recorded on the grass was 31 degrees, and the maximum in the sun 92 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 51 to 54 degrees. Rain fell on 18 days out of 35, the total rainfall amounting to 4·23 inches.

AUGUST.—The mean barometric pressure was 29·89 inches, and the mean temperature 55 degrees. The minimum temperature recorded on the grass was 32 degrees, and the maximum in the sun 75 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 54 to 53 degrees. Rain fell on 21 days, the total rainfall amounting to 5·11 inches.

SEPTEMBER.—The mean barometric pressure was 30.09 inches, and the mean temperature 55 degrees. The minimum temperature recorded on the grass was 30 degrees, and the

maximum in the sun 78 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 53 to 52 degrees. Rain fell on 14 days, and the total rainfall amounted to 2·52 inches.

October.—The mean barometric pressure was 30·04 inches, and the mean temperature 49 degrees. The minimum temperature recorded on the grass was 28 degrees, and the maximum in the sun 65 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 52 to 49 degrees. Rain fell on 28 days out of 35, and the total rainfall amounted to 7 35 inches

November.—The mean barometric pressure was 29·59 inches, and the mean temperature 44 degrees. The minimum temperature recorded on the grass was 21 degrees, and the maximum in the sun 62 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 49 to 45 degrees. Rain fell on 16 days, and the total rainfall amounted to 2·51 inches.

December.—The mean barometric pressure was 29·99 inches, and the mean temperature was 40 degrees. The minimum temperature on the grass was 18 degrees, and the maximum in the sun 55 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 45 to 43 degrees. Rain fell on 23 days out of 35, and the total rainfall amounted to 4·48 inches.

VITAL STATISTICS, 1902.

SUMMARY.

Population estimated by the Registrar General to the middle of the year			138,091
Births registered in the 53 weeks ending January 3rd, 1903... ...	Males ...	1,822	3,659
	Females ...	1,837	
Deaths registered in the 53 weeks ending January 3rd, 1903... ...	Males ...	1,434	2,685
	Females ...	1,251	
Deaths from the seven principal Zymotic diseases...			282
Deaths under 1 per 1,000 Births			148
Annual Rate of Births per 1,000 living population.			26·1
Annual Rate of Mortality from all causes per 1,000 living population			19·1
Annual Rate of Mortality per 1,000 living population from the seven principal Zymotic diseases.			2·0

Of the 2,685 deaths registered during the year 1902, 897, or 33·4 per cent., were those of children under 5 years of age.

Principal Causes of Deaths.

Bronchitis	296	Debility	89
Pneumonia	286	Cancer	98
Phthisis	215	Convulsions	55
Heart Disease... ...	238	Inflammation of Brain	40
Measles	103	Diarrhœa...	42
Apoplexy, &c.... ...	140	Premature Birth ...	93

TABLE No. 1.

HOUSES BUILT IN THE BOROUGH.

Year.	No. of Houses Built.
March, 1871, to March, 1872	277
,, 1872 ,, 1873	197
,, 1873 ,, 1874	588
,, 1874 ,, 1875	649
,, 1875 ,, 1876	867
,, 1876 ,, 1877	1181
,, 1877 ,, 1878	1010
,, 1878 ,, 1880	989
,, 1880 ,, 1881	746
,, 1881 ,, 1882	738
,, 1882 ,, 1883	644
,, 1883 ,, 1884	631
,, 1884 ,, 1885	737
,, 1885 ,, 1886	780
,, 1886 ,, 1887	657
,, 1887 ,, 1888	711
,, 1888 ,, 1889	371
,, 1889 ,, 1890	218
,, 1890 ,, 1891	214
,, 1891 ,, 1892	190
,, 1892 ,, 1893	227
,, 1893 ,, 1894	362
,, 1894 ,, 1895	284
,, 1895 ,, 1896	294
,, 1896 ,, 1897	360
,, 1897 ,, 1898	505
,, 1898 ,, 1899	455
,, 1899 ,, 1900	608
,, 1900 ,, 1901	543
,, 1901 ,, 1902	439

TABLE No. 2.

Deaths under 1 Year from Various Causes.

Ages	Premature Births	Congenital Malformation	Atrophy, Inanition, and Debility	Diarrhœa	Other Zymotics	Convulsions	Dentition	Tubercular Diseases	Pneumonia and Bronchitis	Other Causes	Totals
Under 1 mon.	84	25	11	1	...	15	...	...	4	32	172
1-2 months	2	5	21	3	2	8	...	2	12	13	68
2-3 ,,	7	1	8	7	3	3	...	1	7	7	44
3-4 ,,	...	...	4	2	3	1	...	1	14	7	32
4-5 ,,	...	1	3	7	2	4	...	2	11	9	39
5-6 ,,	...	1	4	1	2	...	1	1	11	8	29
6-7 ,,	...	...	4	1	3	4	...	1	10	7	30
7-8 ,,	...	...	...	3	4	2	...	3	10	2	24
8-9 ,,	...	...	...	1	7	3	1	1	7	3	23
9-10 ,,	...	1	...	1	5	5	4	2	11	3	32
10-11 ,,	...	...	...	...	8	3	...	1	12	5	29
11-12 ,,	...	...	...	1	11	...	3	2	4	...	21
Totals	93	34	55	28	50	48	9	17	113	96	543

TABLE No. 3.

Deaths under One Year of Age.

Nature of Diseases.	How Fed.					Occupation of Mother.			
	Breast.	Bottle.	Artificial food.	Both Breast and Bottle.	No Food.	Cotton Workers.	Charwoman or D'm'stic Servant	Other Occupation.	Housework.
Zymotic Diseases ..	19	28	1	2	...	8	1	1	40
Diarrhœa	8	14	2	4	...	3	...	3	22
Convulsions and Dentition	21	27	1	5	3	5	3	5	44
Congenital Malformation	12	9	3	...	10	3	1	2	28
Inanition, Debility, or Atrophy ...	20	27	4	2	2	4	1	1	49
Premature Birth	12	15	5	2	59	5	2	6	80
Tubercular Diseases	5	9	1	2	...	1	1	2	13
Bronchitis and Pneumonia	47	51	3	12	...	11	2	4	96
All other Diseases ...	37	48	1	5	5	13	4	9	70
Totals	181	228	21	34	79	53	15	33	442

TABLE No. 4.

INFANTILE MORTALITY IN THE 33 LARGE TOWNS PER 1000 BIRTHS.

	1902.	Ten Years, 1892-1901.
33 Towns	148	172
London	141	159
West Ham	149	169
Croydon	132	140
Brighton	125	158
Portsmouth	152	162
Plymouth	155	170
Bristol	131	146
Cardiff	146	161
Swansea	135	169
Wolverhampton	134	192
Birmingham	157	189
Norwich	167	182
Leicester	153	191
Nottingham	159	185
Derby	125	159
Birkenhead	148	174
Liverpool	163	191
Bolton	134	180
Manchester	152	191
Salford	157	205
OLDHAM	**148**	**180**
Burnley	177	211
Blackburn	159	203
Preston	189	235
Huddersfield	138	148
Halifax	144	150
Bradford	139	170
Leeds	159	180
Sheffield	150	188
Hull	137	179
Sunderland	152	175
Gateshead	136	176
Newcastle	139	174

TABLE No. 5.

SHOWING BIRTH, DEATH, AND ZYMOTIC DEATH RATES in 33 Large Towns during the year 1902.

CITIES AND BOROUGHS.	Estimated Population.	Birth Rates.	Death Rates.	Zymotic Death Rates.
33 Towns	352,221	29·0	17·4	1·71
London	4,579,110	28·5	17·7	2·23
West Ham	275,408	34·1	17·1	0·54
Croydon	137,917	26·1	14·0	1·31
Brighton	124,539	24·3	15·8	1·26
Portsmouth	191,909	27·1	16·8	2·32
Plymouth	110,057	27·0	17·0	1·78
Bristol	334,632	27·5	17·4	2·82
Cardiff	168,909	31·5	16·8	3·02
Swansea	95,059	31·1	16·1	1·40
Wolverhampton	95,712	31·6	16·4	1·73
Birmingham...	528,181	31·8	18·6	2·53
Norwich	113,178	27·9	16·7	1·83
Leicester	216,389	29·1	14·9	1·54
Nottingham...	243,191	27·8	16·7	1·32
Derby	116,982	28·0	13·9	1·28
Birkenhead	112,396	32·7	17·7	2·27
Liverpool	692,495	34·2	22·5	3·08
Bolton	171 082	27·2	16·9	2·04
Manchester	549.170	32 8	20·0	1·99
Salford	224,007	33·8	19·3	2·67
OLDHAM	**138,091**	**26·1**	**19·1**	**2·00**
Burnley...	98,383	29·1	19·5	0·04
Blackburn	130,318	25·6	16·9	0·02
Preston...	113,766	28·9	19·1	—
Huddersfield	95,000	24·4	17·8	1·57
Halifax	105,932	21·3	15·7	1·07
Bradford	281,771	23·0	15·8	1·43
Leeds	437,037	29·8	17·6	1·99
Sheffield	418,177	33·4	17·1	1·69
Hull	245,449	32·1	17·2	2·27
Sunderland	148,007	35·9	19.5	1·87
Gateshead	113,013	36·7	17·7	2 00
Newcastle	219,150	32·6	19·9	1·75

TABLE No. 6.—Showing Population, Births and Birth Rates, Deaths and Death Rates.—1902.

WARD.	Population.	Area in Acres.	Density (Persons to an Acre).	BIRTHS.			Birth Rate per 1,000 Population.	DEATHS.			Death Rate per 1,000 Population.
				Males.	Females.	Total.		Males.	Females.	Total.	
St. Mary's	10,691	113	94·6	193	186	379	34·9	138	107	245	22·5
St. Peter's	11,722	271	43·2	126	143	269	22·6	124	108	232	19·5
Werneth	12,171	262	46·4	174	174	348	14·9	107	97	204	16·5
Westwood	13,166	280	47·0	196	205	401	30·0	127	105	232	17·3
St. Paul's	12,017	457	26·3	137	157	294	24·1	107	95	202	16·5
Coldhurst	10,358	130	79·7	112	112	224	21·3	125	108	233	22·1
Hartford	12,477	207	60·3	121	93	214	16·9	137	115	252	19·9
Hollinwood.....	8,760	420	20·8	145	153	298	33·5	86	87	173	19·4
Clarksfield	14,752	623	23·7	206	194	400	26·7	147	128	275	18·4
Mumps	8,337	125	66·7	98	109	207	24·4	100	85	185	21·8
St. James'	10,661	1,015	10·5	142	141	283	26·1	105	87	192	17·7
Waterhead	12,979	826	15·7	172	170	342	25·9	131	129	260	19·7
Total.....	138,091	4,729	29·2	1,822	1,837	3,659	26·1	1,434	1,251	2,685	19·1

TABLE No. 7.

Death Rates per 1,000 population in the various Wards, from various Diseases.

1902.

Ward.	All causes	Seven Principal Zymotic Diseases	Phthisis	Bronchitis	Pneumonia	Deaths under 1 year to 1000 births
St. Mary's	22·5	3·0	1·5	1·9	2·4	148
St. Peter's	19·5	1·9	2·3	1·3	1·8	149
Werneth	16·5	1·0	1·4	1·8	1·1	106
Westwood	17·3	1·3	1·4	2·3	2·0	102
St. Paul's	16·5	1·7	1·6	2·0	1·8	177
Coldhurst	22·1	2·7	2·0	2·0	2·1	196
Hartford	19·9	1·0	1·6	2·6	2·0	262
Hollinwood	19·4	2·6	1·2	2·0	2·0	151
Clarksfield	18·4		1·4	2·0	1·2	112
Mumps	21·8	1·8	1·6	3·3	3·5	179
St. James'	17·7	1·8	1·6	1·6	2·7	99
Waterhead	19·7	2·0	0·8	2·6	2·5	181
Borough ...	19·1	2·0	1·5	2·1	2·0	148

TABLE No. 8.

Names of Localities.	Borough of Oldham.			
Year.	Population estimated to middle of each Year.	Births Registered.	Deaths at all Ages.	Deaths under 1 Year.
1895	133,888	3873	3092	737
1896	134,475	3969	2953	726
1897	135,045	3793	2786	696
1898	135,617	3749	2598	654
1899	136,210	3732	3078	739
1900	136,797	3691	3000	637
1901	137,382	3374	2696	584
Averages of Years 1895 to 1901.	135,630	3740	2886	682
1902	138,091	3659	2685	543

Names of Localities.	St. Mary's.				St. Peter's.				Werneth.			
Year.	Population estimated to middle of each Year.	Births Registered.	Deaths at all Ages.	Deaths under 1 Year.	Population estimated to middle of each Year.	Births Registered.	Deaths at all Ages.	Deaths under 1 Year.	Population estimated to middle of each Year.	Births Registered.	Deaths at all Ages.	Deaths under 1 Year.
1895	10,520	335	297	85	11,770	287	269	59	11,903	298	215	41
1896	10,543	350	300	82	11,764	282	209	44	11,940	318	187	39
1897	10,567	347	238	48	11,758	290	209	57	11,978	321	205	48
1898	10,591	355	240	69	11,752	289	197	44	12,015	350	195	44
1899	10,614	373	249	68	11,746	297	228	43	12,053	342	220	50
1900	10,638	392	262	68	11,740	293	229	39	12,090	330	228	36
1901	10,662	369	252	51	11,730	275	201	44	12,128	358	203	40
Averages of Years 1895 to 1901.	10,591	360	262	67	11,751	287	220	47	12,015	331	207	42
1902	10,691	379	245	56	11,722	269	232	40	12,171	348	204	37

	Westwood.				St. Paul's.				Coldhurst.			
1895	12,176	373	259	65	10,842	285	254	72	10,631	332	301	82
1896	12,306	371	268	68	11,000	325	238	83	10,592	328	276	61
1897	12,438	346	251	70	11,162	305	236	71	10,553	310	250	59
1898	12,571	324	238	77	11,326	317	208	53	10,514	298	249	63
1899	12,706	324	309	70	11,493	325	242	71	10,475	280	297	63
1900	12,842	334	266	66	11,661	341	243	66	10,437	289	314	62
1901	13,009	322	256	65	11,829	334	233	47	10,398	224	258	51
Averages of Years 1895 to 1901.	12,578	342	264	69	11,330	319	236	66	10,514	294	278	63
1902	13,166	401	232	41	12,017	294	202	52	10,358	224	233	44

TABLE No. 8—Continued.

Names of Localities.	Hartford.				Hollinwood.				Clarksfield.			
Year.	Population estimated to middle of each Year.	Births Registered	Deaths at all Ages.	Deaths under 1 Year	Population estimated to middle of each Year.	Births Registered.	Deaths at all Ages.	Deaths under 1 Year.	Population estimated to middle of each Year.	Births Registered.	Deaths at all Ages.	Deaths under 1 Year.
1895	12,586	366	300	70	8,049	314	166	43	12,680	365	241	53
1896	12 572	349	274	61	8,145	297	149	42	12 952	409	264	65
1897	12,558	323	288	61	8,262	308	147	45	13,229	370	234	59
1898	12,544	283	254	51	8,342	280	145	26	13,513	397	231	69
1899	12,539	269	263	70	8,442	300	201	54	13,802	369	276	61
1900	12,516	230	286	49	8,543	286	191	40	14,098	357	291	64
1901	12,495	153	258	65	8,644	267	178	41	14,426	370	227	44
Averages of Years 1895 to 1901.	12,544	282	275	61	8,347	293	168	41	13,529	377	252	59
1902	12,477	214	252	56	8,760	298	173	45	14,752	400	275	45
	Mumps.				St. James's.				Waterhead.			
1895	8,884	224	215	40	10,708	308	243	60	12,964	386	332	67
1896	8,805	240	227	53	10,702	308	232	54	12,966	392	329	74
1897	8,726	247	210	55	10 695	255	220	52	12,968	371	298	71
1898	8,648	220	211	51	10,688	281	193	40	12,970	355	237	67
1899	8 570	209	248	52	10,682	309	235	67	12,971	335	310	70
1900	8.494	222	210	38	10,676	272	209	41	12,973	341	271	68
1901	8,417	158	188	43	10,668	214	213	39	12,976	330	229	54
Averages of Years 1895 to 1901.	8,649	217	216	47	10,688	278	221	50	12,970	359	287	67
1902	8 337	207	185	37	10,661	283	192	28	12,979	342	260	62

TABLE No. 9.—For Whole District.

Year.	Population estimated to middle of each Year.	Births.		Total Deaths Registered in the District.				Total Deaths in Public Institutions in the District.	Deaths of Non-residents register'd in Public Institutions in the District.	Deaths of residents register'd in Public Institutions beyond the District.	Nett Deaths at all Ages belonging to the District.	
				Under 1 Year of Age.		At all Ages.						
		Number	Rate.	Number	Rate per 1,000 Births register'd	Number	Rate.				Number	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1892	132,171	3881	29·5	679	177	3015	22·8	372	70	...	2945	22 3
1893	132,738	3895	29·4	726	186	2912	21·9	340	52	...	2860	21·6
1894	133,313	3768	28·4	610	162	2644	19·8	417	87	17	2574	19·4
1895	133,888	3873	29·0	737	190	3186	23·8	554	116	22	3092	23·1
1896	134,475	3969	29·1	726	183	3058	22·7	383	105	...	2953	21·6
1897	135,045	3793	28·2	696	183	2863	21·2	388	77	...	2786	20·7
1898	135,617	3749	27·7	654	174	2693	19·9	395	101	6	2598	19·2
1899	136,210	3732	27 5	739	198	3204	23·5	487	129	3	3078	22·7
1900	136,797	3691	27·1	637	173	3112	22·7	489	129	17	3000	22·0
1901	137,382	3374	24·6	584	173	2806	20·4	427	121	11	2696	19·7
Averages for years 1892-1901	134,764	3772	28·0	679	180	2949	21·9	425	99	8	2858	21·2
1902	138,091	3659	26·1	543	148	2795	19·9	461	129	19	2685	19·1

Area of District in Acres. 4,729.
At Census of 1901.—Total population at all ages, 137,246. Number of inhabited houses, 29,907.
Average number of persons per house, 4·588.

TABLE No. 10.

Showing the Birth-rates, also Rates of Mortality from all causes, from the seven principal Zymotic Diseases, and from Phthisis, Bronchitis, and Pneumonia, during the years 1877-1902.

Years]	Population	RATES PER 1,000 POPULATION FROM						Deaths under 1 year to 1000 births
		Births	Deaths all causes	7 princip'l Zymotic Diseases	Phthisis	Bronchitis	Pneumonia	
1877	99,557	40·2	24·9	3·0	2·2	3·3	1·6	162
1878	102,573	39·8	26·9	5·7	2·3	3·5	1·5	175
1879	105,679	36·2	22·7	2·8	2·1	3·4	1·8	157
1880	108,880	35·4	24·6	4·3	2·3	3·3	1·7	181
1881	112,176	35·3	22·7	2·3	2·3	3·4	2·0	152
Average 5 y'rs		**37·4**	**24·3**	**3·6**	**2·2**	**3·4**	**1·7**	**165**
1882	114,017	35·3	24·9	2·8	2·3	3·4	2·1	182
1883	115,888	36 0	22·5	1·5	2·3	2·9	1·8	159
1884	117,791	37·4	25·9	3·7	2·6	2·8	2·3	182
1885	119,724	37·5	23·2	2·1	2·4	2·7	2·2	167
1886	121,690	34·7	24·2	3·0	2·3	3·1	1·9	175
Average 5 y'rs		**36·2**	**24·1**	**2·6**	**2·4**	**3·0**	**2·0**	**173**
1887	123,687	33·8	25·8	4·5	2·0	3·2	2·1	187
1888	125,717	33·3	22·3	2·2	1·9	2·6	2·6	151
1889	127,781	31·5	22·7	3·3	1·9	2·8	2·6	178
1890	129,878	31·0	24·4	2·5	2·0	3·4	3·1	180
1891	132,010	30·8	25·6	2·3	1·9	3·7	3·3	193
Average 5 y'rs		**32·1**	**24·2**	**2·9**	**1·9**	**3·1**	**2·7**	**178**
1892	132,171	29·5	22·3	2·7	2·1	2·8	2·3	177
1893	132,738	29·4	21·6	2·6	1·9	2·3	2·4	186
1894	133,313	28·4	19·4	1·9	2·0	2·1	1·9	162
1895	133,888	29·0	23·1	2·9	1·8	2·7	2·4	190
1896	134,475	29·1	21·6	2·9	1·7	2·5	2·3	183
Average 5 y'rs		**29·1**	**21·6**	**2·6**	**1·9**	**2·5**	**2·3**	**180**
1897	135,045	28·2	20·7	2·7	1·7	2 0	2·2	183
1898	135,617	27·7	19·2	2·4	1·7	2·1	2·2	174
1899	136,210	27·5	22·7	2·4	1·6	2·8	2·6	198
1900	136,797	27·1	22·0	2·7	1·9	2·8	2·3	173
1901	137,382	24·6	19·7	2·5	1·6	2·2	2·2	173
Average 5 y'rs		**27·0**	**20·9**	**2·5**	**1·7**	**2·4**	**2·3**	**180**
1902	138,091	26·1	19·1	2·0	1·5	2·1	2·0	148

TABLE No. 11.

Showing the number of deaths from the Seven Principal Zymotic Diseases in the Borough of Oldham, during the years 1877-1902.

Year	Population	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever Typhus and Typhoid	Diarrhœa	Total Deaths
1877	99,557	19	11	58	11	111	28	58	296
1878	102,573	1	114	240	26	77	36	93	587
1879	105,679	...	9	136	19	60	25	46	295
1880	108,880	...	96	131	9	70	28	142	476
1881	112,176	9	7	87	10	36	39	69	257
1882	114,017	4	69	58	10	77	26	74	318
1883	115,888	2	6	21	9	38	26	76	178
1884	117,791	..	193	33	7	36	22	149	440
1885	119,724	...	54	20	14	104	18	46	256
1886	121,690	...	89	32	29	57	30	134	371
1887	123,687	...	176	103	62	100	25	89	555
1888	125,717	13	53	66	36	40	24	43	275
1889	127,781	...	126	54	16	127	20	78	421
1890	129,878	...	95	25	6	82	15	96	319
1891	132,010	...	97	25	18	71	27	68	306
1892	132,171	15	139	42	18	68	16	56	354
1893	132,738	65	29	16	16	56	26	140	348
1894	133,313	22	56	21	39	58	15	46	257
1895	133,888	23	97	16	25	57	26	143	387
1896	134,475	...	165	56	34	53	23	72	403
1897	135,045	...	96	21	9	77	19	145	367
1898	135,617	...	87	24	10	65	23	114	323
1899	136,210	...	49	46	21	54	18	138	326
1900	136,797	3	108	54	20	89	17	76	367
1901	137,382	...	73	41	13	30	9	171	337
1902	138,091	7	103	39	49	29	13	42	282

TABLE No 12.

Weekly Means of Meteorological Observations for the year 1902.

Date 1902	Barometer reduced to Sea Level at 32 0	Thermometer	Hygrometer		% of Saturation	Temperatures.							Rainfall 12in. above ground.	Number of Days on which rain fell	Clouds covered = 10 clear = 0
			Dry	Wet		Maximum in Shade	Minimum in Shade.	Maximum in Sun Black Bulb	Maximum in Sun Black Bulb in Vacuo	Minimum on Grass.	Temperature 12in. below surface.	Temperature 4 ft below surface.			
January 4	29·59	44	45	44	92	48	41	48	54	27	36	41	3·14	6	8
11	30·26	43	43	41	85	46	40	47	51	34	39	41	·89	6	8
18	30·54	36	36	36	100	42	31	42	46	24	34	42	·14	2	7
25	29·94	42	42	41	92	45	38	45	47	33	37	41	·63	4	9
February 1	30·14	31	32	31	*	36	27	38	50	23	34	42	·90	1	5
8	29·92	33	33	32	88	35	31	38	46	25	32	40	·51	1	8
15	29·92	26	27	27	100	33	20	37	47	18	32	39	...	...	9
22	30·11	34	35	34	90	36	28	42	54	24	31	38	·72	1	7
March 1	29·86	43	48	42	85	46	37	50	61	31	35	38	1·06	6	7
8	30 02	43	43	42	92	48	38	54	69	29	36	39	·05	2	9
15	29·93	44	44	43	92	48	39	52	62	39	39	40	1·22	4	9
22	29·73	43	43	41	85	47	39	56	73	32	39	41	·58	6	7
29	29 69	41	41	40	92	44	36	51	67	30	38	42	·63	4	9
April 5	29·82	42	42	40	85	47	36	54	71	29	39	41	1·74	5	7
12	30·17	40	41	37	70	44	33	54	74	25	37	42	·25	1	7
19	29·94	48	48	41	73	51	38	59	79	28	39	42	1·10	3	7
26	29·87	52	52	48	74	57	44	64	90	36	40	42	·45	4	8
May 3	29·98	46	47	43	73	51	39	62	88	30	44	44	1·10	4	7
10	30·21	43	43	39	71	48	34	56	82	28	42	45	1·14	7	9
17	29·82	44	44	40	71	48	38	56	76	31	42	44	·74	4	8
24	30·12	49	49	45	73	53	42	62	87	34	45	45	1·18	5	9
31	30·05	51	51	47	74	55	49	65	90	41	50	46	·44	4	8

June	7	29·88	54	55	57	75	60	49	68	92	41	51	48	·83	5	9
	14	29·72	51	51	46	68	55	44	61	80	31	49	48	·63	5	9
	21	29·84	54	55	52	81	59	48	64	83	41	51	48	·92	4	10
	28	30·22	68	68	61	64	71	57	82	109	46	57	50	·11	1	3
July	5	30·11	60	61	56	71	66	52	75	95	44	58	52	·41	4	7
	12	30·06	59	57	52	70	63	52	69	87	45	57	54	1·70	4	8
	19	30·04	60	60	54	76	65	51	75	99	44	57	53	..	...	8
	26	29·92	55	55	49	60	58	48	66	85	41	54	54	1·37	5	7
August	2	30·01	55	54	50	74	60	49	69	73	43	55	53	·75	5	9
	9	29·93	54	54	50	74	58	50	65	86	43	54	53	2·10	5	8
	16	29·97	56	56	52	75	59	49	67	88	45	53	53	·40	5	9
	23	29·92	57	57	53	75	62	51	70	86	45	54	53	2·34	6	8
	30	29·75	60	60	54	67	64	51	72	95	43	54	53	·27	5	5
Septem.	6	29·91	59	59	55	76	64	53	73	94	45	54	53	·38	4	6
	13	30·10	55	55	52	80	62	47	68	82	41	53	53	·30	3	7
	20	30·09	53	53	48	69	57	46	63	85	40	51	53	1·24	3	8
	27	30·26	56	56	52	75	62	50	65	79	42	51	52	·60	4	9
October	4	30·26	50	50	47	80	54	44	61	79	38	48	52	·34	5	7
	11	29·87	49	49	46	80	51	45	56	73	41	47	51	1·35	5	9
	18	29·77	51	51	48	80	54	44	58	74	39	47	50	4·05	6	8
	25	30·15	51	51	48	80	53	45	56	71	37	45	49	·91	5	9
Novem.	1	30·16	49	49	47	86	53	47	54	62	39	46	49	·70	7	9
	8	29·82	49	49	47	86	54	42	58	74	36	45	49	·26	4	6
	15	29·99	47	48	44	73	50	44	52	61	37	44	48	1·18	5	8
	22	30·02	37	37	36	91	42	34	48	64	27	38	47	...	...	2
	29	29·52	45	45	44	92	47	41	48	53	35	39	46	1·07	7	10
Decem.	6	30·08	36	36	36	100	40	33	43	49	29	38	45	·69	4	7
	13	30·28	36	35	35	100	37	31	39	45	26	33	43	·17	2	7
	20	29·39	46	46	45	93	49	40	50	52	34	39	42	2·05	7	9
	27	30·33	45	45	44	92	48	43	48	51	39	41	43	·29	5	9
1903																
January	3	29·26	37	38	37	91	42	33	43	51	27	35	44	1·28	5	8
Means		29·98	47	47	45	86	51	42	57	72	35	44	46	Totals. 47·30	215	8

TABLE No. 13.

Prices of Coal, Bread, Flour, Butchers' Meat, and Potatoes, and the number of Paupers relieved in Oldham, 1885-1902.

	Coal per Ton.	Bread per dozen lbs.	Flour, per load of 280 lbs.	Meat per lb.	Potatoes, per load of 252 lbs.	Weekly No. of Indoor Poor.
	s. d.	d.	s. d.	d.	s. d.	
1885	7 9	11¼	. .	5	6 5	890
1886	8 0	11¼	...	5¼	7 4	931
1887	7 6	...	24 6	4½	8 10	910
1888	7 6	...	25 3	5	6 4	936
1889	8 4	...	26 10	5	7 6	946
1890	10 10	...	26 10	4⅞	6 11	921
1891	10 7	...	29 2	4⅞	10 2	901
1892	9 7	...	26 3	4⅝	7 4	937
1893	11 7	...	21 6	4½	6 6	1,011
1894	9 4	...	18 4	4¼	6 6	1,075
1895	7 8	...	17 0	4⅛	6 9	1,089
1896	7 4	...	20 0	3¾	5 11	1,037
1897	7 4	...	24 7	3½	6 5¾	1,061
1898	7 8	...	27 5	3½	9 5	1,131
1899	11 9	...	19 11	3¾	7 6	1,136
1900	13 7	...	21 4	4⅝	9 9	1,167
1901	12 7	...	21 4½	4⅜	9 0½	1,198
1902	10 9¼	...	21 9¾	4⅞	7 0½	1,175

TABLE No. 14.

Return of Inquests held in Oldham, touching the cause of death of any person, for the year ended 31st December, 1902.

INQUESTS.	Males	Females.
Infants (Legitimate), under 1 year	16	9
,, 1 year and under 7 years	6	10
Infants (Illegitimate or unknown) under 1 year	1	...
,, 1 year and under 7 years	...	...
Children, 7 years and under 16	7	2
Youths, 16 years and under 25	8	1
Adults, 25 years and under 60	43	14
Aged, 60 years and above	16	14
Total	97	50

VERDICTS.	Males.	Females.
Murder	...	2
Manslaughter	1	.
Suicide, while Insane	13	...
Accidental Death	35	23
Found Dead	8	4
Excessive Drinking	2	...
Natural Causes	36	20
Found Drowned	1	1
Stillborn	...	...
Disease aggravated by neglect	1	..
Total	97	50

Total Fees and Costs, £265 9s. 11d.

TABLE

COUNTY BOROUGH

Deaths Registered at Several Groups of Ages from Different Causes

Cause of Death.	AGES.													Totals.
	0 to 1	1 to 5	Total under 5 years	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 60	60 to 65	65 to 75	75 to 85	85 and upwards	
Classes.														
I.—Specific Febrile, or Zymotic Diseases ...	103	172	275	68	45	65	72	46	22	16	14	5	...	628
II.—Parasitic Diseases ...	5	...	5	...	...	...	...	...	..	...	...	..	...	5
III.—Dietetic Diseases ...	1	...	1	...	...	...	...	1	..	...	...	...	...	2
IV.—Constitutional Diseases...	...	3	3	7	7	12	24	37	21	21	26	3	...	161
V.—Developmental Diseases...	98	...	98	...	...	...	...	...	1	2	24	43	4	172
VI.—Local Diseases	230	162	392	70	56	88	115	176	128	121	235	94	8	1483
VII.—Deaths from Violence	2	8	10	4	5	7	8	14	1	4	7	1	1	62
VIII.—Deaths from Ill-defined and Not Specified Causes ...	104	9	113	3	3	4	8	7	11	7	12	3	1	172
Totals	543	354	897	152	116	176	227	281	184	171	318	149	14	2685
I.—Specific Febrile, or Zymotic Diseases.														
1. *Miasmatic Diseases.*														
Smallpox	...	1	1	2	...	2	1	1	...	...	...	...	...	7
Measles.....	26	71	97	6	...	...	...	...	...	...	...	...	..	103
Scarlet Fever	3	20	23	16	...	...	...	...	...	...	...	...	...	39
Typhus	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whooping Cough	16	12	28	1	...	...	...	...	...	..	...	...	..	29
Diphtheria	2	28	30	18	1	...	...	...	...	..	...	...	...	49
Simple Continued and Ill-defined Fever	..	...	...	...	...	..	...	...	...	..	...	...	..	...
Enteric or Typhoid Fever	...	...	...	2	5	3	1	2	...	...	...	...	...	13
Tabes Mesenterica	3	6	9	2	3	...	1	...	...	...	...	...	...	15
Tubercular Meningitis, Hydrocephalus	3	18	21	7	1	...	...	...	..	...	1	...	...	30
Phthisis	2	4	6	8	27	50	57	35	15	9	8	...	...	215
Other Forms of Tuberculosis, Scrofula	4	5	9	1	4	5	...	1	...	...	1	...	...	21
Other Miasmatic Diseases.....	1	...	1	...	...	...	...	...	...	...	...	...	...	1
Influenza	3	1	4	3	3	1	6	5	3	5	2	1	...	33
2. *Diarrhœal Diseases.*														
Simple Cholera	..	...	...	...	...	...	...	...	...	...	...	..	...	...
Diarrhœa, Dysentery	28	5	33	...	...	...	1	...	2	1	1	4	...	42

No. 15.

OF OLDHAM.

during 53 Weeks ending January 3rd, 1903.

WARDS.												
St. Mary's	St. Peter's	Werneth	Westwood	St. Paul's	Coldhurst	Hartford	Hollinwood	Clarksfield	Mumps	St. James'	Waterhead	Public Institutions. (R'sid nts)
60	60	42	58	50	63	46	41	78	31	49	50	84
1	...	1	1	1	1	...	...	...	...	...	...	...
...	...	...	...	...	...	1	1	...	...	...	...	...
13	18	16	15	15	13	17	8	18	9	12	7	15
17	17	18	10	21	13	13	12	20	7	8	16	1
128	124	104	124	99	132	151	93	137	119	110	162	193
9	3	5	7	3	5	7	2	6	3	5	7	25
17	10	18	17	13	6	17	16	16	16	8	18	14
245	232	204	232	202	233	252	173	275	185	192	260	332
2	...	...	1	...	2	...	1	...	...	...	1	3
15	11	3	10	7	8	3	2	14	8	14	8	6
4	3	1	1	3	7	...	2	12	2	...	4	23
...	...	...	...	...	...	...	...	...	...	...	...	...
3	3	1	2	1	4	1	3	4	1	...	6	...
1	1	3	...	2	4	4	11	12	...	5	6	1
...	...	...	...	...	...	...	...	...	...	...	...	...
...	5	1	...	4	...	...	1	2	...	...	...	5
1	2	2	2	1	1	2	...	...	...	2	2	1
4	3	3	7	3	5	1	1	...	...	...	3	3
16	27	18	19	20	21	20	11	21	14	17	11	31
2	...	4	1	2	...	3	2	1	1	2	3	4
...	...	...	...	1	...	...	...	...	...	...		...
3	3	3	5	1	4	4	2	3	1	4	..	...
...	...	...	...	...	...	...	...	...	...	...	...	...
8	...	3	4	4	4	5	3	5	4	1	1	1

TABLE No. 15—

Cause of Death.	AGES.													Totals.
	0 to 1	1 to 5	Total under 5 years	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 60	60 to 65	65 to 75	75 to 85	85 and upwards	
3. *Malarial Diseases.*														
Remittent Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ague	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4. *Zoogenous Diseases.*														
Cowpox and Effects of Vaccination	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases, Hydrophobia, Glanders, Splenic Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5. *Venereal Diseases.*														
Syphilis	9	1	10	...	...	2	1	1	...	1	1	...	...	16
Gonorrhœa, Stricture of Urethra	...	...	...	...	...	...	...	...	...	...	...	..	...	...
6. *Septic Diseases.*														
Erysipelas	2	...	2	...	...	...	...	...	...	...	...	...	...	2
Pyæmia, Septicæmia	1	...	1	2	...	...	...	...	2	...	...	...	...	5
Puerperal Fever	...	...	..	...	1	2	4	1	...	...	...	...	...	8
II.—Parasitic Diseases.														
Thrush, and other Vegetable Parasitic Diseases	5	...	5	.	...	...	...	...	...	...	...	...	...	5
Worms, Hydatids, and other Animal Parasitic Diseases.	...	...	...	...	...	...	...	...	...	...	...	...	...	...
III.—Dietetic Diseases.														
Want of Breast Milk, Starvation	...	...	...	...	...	...	...	..	...	...	...	...	...	...
Scurvy	1	...	1	...	...	..	...	1	...	...	...	...	...	2
Chronic Alcoholism	...	...	...	...	...	...	..	...	...	...	...	...	...	...
Delirium Tremens	...	...	...	...	...	...	...	...	...	...	...	..	...	...
IV.—Constitutional Diseases.														
Rheumatic Fever, Rheumatism of the Heart	...	...	...	2	3	1	1	2	1	..	1	...	...	11
Rheumatism	...	...	...	1	1	3	3	5	2	2	3	...	...	20
Gout	...	...	...	...	...	...	...	1	...	...	...	..	...	1
Rickets	...	3	3	...	...	...	...	...	...	...	..	...	...	3
Cancer, Malignant Disease	...	...	...	...	...	5	16	24	15	17	18	3	...	98
Purpura, Hæmorrhagic Diathesis	...	...	...	1	...	...	...	...	...	...	...	...	...	1
Anæmia, Chlorosis, Leucocythæmia	...	...	...	3	...	1	...	2	1	1	1	...	...	9
Glycosuria, Diabetes Mellitus	...	...	...	...	3	2	4	3	2	1	3	...	...	18
Other Constitutional Diseases	...	..	...	...	...	...	...	...	...	...	...	...	...	...

Continued.

WARDS.												
St. Mary's	St. Peter's	Werneth	Westwood	St. Paul's	Coldhurst	Hartford	Hollinwood	Clarksfield	Mumps	St. James'	Waterhead	Public Institutions. (R'sid'nts)
...	...	...	...	..	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	..	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	4	1	2	2	2	...	...	2	2	5
...	...	...	...	...	...	...	...	...	...	...	...	...
...	1	...	...	...	...	...	...	...	...	1	...	...
...	...	...	2	...	...	1	..	1	...	1	...	1
...	1	...	...	...	1	...	...	3	...	...	3	..
1	...	1	1	1	1	...	...	...	...	...	...	...
...	...	...	..	...	...	...	...	..	...	...	...	...
...	...	...	..	...	...	...	...	...	...	...	..	...
...	...	...	...	...	...	1	1	...	...	...	...	..
...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...
1	3	...	...	2	...	1	1	2	...	1	...	...
3	1	3	4	1	1	2	1	...	2	1	1	4
...	1	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	1	...	1	...	1	...	...	...	...
8	10	9	9	10	7	11	5	9	4	10	6	9
...	...	...	...	...	...	...	...	1	...	..	...	...
...	...	1	1	1	3	1	1	1	...	...	...	...
1	3	3	1	..	2	1	...	4	3	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...

TABLE No. 15—

Cause of Death.	AGES.													Totals.
	0 to 1	1 to 5	Total under 5 years	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 60	60 to 65	65 to 75	75 to 85	85 and upwards	
V.—Developmental Diseases.														
Premature Birth	93	...	93	...	...	...	...	...	...	...	...	...	...	93
Atelectasis	4	...	4	...	...	...	...	...	...	...	...	...	...	4
Congenital Malformations	1	...	1	...	...	...	...	...	...	...	1	1	...	3
Old Age	...	...	...	...	...	...	...	...	1	2	23	42	4	72
VI.– Local Diseases.														
1. *Diseases of Nervous System.*														
Inflammation of Brain or Membranes	7	13	20	8	2	1	3	3	1	1	1	...	...	40
Apoplexy, Softening of Brain, Hemiplegia, Brain Paralysis.	...	2	2	2	3	4	8	19	19	19	45	17	2	140
Insanity, General Paralysis of the Insane	...	...	...	...	...	...	3	1	1	...	2	...	1	8
Epilepsy	...	1	1	...	3	2	...	4	2	2	1	1	...	16
Convulsions	48	5	53	2	...	...	...	...	...	...	...	...	...	55
Laryngismus Stridulus (Spasm of Glottis)	2	1	3	...	...	...	...	...	...	...	..	...	...	3
Disease of Spinal Cord, Paraplegia, Paralysis Agitans	1	...	1	...	...	1	2	3	...	2	6	5	...	20
Other Diseases of Nervous System	2	...	2	...	..	...	2	...	...	2	..	...	...	6
2. *Diseases of Organs of Special Sense.*														
Of Ear, Eye, Nose	3	...	3	...	...	1	...	...	...	...	...	...	...	4
3. *Diseases of Circulatory System.*														
Pericarditis	...	..	...		1	...	...	1	...	...	...	...	...	2
Acute Endocarditis	...	..	...	...	2	3	1	3	...	...	1	...	...	10
Valvular Diseases of Heart	1	...	1	4	4	6	7	11	6	5	13	1	...	58
Other Diseases of Heart	3	3	6	8	3	5	12	21	31	26	50	15	1	178
Aneurism	...	...	...	...	...	1	...	1	...	...	...	...	...	2
Embolism, Thrombosis	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Other Diseases of Blood Vessels	3	...	3	1	...	...	...	1	...	4	11	12	...	32
4. *Diseases of Respiratory System.*														
Laryngitis	3	16	19	2	...	...	...	..	...	...	...	...	...	21
Croup	...	7	7	3	...	...	..	...	...	...	...	...	...	10
Emphysema, Asthma	1	...	1	...	...	...	1	3	2	...	2	1	...	10
Bronchitis	63	28	91	4	3	6	16	28	32	24	63	28	1	296
Pneumonia	50	66	116	16	16	27	25	31	19	15	17	1	3	286
Pleurisy	...	...	...	1	1	...	2	...	...	...	2	...	...	6
Other Diseases of Respiratory System	...	...	...	...	1	...	...	3	...	1	...	...	...	5

Continued.

WARDS.												
St. Mary's	St. Peter's	Werneth	Westwood	St. Paul's	Coldhurst	Hartford	Hollinwood	Clarksfield	Mumps	St. James'	Waterhead	Public Institutions. R'sid'nt)
10	11	7	5	13	6	9	9	9	2	5	7	..
1	...	...	...	...	...	...	...	1	...	1	1	...
...	1	...	...	...	...	...	...	2	...	...	...	...
6	5	11	5	8	7	4	3	8	5	2	8	1
5	5	2	...	5	3	5	5	3	1	4	2	1
17	13	13	13	5	9	14	9	13	7	11	16	28
...	1	..	1	1	...	1	1	...	2	1	...	3
1	3	...	...	1	2	...	1	2	3	2	1	9
6	4	2	5	7	5	1	6	5	4	3	7	...
...	...	1	...	...	...	...	1	1	...	...	...	...
...	...	...	3	1	1	3	1	1	3	2	5	12
1	...	...	3	...	...	...	..	...	...	1	1	2
...	...	...	...	...	1	...	...	...	...	1	2	...
...	...	1	...	...	...	...	...	...	...	...	1	...
2	2	...	...	...	1	...	...	3	1	..	1	...
9	9	4	7	6	2	7	1	5	3	2	3	2
17	25	18	8	8	21	16	8	21	14	8	14	41
1	...	...	...	...	...	1	...	...	...	...	...	...
1	...	...	...	...	...	...	...	...	...	...	...	..
1	3	2	2	1	8	4	1	4	3	2	1	24
1	2	1	1	...	3	5	1	3	1	1	2	...
...	...	4	...	...	...	...	...	2	...	3	1	...
...	...	1	2	...	4	1	...	...	1	...	1	6
21	16	22	31	24	21	33	18	30	28	17	35	10
26	21	14	27	22	22	25	18	19	30	29	33	21
...	...	...	1	...	...	1	...	1	...	1	2	...
1	1	...	...	2	...	...	...	1	..	...	..	..

TABLE No. 15—

Cause of Death.	AGES.												Totals.
	0 to 1	1 to 5	Total under 5 years	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 60	60 to 65	65 to 75	75 to 85	85 and upwards	
5. Diseases of Digestive System.														
Dentition	9	6	15	...	...	...	...	...	...	...	...	...	...	15
Sore Throat, Quinsy	...	...	..	...	...	...	...	1	...	...	...	..	...	1
Diseases of Stomach	4	...	4	...	...	...	1	2	...	...	2	...	...	9
Enteritis	16	2	18	4	2	3	1	...	...	...	3	...	...	31
Obstructive Diseases of Intestines	1	2	3	2	...	1	1	1	2	2	2	1	...	15
Hernia	...	...	...	1	...	...	3	3	...	1	1	...	...	9
Peritonitis	1	1	2	1	5	1	2	2	...	...	...	...	...	13
Ascites	...	...	...	...	...	..	..	...	...	...	..	...	...	..
Cirrhosis of Liver	...	...	...	..	1	...	3	7	1	2	2	...	...	16
Jaundice and other Diseases of Liver	3	..	3	...	...	1	1	...	...	..	..	...	...	5
Other Diseases of Digestive System	8	6	14	4	3	5	6	6	3	3	2	1	...	47
6. Diseases of Lymphatic System.														
Of Lymphatics and of Spleen	...	...	...	...	...	...	...	...	...	...	1	...	...	1
7. Diseases of Glandlike Organs of Uncertain Use.														
Bronchocele, Addison's Disease	...	..	..	...	...	...	...	...	...	...	...	...	...	...
8. Diseases of Urinary System.														
Nephritis	...	3	3	2	3	1	4	4	2	2	2	1	...	24
Bright's Disease, Albuminuria.	...	...	...	2	...	4	3	9	3	5	3	3	...	32
Disease of Bladder or of Prostate	...	..	.	...	...	...	1	2	1	2	1	3	...	10
Other Diseases of the Urinary System	1	...	1	...	...	2	3	2	2	1	1	3	...	15
9. Diseases of Reproductive System.														
A. *Of Organs of Generation.*														
Male Organs	...	...	...	...	...	...	...	..	...	...	...	1	...	1
Female Organs	...	...	...	...	...	1	...	...	..	...	...	...	...	1
B. *Of Parturition.*														
Abortion, Miscarriage	...	...	...	...	...	1	...	...	...	...	...	...	...	1
Puerperal Convulsions	...	...	...	...	...	2	...	...	...	...	...	...	...	2
Placenta prævia, Flooding	...	...	...	...	...	...	2	...	...	...	...	...	...	2
Other Accidents of Childbirth.	...	...	...	...	1	8	...	...	...	...	...	...	...	9
10. Diseases of Bones and Joints.														
Caries, Necrosis	...	...	...	...	1	1	...	..	...	1	...	...	...	3
Arthritis, Ostitis, Periostitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Bones and Joints	...	...	...	3	1	...	1	2	1	1	...	...	...	9

Continued.

WARDS.												
St. Mary's	St. Peter's	Werneth	Westwood	St. Paul's	Coldhurst	Hartford	Hollinwood	Clarksfield	Mumps	St. James'	Waterhead	Public Institutions R'sid'nts)
2	1	...	4	...	4	1	...	...	1	...	2	...
...	...	1	...	...	...	...	..	...	...	...	...	...
1	1	1	2	...	...	2	1	...	...	...	1	...
1	2	2	...	2	1	11	1	4	1	1	5	1
1	3	...	1	...	2	1	2	1	1	2	1	3
...	...	1	2	...	1	...	...	1	2	1	1	4
3	..	..	1	...	2	2	1	1	1	2	...	1
...	...	...	...	...	...	...	..	...	...	...	...	...
...	1	...	2	...	1	2	3	2	1	1	3	2
...	...	1	...	2	...	...	1	1	...	...	...	3
...	2	3	3	4	8	3	2	3	6	4	9	4
...	...	...	...	...	...	...	...	1	...	...	...	...
...	...	...	..	..	...	...	...	...	...	...	...	...
2	1	...	...	2	2	1	3	2	1	5	5	1
5	2	4	1	2	5	3	3	2	1	...	4	3
...	...	1	2	1	...	3	...	1	...	1	1	2
...	3	2	...	1	1	2	1	...	1	3	1	4
...	...	1	...	...	...	...	...	...	...	...	...	...
...	1	...	...	...	...	...	..	...	...	...	...	..
...	1	...	...	...	...	...	...	..	...	...	...	...
...	...	...	...	...	1	...	1	...	...	...	...	...
1	...	...	...	...	...	...	...	1	...	...	...	...
...	...	1	2	1	...	...	1	2	...	2	...	...
1	...	...	...	1	...	...	...	...	...	...	1	1
...	...	...	...	...	...	...	...	...	...	...	...	...
1	1	1	...	...	1	3	...	1	1	...	...	4

TABLE No. 15—

Cause of Death.	AGES.													Totals.
	0 to 1	1 to 5	Total under 5 years.	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 60	60 to 65	65 to 75	75 to 85	85 and upwards	
11. *Diseases of Integumentary System.*														
Carbuncle, Phlegmon	...	...	...	...	...	...	...	2	..	...	1	...	...	3
Other Diseases of Integumentary System	...	...	...	...	...	...	...	...	...	...	...	...	...	...
VII.—Deaths from Violence.														
1. *Accident or Negligence.*														
Fractures and Contusions	1	2	3	4	1	4	4	6	1	2	5	1	1	32
Gunshot Wounds	...	...	..	...	1	..	...	...	...	...	...	...	...	1
Cut, Stab	...	...	...	...	..	..	...	...	...	...	...	...	...	...
Burn, Scald	...	6	6	...	...	...	...	...	...	1	...	...	...	7
Poison	...	...	...	...	...	1	...	1	...	..	...	...	...	2
Drowning	...	...	...	...	...	...	...	1	...	...	...	...	...	1
Suffocation	...	...	...	...	...	...	1	1	...	...	...	...	...	2
Otherwise	1	...	1	...	...	...	...	...	...	...	...	...	...	1
2. *Homicide.*														
Manslaughter	...	...	...	...	1	...	1	...	...	..	...	...	...	2
Murder	...	...	...	...	2	...	...	...	...	...	...	...	...	2
3. *Suicide.*														
Gunshot Wounds	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cut, Stab	...	...	...	...	...	...	1	2	...	...	2	...	...	5
Poison	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Drowning	...	...	...	...	...	...	...	1	...	1	...	...	...	2
Hanging	...	...	...	..	...	2	1	2	...	...	...	...	...	5
Otherwise	...	...	...	...	...	...	...	...	..	...	...	...	...	...
VIII.—Deaths from Ill-Defined and not Specified Causes.														
Dropsy	...	...	..	...	...	...	...	1	...	...	1	...	...	2
Debility, Atrophy, Inanition	84	5	89	...	...	...	...	...	...	...	...	...	...	89
Mortification	...	...	..	...	...	...	...	...	..	1	2	1	...	4
Tumour	...	1	1	...	...	1	1	2	1	1	...	2	1	10
Abscess	2	...	2	1	1	1	2	1	2	...	...	...	...	10
Hœmorrhage	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sudden Death (cause not ascertained)	18	2	20	2	2	1	4	3	8	3	9	...	...	52
Causes not Specified or Ill-defined	...	1	1	...	...	1	1	...	...	2	...	...	...	5

Continued.

WARDS.												
St. Mary's	St. Peter s	Werneth	West-wood	St. Paul's	Cold-hurst	Hart-ford	Hollin-wood	Clarks-field	Mumps	St. James'	Water-head	Public Institu-tions. (R'sid'nts)
...	...	...	...	...	...	...	2	...	1	...	...	1
...	...	...	...	...	...	...	...	...	...	..	...	...
4	1	3	5	2	1	4	1	3	2	4	2	14
1	...	...	...	...	...	..	...	...	..	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	..
...	...	2	1	...	1	...	...	1	1	...	1	6
1	1	...	...	...	...	...	...	...	...	...	...	..
...	...	...	...	...	...	...	1	...	...	...	...	...
...	...	...	...	1	...	1	...	...	...	...	...	...
...	...	...	...	...	1	...	...	...	...	...	...	...
1	...	...	...	...	...	...	...	...	...	...	1	...
1	...	...	...	...	1	...	...	..	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	1	...	...	2	...	1	1	3
...	...	...	...	...	...	...	...	..	...	...	...	...
...	...	...	1	...	...	...	...	...	...	...	1	...
1	1	...	...	...	...	2	...	...	...	...	1	...
...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	1	...	...	...	...	1	...	...	...	...
11	3	11	8	9	2	11	8	8	9	2	7	1
...	...	...	1	...	...	..	2	...	...	...	1	...
...	...	2	1	1	...	...	...	2	2	1	1	3
1	...	3	...	...	1	1	...	...	1	1	2	4
...	...	...	...	...	...	...	...	...	...	...	...	...
2	7	2	6	3	2	5	6	5	4	4	6	5
3	...	...	...	...	1	...	...	...	...	...	1	1

PART II.

INFECTIOUS DISEASES.

During the year there have been about 250 more cases of infectious disease notified than in the previous year. This increase has principally been due to the epidemic of Smallpox, and to the increase in the number of cases of Diphtheria notified during the year.

The total number of cases notified was—Smallpox 178, Diphtheria 187, Erysipelas 74, Scarlet Fever 704, Enteric Fever 63, and Puerperal Fever 15, compared with Smallpox 2, Diphtheria 56, Erysipelas 57, Scarlet Fever 679, Enteric Fever 40, and Puerperal Fever 18 in 1901.

The number in 1902, though large, is fewer than in the year 1900.

Scarlet Fever and Diphtheria were most prevalent in the latter three months of the year, and Typhoid during the month of February.

Though the number of cases of Zymotic Disease notified during the year has increased, there is really a decrease in the total number of Zymotic Deaths, and this is due to the much smaller number of fatal cases of Diarrhœa which occurred.

The following is the number of deaths from each disease :—Smallpox 7, Scarlet Fever 33, Diphtheria 48, Typhoid 15, Measles 103, Whooping Cough 29, Puerperal Fever 8, Erysipelas 2, and Diarrhœa 42.

The number of deaths from the non-notifiable Zymotic Diseases—Measles, Whooping Cough, and Diarrhœa—being nearly two-thirds of the total number.

Compared with the eight large Lancashire towns, Oldham takes the third place as regards the Zymotic death rate, Blackburn with 1·79 and Manchester with 1·99 per 1,000 having lower rates.

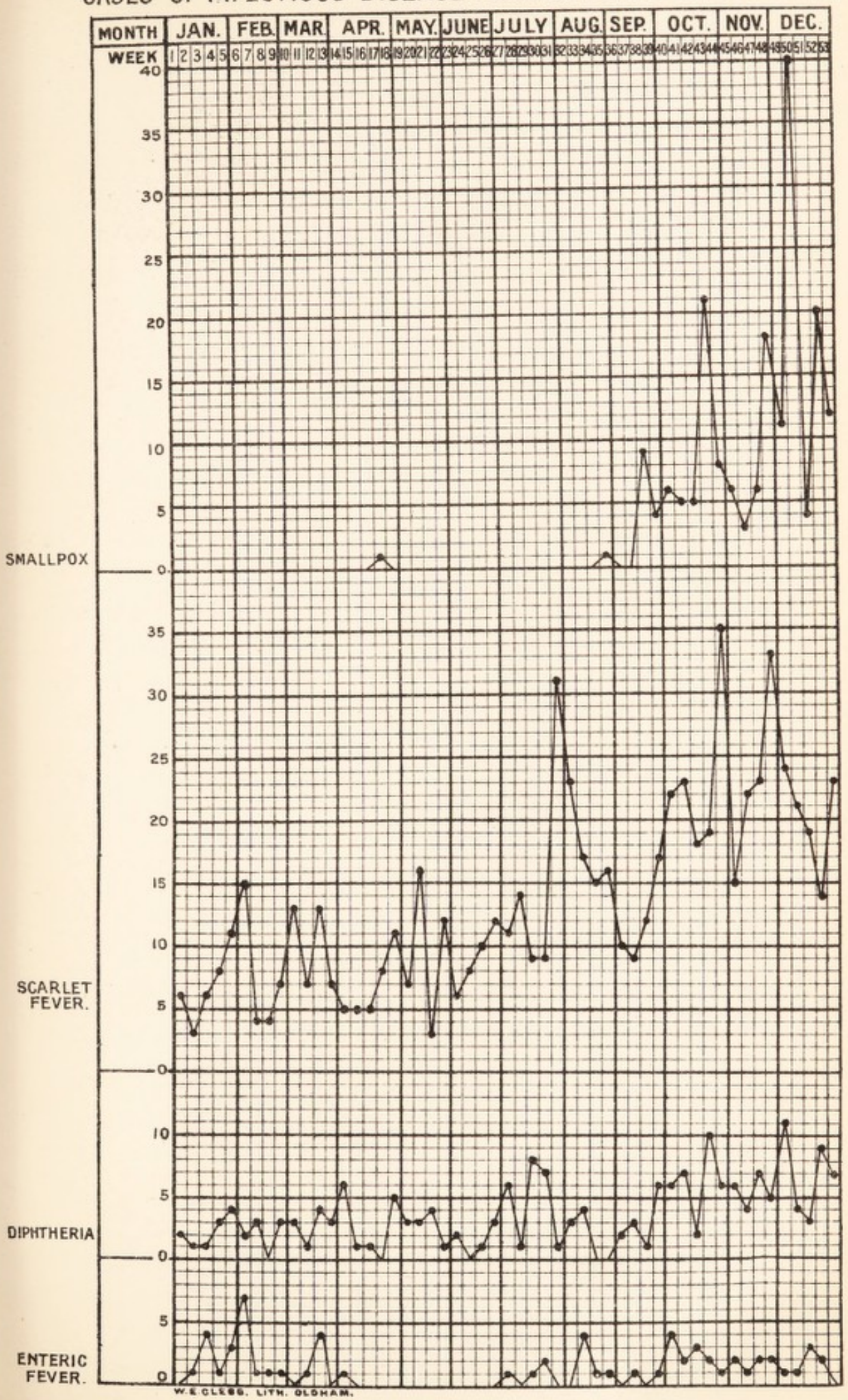
Compared with the 33 large towns of England, Oldham is below the average for the whole of these towns, and stands eighteenth in the list as regards the deaths from Zymotic Disease.

SMALLPOX.

The special report on the incidence of this disease in the Borough will be found on a later page.

BOROUGH OF OLDHAM.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1902.



W.E. CLEGG, LITH. OLDHAM.

SCARLET FEVER.

During the year 1902 there were 25 more cases of this disease notified than in the previous year, but the deaths were ten less, 33 instead of 43. The disease was most prevalent during the months of October, November, and December, and least so in the early portion of the year.

The Ward in which Scarlet Fever was most prevalent was Clarksfield, whilst Mumps Ward has been almost entirely free from the disease.

Of the 704 cases occurring in the Borough, 379, or 54 per cent., were removed to Westhulme Hospital for isolation and treatment, a slightly lower percentage of removals than in previous years.

As regards the relative mortality among the cases treated in Hospital and those remaining at home, there is a slight advantage in the case of those removed to Hospital :—

Percentage of deaths in all cases (704) reported in the Borough	4·7
Percentage of deaths in (379) cases removed to the Hospital from the Borough	4·5
Percentage of deaths in 325 cases not removed to Hospital	4·9
Percentage of deaths among all cases (405) admitted to the Hospital	5·6

All the deaths among the Borough cases were in children under the age of 10 years, and 60 per cent. were under the age of five years.

DIPHTHERIA.

The most, and almost the only, unsatisfactory circumstance which has to be recorded in this year's report is the greatly increased number of cases of Diphtheria which have occurred during the twelve months.

No less than 187 cases have been notified, compared with 56 cases in 1901, and 94 in 1900; and 48 deaths have been ascribed to this cause.

The disease was most prevalent in July and in the latter three months of the year. In December many of the cases were very severe, causing a large percentage of deaths.

Only three cases occurred in infants under the age of one year, but 141 were in children between the ages of one and ten years, and the majority of these were in children of school age, giving a very strong indication that the association of children at school has a strong influence in the spread of disease.

It is a most remarkable fact that the disease has been the most prevalent in those wards in which the density of the population is the lowest, and in which there are present the fewest insanitary conditions—viz.: Clarksfield and St. James's Wards; while only three cases were reported in St. Mary's Ward, in which the density of the population is the greatest, and in Mumps Ward, in which the density is also high, there were only five cases, and none in the year 1901.

The majority of deaths were in young children, only two occurring in persons over the age of 10 years.

Forty-three of the cases were secondary cases, and in 40 other cases untrapped or defective drainage conditions were found in association. No trace of the source of infection in the remaining 100 cases could be directly obtained. In many cases, however, it was found that there had been other children ailing, either in the same family or among school companions, from swollen glands in the neck or from sore throats. I have often experienced the circumstance that where the drains have been opened in the proximity of dwelling-houses, sore throats and diphtheria often occur among the inhabitants, and thus, indirectly, the alterations of the drains in connection with the water-carriage system may have had some effect in increasing the amount of Diphtheria in the Borough.

One case of Diphtheria occurred in 2,505 houses supplied with clean water closets.

One case to every 176 houses supplied with waste water closets.

One case to every 135 houses supplied with pan closets.

ENTERIC OR TYPHOID FEVER.

During the year 1902 sixty-three cases of Typhoid Fever were reported. This is a slight increase over the previous year, but fewer than the usual number of cases, as the only other years in which a smaller number was reported were those of 1885 and 1889.

Among the above cases 15 deaths occurred. Cases of Typhoid were notified in all the Wards, except Mumps and Waterhead, and the largest number occurred in Clarksfield

and St. Paul's Wards. The prevalence in the former being due to a small epidemic in a certain milk round, which lay principally in that Ward.

The disease was most prevalant in January and the early part of February, when the above milk epidemic occurred, and again in October, when the usual crop of cases which from year to year occur, among those who have been spending their holidays at various seaside resorts.

In the first six weeks of the year 13 out of the 18 cases were in persons supplied with milk from a farm just outside the Borough. The Medical Officer of Health for the district was communicated with, and the cows were removed to another farm. After the incubation period had elapsed no fresh cases occurred in this farmer's round.

Three cases during the year were secondary cases, and eight patients probably contracted the disease outside the Borough.

Several of the patients had been indulging in oysters or other shell fish just previously to the incubation period. This was especially noticeable among those who had been spending their holidays at seaside resorts, when cheap oyster stalls are much in evidence. Only one case occurred in the 2,500 houses supplied with water closets.

One case in every 550 houses supplied with waste water closets;

And one case in every 384 houses supplied with pan closets.

Compared with the other large towns, Oldham has a very good position as regards the prevalence of Typhoid, only nine of the 33 large towns, and none of the seven large Lancashire towns having a lower death rate.

The percentage of deaths among those admitted to Hospital for treatment and among those treated at their own homes is almost exactly the same, viz., 23·8 per cent.

A specimen of the blood was taken for Widdal's test in 60 cases of suspected typhoid. Thirty-five of these gave the Typhoid re-action, four an incomplete re-action, and in 21 cases there was no Typhoid re-action.

In two cases two specimens were taken from each patient. In one, both were negative, and the patient subsequently died from another disease. In the other the first specimen, which was taken very early in the illness, was negative, but the second, taken a few days later, gave a positive re-action.

PUERPERAL FEVER.

During the year there were 15 cases of this disease notified, and eight deaths, compared with 18 cases and 12 deaths in the previous year.

The cases were distributed fairly evenly throughout the year, and, as is often noticed, were most prevalent in those Wards in which Scarlet Fever has also been the most prevalent, and in some cases the patients were very closely associated with this disease. There was no other connection traced between the various cases.

ERYSIPELAS.

Seventy-four cases of this disease have been notified during the year. Two of these proved fatal, and both of these were in children under the age of one year.

Many of these cases were of a very trivial nature, associated with some slight wound or abrasion.

There was no special prevalence of the disease in any portion of the town, or at any period of the year.

Neither of the two fatal cases had undergone vaccination.

MEASLES.

This disease, which is frequently looked upon as only a trivial ailment, was the cause of 103 deaths, a larger number than caused by any other infectious disease. The disease was most prevalent in St. Mary's, Clarksfield, and St. James's Wards. There is no doubt that the large number of deaths is greatly attributable to the ignorance and carelessness of parents respecting this disease. The fatalist idea that "children are certain to have this complaint, and the sooner it is over the better" is responsible for the little care taken in isolating the patient; indeed, it is a matter for considerable doubt if in some cases children are not actually brought into the infection, with the idea of getting the complaint over at an early age. Another cause for the large number of deaths from this disease is the neglect of protection from cold during the illness. With careful nursing the fatalities are few, but when children are exposed

to cold as soon as they are able to get up, Bronchitis or Pneumonia too often supervenes, with a fatal result. Insanitary conditions in or near the houses also have a great tendency to increase the mortality from Measles.

It is hoped that the instructions given at the visits of the Lady Inspectors will eventually dispel a considerable amount of ignorance respecting this complaint.

CHICKEN POX.

This disease was made notifiable for a period of twelve months from November. Some cases of Smallpox were mistaken for this disease, and it was thus deemed advisable to make both diseases notifiable. No deaths occurred from this disease.

Twenty-five cases were notified up to the end of the year, two of which proved on examination to be Smallpox.

WHOOPING COUGH.

Whooping Cough was the cause of 29 deaths, all except one being under the age of five years. This disease, like Measles, is often looked upon as a trivial complaint, and little care is taken in respect to isolation. In one case I found a patient, in the most infectious stage, at an evening entertainment at which a large number of children were present. Exposure to cold and insanitary conditions, especially badly ventilated and dark houses, very considerably increase the seriousness of this complaint.

CANCER.

This disease was the cause of 98 deaths, a slightly increased number over the previous year. As regards the cause of Cancer and a knowledge of any method of checking the increase of its ravages, we are practically no nearer than in previous years. The death rate for the Borough from Cancer during the year 1902 was ·7 per 1,000, and the deaths were all of persons over the age of 25 years.

INFLUENZA.

Influenza was slightly more prevalent during the year, causing 33 deaths. Though this disease is, without doubt, infectious, practically nothing can be done to check its extension, the milder cases presenting such an indefinite nature, the onset and period of infectivity being uncertain.

MEASURES ADOPTED TO PREVENT THE SPREAD OF INFECTIOUS DISEASE.

There are two Infectious Diseases Hospitals in the Borough, Westhulme for General Infectious Diseases, and Strinesdale for Smallpox.

Westhulme Hospital.—During the year 379 cases of Scarlet Fever, 21 cases of Typhoid, three cases of Diphtheria and 26 cases of Measles were removed from the Borough to this Hospital for isolation and treatment, and in addition 46 cases of Scarlet Fever and one of Typhoid have been received from the surrounding Townships. The benefits of the Hospital are becoming more and more appreciated, and in several cases application for the admission of children was made, where they could be just as well isolated at home.

Practically no complaints were received either in regard to the care or treatment of the patients.

The nominal accommodation at the Hospital is—

Scarlet Fever block (4 wards) 40 beds.
Typhoid block (4 wards) 48 beds
Isolation block (4 wards) 10 beds.

STRINESDALE HOSPITAL.—169 cases have been removed to this Hospital from the Borough during the year, and seven cases were also received into the Hospital from Failsworth and Ashton Rural District. Nine cases were removed from the Borough to the Joint Hospital for Chadderton, Royton and Crompton.

The Hospital contains, nominally, space for 40 beds, and consisted early in the year of two wards. It was considered advisable about the middle of the year to divide one of the Wards into two—one containing six beds and the other 14, so that the smaller ward could always be kept warm, and two or three beds in it ready for immediate occupation by patients. Towards the end of the year the Epidemic of Smallpox showing signs of increasing, it was deemed advisable to extend the accommodation. This was done by transferring to Strinesdale an iron building which had been used in the town as a temporary school, and which was no longer required for that purpose.

This building consists of five rooms, three of which will contain six beds each, one eight beds, and one will serve for the accommodation of the nurses. The accommodation at the Hospital has thus been increased by 26 beds. It is intended at the first opportunity to erect also a cooking

kitchen and to connect the two hospital blocks by a corridor. Since the new building was erected it has been found necessary to occupy a portion of it with patients.

DISINFECTION.—During the year 979 houses (or 2,552 rooms) have been disinfected, and 74 houses entirely stripped and cleaned.

Disinfection is carried out by burning sulphur. In the case of Smallpox this method was not found to be effective, and in the case of this disease the walls, ceilings and floors are now sprayed with a solution of formalin before fumigation with the sulphur.

The special precautions in connection with Smallpox will be found in the special report on that disease.

Disinfection is carried out after every case of Notifiable Disease, except Chicken Pox and the milder cases of Erysipelas.

Bedding, clothing, and other articles of a similar nature are passed through the steam disinfector. Over 9,000 articles were thus treated during the year.

Disinfectants, in the form of Izal, Sanitas, and Carbolic Soap, are distributed to those houses where infectious disease exists; and Carbolic Powder where insanitary conditions may occur.

The excreta of Typhoid patients is received in special receptacles, which are frequently removed, and the contents destroyed. This is not the case when water closets are in use.

The drains of houses in which Typhoid, Diphtheria, or Puerperal Fever may occur are tested where possible by the smoke machine, and any defects found are remedied.

Schools.—During the year I have visited several of the schools, and examined the children in certain classes, with a view to discovering unsuspected cases of infectious disease, where this course was deemed advisable. In one instance several cases of Smallpox were caused by the children attending school from a house in which there was a case of this disease, though the children conveying the infection were not themselves at the time suffering from the disease.

During the year the Head Teachers of many of the schools reported regularly, week by week, suspected cases of Measles, Whooping Cough, Chicken Pox, &c., and these were subsequently visited by the Female Inspectors. I am convinced that the spread of these minor ailments, especially the two former, is much restrained by these means. In no case has it been found necessary to close the schools when these reports were regularly sent.

I much regret that the Educational Authority have ceased to allow the grant for those children excluded from school for infectious disease. This incentive to the teachers of the schools to report these cases is now wanting, and at the time of writing the number of reports received have diminished considerably. It is to be hoped that the Central Authority will again see their way to allow this grant, and if not, that the local Authority, for the sake of preventing the spread of disease, will issue instructions that these reports should be regularly forwarded. Even if

a small fee had to be paid to ensure the promptness of the reports, the money would be well and economically spent.

Several schools have been disinfected on account of the prevalence of infectious disease in them. Antitoxin and Antitetanic Serum have been kept available for urgent cases of Diphtheria or Tetanus throughout the year.

One School and the Infant Department of another were closed in the early part of the year on account of the prevalence of Measles among the scholars.

TABLE No. 16.

SCARLET FEVER.

Ages	Cases Reported.	Deaths of such Cases.	
		Total.	Percentage.
Under 5 years ..	218	20	9·2
5 to 10	355	13	3·6
10 to 15...	86	...	...
15 to 25...	33	...	...
25 to 35	10	...	...
35 to 45	...	...	...
45 to 55...	2	...	...
Over 55	...	...	...
Total	704	33	4·7

TABLE No. 17.

DIPHTHERIA.

Ages.	Cases Reported.	Deaths of such Cases.	
		Total.	Percentage.
Under 5 years ...	75	29	38·6
5 to 10...	69	17	24·7
10 to 15...	17	1	5.9
15 to 25...	10	1	10·0
25 to 35...	11	...	...
35 to 45...	4	...	...
45 to 55...	1	...	...
Over 55...	...	...	...
Total	187	48	25·6

TABLE No. 18.

TYPHOID OR ENTERIC FEVER.

Ages.	Cases Reported.	Deaths of such Cases.	
		Total.	Percentage
Under 5 years ...	2	...	...
5 to 10...	9	...	...
10 to 15	6	2	33·3
15 to 25...	22	6	27·2
25 to 35...	17	5	29·4
35 to 45...	4	...	...
45 to 55...	3	2	66·6
Over 55...	...	...	...
Total	63	15	23·8

TABLE No. 19.

Showing the number of **Cases of Sickness** and the **Deaths Registered** during the several months of the year 1902 in Oldham.

Months.	Smallpox.		Scarlet Fever.		Diph-theria.		Typhoid Fever.		Puer-peral Fever.		Typhus Fever		Erysipelas		Mem-branous Croup		Relapsing Fever		Continued Fever	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases	Deaths	Cases.	Deaths.	Cases.	Deaths	Cases.	Deaths.
January ...	...	...	25	2	9	5	8	...	2	2	...	...	3	1	...	...	...	...	...	...
February..	...	...	33	1	11	1	11	2	2	1	...	...	8	...	...	...	...	...	...	...
March	...	...	45	1	12	4	5	...	1	...	...	...	3	...	...	...	...	...	...	...
April	1	1	27	...	13	2	1	...	1	1	...	...	9	...	...	...	...	...	...	...
May.....	...	...	41	4	9	7	...	...	...	...	...	...	3	...	...	...	...	...	...	...
June	...	...	41	2	8	3	...	...	1	1	...	...	4	...	...	...	...	...	...	...
July.....	...	...	60	3	21	7	4	...	1	...	...	...	5	1	...	...	...	...	...	...
August ...	1	...	80	5	7	1	6	1	3	2	...	...	7	...	...	...	...	...	...	...
September.	15	...	62	1	16	...	4	2	...	...	...	...	4	...	...	...	...	...	...	...
October ..	41	...	103	5	27	3	10	4	2	...	...	...	7	...	...	...	...	...	...	...
November..	36	1	94	9	23	3	7	2	...	...	...	...	8	...	...	...	...	...	...	...
December..	84	5	93	6	32	13	7	2	2	1	...	...	13	...	...	...	...	...	...	...
Totals ...	178	7	704	39	187	49	63	13	15	8	...	...	74	2	...	...	...	...	...	...

TABLE No. 20.

Cases of Infectious Disease notified during the Year 1902.

Notifiable Disease.	Cases Notified in Whole District.						
	At all Ages.	At Ages—Years.					
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwds
Small-pox	178	1	11	40	18	107	1
Cholera	...	...	...	...	...	..	...
Diphtheria	187	3	72	86	10	16	...
Membranous Croup	...	...	...	...	...	...	...
Erysipelas	74	3	5	10	12	41	3
Scarlet Fever ..	704	7	211	441	33	12	...
Typhus Fever ...	...	...	...	...	...	...	...
Enteric Fever ..	63	...	2	15	22	24	...
Relapsing Fever ..	...	...	...	...	...	...	...
Continued Fever ...	...	...	...	...	...	...	...
Puerperal Fever ...	15	...	...	...	3	12	...
Plague	...	...	...	...	...	..	...
Totals ...	1221	14	301	592	98	212	4

TABLE No. 20—Continued.

Cases of Infectious Disease notified during the Year, 1902.

Notifiable Disease.	Total Cases Notified in each Locality.											
	St. Mary's Ward	St. Peter's Ward	Werneth Ward	Westwood Ward	St. Paul's Ward	Coldhurst Ward	Hartford Ward	Hollinwood Ward	Clarksfield Ward	Mumps Ward	St. James's Ward	Waterhead Ward
Small-pox ...	9	...	6	25	42	46	9	5	1	24	9	2
Cholera	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria...	3	11	12	6	14	10	12	16	49	5	33	16
Membranous Croup ...	...	...	...	..	...	...	...	...	...	...	...	...
Erysipelas...	3	3	3	4	13	7	5	2	13	1	12	8
Scarlet Fev'r	26	79	42	77	23	69	26	31	195	9	53	74
Typhus ,,	...	...	...	...	...	...	...	...	...	...	...	...
Enteric ,,	4	8	3	5	12	3	3	5	16	...	4	...
Relapsing ,,	...	...	...	...	...	...	...	...	...	...	...	...
Continu'd ,,	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal ,,	...	2	...	...	1	1	...	...	6	...	1	4
Plague	...	...	...	...	...	...	...	...	...	...	...	...
Totals ...	45	103	66	117	105	136	55	59	280	39	112	104

TABLE No. 20—Continued.

Notifiable Disease.	No. of Cases Removed to Hospital from each Locality											
	St. Mary's Ward	St. Peter's Ward	Werneth Ward	Westwood Ward	St. Paul's Ward	Coldhurst Ward	Hartford Ward	Hollinwood Ward	Clarksfield Ward	Mumps Ward	St. James's Ward	Waterhead Ward
Small-pox ...	9	...	6	22	42	46	9	5	1	24	9	2
Cholera	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria...	...	1		...	...	2	...	...	...	.	...	...
Membranous Croup ...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fev'r	14	34	11	41	15	38	11	19	132	3	25	36
Typhus ,,	...	...	...	...	...	...	...	...	...	...	...	...
Enteric ,,	1	2	...	2	3	2	2	3	5	...	1	...
Relapsing ,,	...	...	...	...	...	...	...	...	...	...	...	...
Continu'd ,,	...	...	...	...	...	...	...	...	..	...	...	...
Puerperal ,,	...	...	...	...	...	...	...	...	...	...	...	...
Plague	...	...	...	...	...	...	...	...	...	...	...	...
Totals ...	24	37	17	65	60	88	22	27	138	27	35	38

TABLE

Summary of Cases Admitted into Westhulme

	1880		1881		1882		1883		1884		1885		1886		1887		1888		1889		1890	
	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died
Smallpox ...	5		39	9	18	2	6	..	2	...	5	...	5	...	3	...	123	16	1	...	...	...
Measles	2		...	...	2	...	1	...	5	.	..	..	..	.	1	1	..	...	...	.	3	...
Scarlet Fever	73	12	60	15	30	2	91	3	111	10	90	8	205	10	571	27	203	8	222	13	134	7
Diphtheria ..	...	...	2	1	...	...	..	..	...	.	.	...	...	..	..	..	...	...	...	..	...	...
Typhus	..	...	1	1	.	..	...		1	...	...	...	12	4	2	1	..	...	.	...	1	...
Typhoid Fever.	28	5	56	8	29	4	32	7	36	4	31	7	52	8	40	6	23	7	12	5	28	5
Simple Continued Fever	2	...	4	1	2	...	..	..		...	1	.	1	...	.	.	...		...	...	...	...
Puerperal Fever.	...	...	...	..	...	...	...	.	...	...	...	.	...	.	1	1	...	...	..	...	...	...
Erysipelas ...	...	...	...	...	...	...	5	1	4	2	1	...	2	1	1	...	1	.	...	...	..	..
Ill-defined ...	...		...	...		...	...	..	6	...	4	3	...	...	...	.	4	...	1	.	...	...
	110	17	162	35	81	8	135	11	165	16	132	18	277	23	619	36	354	31	236	18	166	12

No. 21.

Hospital During the Years 1880 to 1902.

1891		1892		1893		1894		1895		1896		1897		1898		1899		1900		1901		1902	
Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died
...	...	136	16	638	63	28	1	8	...	...	...	...	...	...	...	...	..	...	..	...	...	...	...
...	..	1	...	...	...	...	...	18	5	12	3	43	3	22	6	9	..	2	...	50	6	26	6
81	4	246	15	...	...	20	2	67	5	371	18	140	8	164	14	400	23	585	30	425	27	405	23
...	.	1	...	...	...	...	..	...	...	...	...	...	...	1		2	...	2	...	...	...	3	...
...	..	1	...	...	...	...	...	..	...	8	2	...	...	...	..	...	...	1	1	...	...	...	...
46	10	12	2	...	..	15	3	41	10	27	5	31	6	29	7	34	9	37	9	22	4	22	7
...	..	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	..	...	...	..	...	...
...	...	...	...	..	...	.	..	...	...	...	...	...	...	...	..	...	...	...	...	...	..	...	...
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128	14	397	33	638	63	63	6	134	20	418	28	214	17	216	27	445	32	627	40	497	37	456	36

TABLE No. 22.

Showing the number of new Cases of Sickness coming to the knowledge of the Medical Officer of Health during the years 1881 to 1902.

Year	Small-pox.	Scarlet Fever.	Diph-theria.	Typhus Fever.	Typhoid Fever.	Puer-peral Fever.	Total Cases.
1881	15	434	20	...	131	3	603
1882	13	465	27	...	117	3	625
1883	6	301	15	...	96	3	421
1884	2	289	20	1	100	...	412
1885	4	229	28	...	58	2	321
1886	5	391	44	12	100	7	559
1887	3	1,775	127	2	119	5	2,031
1888	104	985	86	...	106	3	1,284
1889	1	680	39	...	56	5	781
1890	...	320	11	2	63	7	403
1891	...	238	29	...	112	4	383
1892	75	667	27	...	83	9	861
1893	416	442	25	...	70	9	962
1894	165	264	67	...	69	9	574
1895	137	216	70	...	109	5	537
1896	27	785	61	8	114	17	1,012
1897	...	332	38	2	86	10	468
1898	1	346	39	...	68	20	474
1899	2	822	71	...	92	11	998
1900	8	1065	94	...	72	21	1260
1901	2	679	56	...	40	18	795
1902	178	704	187	...	63	15	1147

TABLE No. 23.

Summary of Smallpox Cases treated in the various Hospitals during the years 1894 to 1902.

Hospitals.	1894.		1895.		1896.		1897.		1898.		1899.		1900		1901		1902	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Moscow	74	9	94	14	8	...	...	...	...	...	...	..	...	...	...	...	...	..
Cinder Hill..... ...	57	8	30	8	...	...	...	...	..	...	..	...	..	...	...	...	9	1
Strinesdale...	...	...	...	...	19	...	...	...	1	...	2	...	27	7	2	.	175	9
Totals	131	17	124	22	27	...	...	...	1	...	2	...	27*	7†	2	.	184**	10††

Moscow Temporary Hospital was closed in 1896.

No Oldham cases were sent to Cinder Hill Hospital from 1896 to 1901, both inclusive.

* Of this number 19 were from the Out-Townships.

† " 4 " " "

** " 9 " " "

‡ " 1 was " " "

PART III.

WORK OF THE HEALTH DEPARTMENT.

1902.

STAFF.

During the year 1902 the staff has undergone considerable re-arrangement.

In February Inspector Thomas, who in the previous December had completed 25 years' service in this capacity, died very suddenly, and his district was then taken over by Inspector Taylor, who had previously devoted his whole time in taking smoke observations.

In the same month the first Lady Inspector was appointed in the Borough, Miss Smith being appointed to this office. In August Inspector Winterbottom, who had obtained the Meat Inspectors' Certificate of the Sanitary Institute, was appointed out of 37 applicants to the position of Meat Inspector and Deputy Inspector of Nuisances for the Borough. Instead of appointing an Inspector to his district the town was divided into four instead of five districts, and in the following month an additional Lady Inspector, Miss Rothwell, was appointed. Inspector Winterbottom has since been appointed an Inspector of Nuisances for the Borough. With the exception that there are not quite so many smoke observations taken, I consider the re-arrangement of the duties has been a considerable improvement, and likely to result in much benefit to the health of the town.

The present Staff is as follows :—

Chief Inspector of Nuisances: THOMAS RUSHWORTH.

Meat Inspector and Inspector of Nuisances:

GEORGE WINTERBOTTOM (Cert. & Meat Insp., Cert., San. Inst.)

Sanitary Inspectors and their Districts:

NAPOLEON BRIERLEY—St. Peter's (part of), Clarksfield and Waterhead Wards.

W. A. HOPKINSON—Werneth, Hollinwood, St. Paul's, and St. Peter's (part of) Wards.

JAMES BURNETT—Hartford, Westwood, and Coldhurst Wards.

WILLIAM TAYLOR (Cert. San. Inst.)—St. Mary's, Mumps, and St. James's Wards.

Inspector for the Factories, Workshops, Bakehouses, &c.:

WM. G. WRIGHT (Cert., San. Inst.)

Lady Inspectors for Shop Seats, Shop Hours, Female Workshops, &c.:

Miss SMITH (Cert. San. Inst., Cert., San. Sc., Vict. & Liverpool.)

Miss ROTHWELL (Cert. San. Inst., and Cert. of Hygiene of School Life, San. Inst.)

Chief Clerk: JOSEPH CHAMBERS.

Assistant Clerks: JOHN WHIPP, A. L. HORROBIN, ELSON JACKSON.

Disinfectors: WM. CLARKE (Cert. San. Inst.), N. SCHOFIELD.

Matron Westhulme Hospital: Miss WHITEHEAD.

Medical Officer of Health: JAMES B. WILKINSON, M.D., D.P.H., F.C.S.

HOUSE INSPECTION.

Though there has been little time during the year for a properly organised house-to-house inspection, close upon 3,000 houses have been thoroughly examined, in consequence of Infectious Diseases, deaths from Phthisis, or in consequence of complaints of insanitary conditions being received.

The drains of 390 houses have been tested by smoke or other means, and 146 defects have in this manner been found. A somewhat larger number of nuisances have been reported than in the previous year, and 580 of these, owing to their not being abated after the Inspector's notice, were dealt with by the Health Committee, and at the close of the year 525 of the Committee Orders had been complied with.

By far the larger portion of these nuisances were in connection with pan and waste water closets, and in a great number of instances were due to the careless and destructive habits of the people using them.

Generally speaking, the housing accommodation is very fair throughout the town, and there is little overcrowding.

The great majority of the houses are well-built four-roomed houses, and similarly-built houses with the accommodation increased by an out-kitchen at the back with a bedroom over it. There are also a considerable number of back-to-back houses in the older portions of the town.

There is comparatively little slum property in the town, and no large area of this class. The insanitary districts usually consist of short back streets, or two or three of these

in proximity to each other. The largest area of this class of property is at present being dealt with as an insanitary area under the Housing of the Working Classes Act.

The following houses have been closed as unfit for human habitation, under the Oldham Improvement Act, during the year :—

Nos. 1 to 8, Morgan Square.

Nos. 6 and 8, behind No. 4, Bates Street.

In seven back-to-back houses the owners were given the option of having the back houses closed, or adding them to the front houses.

Seventeen houses were also voluntarily closed by the owners.

Plans must be submitted to, and approved by, the Sanitary Committee before new buildings are erected.

COMMON LODGING HOUSES.

These premises are under the control of the Health Committee, and are supervised by special members of the Police Force. The accommodation is as follows :—

Number of Registered Lodging Houses..	16
Total accommodation at night	1,218
Number of persons occupying them during the year	281,537
Average occupation per night	771

There are also 33 common lodging houses in which the rooms are let for a week or longer periods.

A feature connected with the Lodging Houses this year has been the outbreak of Smallpox, which has almost entirely been due to the inmates of these dwellings. Up to the end of the year all, except about eight or ten cases, were traced, either directly or indirectly, to the man who was found in one of these Lodging Houses on August 30th suffering from this disease.

Smallpox has been conveyed to this town by persons coming from the Common Lodging Houses of other towns, and has been conveyed from this town to others in a similar manner.

I have not the slightest doubt that had powers been available to have isolated all the inmates of the Lodging House from which the case was removed on August 30th, and the Authority been willing to enforce them, with the exception of four cases, the disease would have been confined to this dwelling; and had vaccination of all the inmates been performed, with the exception of the above four cases, the epidemic would have almost certainly been limited to the first patient.

The proprietors of the Lodging Houses principally affected, and their deputies, deserve considerable commendation. In both the large houses, in which several cases occurred, a room was placed at my disposal, and into these rooms inmates showing any symptoms of Smallpox were immediately hurried, and kept there, often under lock and key, until I was able to see them. Some of the deputies were most indefatigable in searching out and removing those with any symptoms of this disease, and but for their efforts the epidemic must have been considerably larger.

Among the inmates themselves the utmost indifference was manifested, and several feigned illness and reported themselves with the idea of being sent into hospital, and there obtaining for a couple of weeks free board and lodging.

OFFENSIVE TRADES.

There are 36 premises in the Borough devoted to these trades, and with the exception of two or three tripe dressing establishments, are small places. 1138 visits have been paid to these premises, and it has been found necessary to serve 10 notices during the year for the removal of objectionable conditions; all of which have been complied with. No new places under this heading have been placed on the list during the year.

The following is a list of these trades in the Borough :—

Tripe Boilers...	15
Marine Stores	9
Grease Works	5
Gut Scrapers	3
Fat Sorters	1
Hide and Skin Depots...	2
Soap Boilers	1
Total	36

SLAUGHTER HOUSES.

These premises have all been visited by myself during the year. They are all (56 in number) licensed annually.

The license for one new slaughter house has been granted during the year. The slaughtering of animals on unlicensed premises is not allowed in the Borough, except by written permission from myself. During the year 4,673 visits have been paid by the Inspectors to these premises. Eighteen notices for the remedying of unsatisfactory conditions have been served, and all of these have been complied with.

Generally speaking, the slaughter houses are kept in a cleanly and satisfactory condition, but while some are, structurally, everything which could be desired, many are situated in somewhat dilapidated buildings by no means well adapted for the use to which they are put.

As long, however, as there are no public abbatoirs, it is preferable to allow these buildings to be used rather than, by closing them, cause the slaughtering to be done outside the town, when we have no power of inspecting the carcases slaughtered there. The meat exposed for sale in the Market has improved in quality. Since the appointment of an Inspector to devote the whole of his time to the Inspection of Meat and other Foods there is already an indication that the quantity of doubtful meat supplied in the town has diminished considerably.

Three important seizures of unsound meat have taken place during the year. In two cases the meat was from tuberculous animals, and in the other from an animal which had suffered from some inflammatory or febrile illness. In the latter case the meat had a very distinct odour of the drugs which had been administered previous to death.

In two cases fines of £10 and costs, and in one £5 and costs were inflicted by the Magistrates.

The following is a summary of diseased, etc., animals reported to or found by the Meat Inspector from August 9th to the end of the year :—

Diseased Conditions.	No. Reported.	No Found by Inspector.	Total.
Tuberculosis	9	22	31
Hydatids.....	2	3	5
Pleuritis	1	0	1
Injured in transit ..	16	0	16
Smothered	1	3	4
Overkept meat ...	0	6	6
Liver flukes.....	0	6	6
Strongylus	0	2	2
Fevered meat	0	1	1
Garget.....	0	1	1

MORTUARY, &c.

Towards the close of the year another insanitary structure was removed from our midst. The old Mortuary, which was dark, damp, and absolutely unsuitable for the purpose for which it was used, was demolished, and with it the adjoining stables, in which the two horses used at the disinfecting station were most unsatisfactorily housed.

In the place of these are rapidly approaching completion a New Mortuary, with Post Mortem Room adjoining, proper Stables, and what has not previously been available, a Coach-house for the Ambulances and Disinfecting Vans, and a Store-room for Disinfectants.

The Mortuary, though not quite in accordance with the requirements of the Local Government Board, in that it is not lighted from the North side only, which in this position

is impossible, and is adjoining the Post Mortem Room, is most suitable for its purpose. It is lined throughout with glazed (white and buff) bricks, and the slabs are of thick glass on iron brackets. There is an inspection window, and the room is lighted from the roof. The Post Mortem Room is of similar structure, and is fitted with a white glazed earthenware table, lavatory basin and sink with hot and cold water supply : the former through a gas-heated geyser. The Coach-house will accommodate the two ambulances and two vans, and there is a glass roof over the yard, under which they can be washed. The Disinfecting Station is now a credit to the town instead of a disgrace.

SMOKE NUISANCE.

Owing to the Smoke Inspector being put in charge of a district in February, few observations have been taken during the year. By the re-arrangement of the Inspectors' duties in October, each district Inspector will take the observations in his own district.

Owing, perhaps, somewhat to this laxity during the year, and also to the tendency when few observations are taken to pick out the worst, the percentage of those mills exceeding the limit of black smoke has increased from 2·16 per cent. in 1901 to 6·80 per cent. in 1902.

Nine firms were reported to the Committee for exceeding the limit of four minutes in the half-hour, one of them on two occasions.

In one case the necessary notice to abate was served. In five cases the firm transgressing was cautioned, and in four cases legal proceedings were taken, three of the offenders being fined 10s. and costs each, and one 40s. and costs.

DAIRIES AND MILK SHOPS.

These premises are regularly inspected. There are 333 (an increase of 15), and 73 farms on the list in the Borough. Six cases of Scarlet Fever occurred during the year on premises occupied as Milk Shops. Two were removed to Hospital, and in the others no connection with the milk trade was allowed.

844 visits were paid to these premises, and 31 defects were found, of which 30 had been remedied at the close of the year.

With the exception of the small Typhoid outbreak already mentioned, there has been no outbreak of disease associated with the milk supply.

FACTORY AND WORKSHOPS ACT.

Factories.—The mill reservoirs have been kept under constant inspection during the year, no less than 4,571 visits being made, and with the exception of a few, during the warmer months, there were no complaints concerning them.

A systematic inspection of all the fire escapes in connection with the mills and workshops was commenced during the year by the Workshops Inspector, accompanied by the Superintendent of the Fire Brigade, and 37 notices were served to make those visited satisfactory or erect new ones. Notices were served for additional closet accommodation where notified to this effect by the Factory Inspector.

Workshops.—At the close of the year there were 416 on the register. During the year 15 Dressmakers', 12 Milliners', 2 Tailors, and 2 Cloggers' premises were added to the register.

The workshops are visited regularly, both by the male and female inspectors, according to males or females being employed, and about 160 notices were served for defective conditions.

The workshops are generally well suited for the purpose, and as a rule are kept in a satisfactory condition. The defects found are enumerated in Table 32.

Bakehouses.—At the close of the year there were 359 bakehouses on the register, an increase of 8 over the number in 1901.

These are regularly visited by the Workshops' Inspector, who served notices for 45 defects during the year, 42 of which have been complied with.

On the register there are 42 bakehouses which come under the term "underground," and concerning which special regulations are contained in the "Factory and Workshops Act, 1901." Nearly all of these, however, are small places, and are used only by one or two members of the family, who keep the shop above. All of these will be visited early in 1903, in order to give ample time for the owners or occupiers to make the necessary alterations before the certificate of the Council is required.

SHOP HOURS AND SHOP SEATS ACTS.

Visits are made both by the Workshop and Lady Inspectors to shops from time to time to ascertain if the provisions of these Acts are carried out.

The Workshop Inspector has made 339 visits under this Act, and served 32 notices, all of which have been complied with.

The Lady Inspectors have paid 586 primary visits and 494 re-inspections, and served 245 notices, 237 of which have been complied with.

LADY INSPECTORS.

Two Lady Inspectors, as has already been stated, were appointed during the year, and the scope of their work will be seen in Table 24.

Their duties are to visit the houses at which births occur, and if no medical man is in attendance to give instruction as to the proper method of feeding infants, and at the same time to ascertain if there are any insanitary conditions in connection with the houses, and, if so, to report them. To visit and inquire into the conditions existing at houses where deaths of infants under the age of one year occur. To visit those workshops where females are employed, and to visit the shops and make inquiries under the Shop Hours and Shop Seats Acts. To visit the cases of Measles, Whooping Cough, &c., reported from the various schools, and give instructions as to isolation, quarantine, &c., and also from time to time give Cottage Lectures or "Homely Talks" to assemblies of mothers at various cottages in the town.

I anticipate that the knowledge of simple sanitary or hygienic matters which they will diffuse among the house-holders will in the future have a considerable influence in lessening the number of infantile deaths and in diminishing the mortality from Measles, Whooping Cough, Diarrhœa, &c.

THE SALE OF FOOD AND DRUGS ACTS.

In the year 1902 there were 174 samples of food purchased under the above Acts. This is a larger number than have previously been purchased in one year. The percentage found adulterated has been very small, only 2·3 per cent.

Two samples of milk were adulterated with water; one sample contained 18 per cent. of added water, and the vendor was fined £2 and costs by the magistrates. The other sample contained 10 per cent., and the seller was cautioned by the Health Committee.

In two cases margarine was sold for butter, and the shopkeeeer in one case was fined 40s. and costs. In the other case the vendors belonged to a gang of butter dealers who have shops in most of the Lancashire towns. Their method of procedure is to open a shop and sell margarine for butter until they find that a sample has been bought under the Food and Drugs Act, when they either close the shop and decamp or put a fresh manager in, pretending that a sale of the business has taken place. In this case the person said to own the shop and the actual seller of the sample could not be found, though a lad who was in the shop at the time of sale was traced to a shop at Wigan.

One shopkeeper was fined 5s. and costs for selling a mixture of coffee and chicory instead of coffee. The other cases, in which the butter purchased was not satisfactory, were due to an excess of water, for which no proceedings were taken.

SEWERAGE AND DRAINAGE.

There is a complete system of sewerage in the town, a large proportion of which consists of properly constructed sewers and pipe drains. There are, however, a considerable number of stone drains still in existence. These, when opportunity allows, are gradually being converted to a more satisfactory type. On two sides of the town there are main intercepting sewers, which convey the sewage of the town to the sewage works. Except in one small portion of the town the sewage finds its way by natural gravitation to the works. From this lower portion the sewage is lifted to a higher level by a Shone's Ejector, the air being automatically compressed by the sewage coming from the higher levels. The combined system of drainage is in vogue.

REMOVAL OF REFUSE.

The system in general use is that of pan closets, and at the close of the year 1901 there were 20,477 of these in the borough. The contents are emptied weekly or oftener, conveyed to one of two depots, and there mixed with shoddy dirt, and afterwards sent by boat or rail to agricultural districts where the material is sold to the farmers for manure.

Owing to complaints of nuisance and legal proceedings by an adjoining Authority the Corporation have been compelled to convert the closets supplying one depot to the water carriage system, and they have adopted generally the waste water closet. During the year rather over 3,000 have been converted, and at the close of 1902 there were in the borough :—

Sanitary Pans	17,268
Iron Tanks and Cesspools ...	27
Clean Water Closets	2,598
Waste Water Closets	8,856
Latrines	983

When the above-mentioned district is converted I trust the local authority will hold their hands for a time to see how the waste water system acts, as though an improvement over the can system, it is greatly inferior, from a sanitary point of view, to the clean water system.

With the increase in the water carriage system, there is a slow decrease in the number of ashpits in the town and a gradual increase in the use of the ashcan. This is a real sanitary advance, and the adoption of the ashcan should be urged as much as possible.

The contents of the ashpits and ashcans are chiefly conveyed to destructors, of which there are three in the town, and are there burnt. The contents of the ashpits ashcans, and closet cans are collected by the staff, horses and carts employed by and under the control of the Sanitary Committee. The burnt destructor refuse after being crushed and screened is used for filling the bacteria beds at the sewage works, for making concrete, paving flags, and for mortar, etc. A plant for making the paving flags was erected by Messrs. Fielding & Platt, of Gloucester, under the supervision of the Health Committee, and formally opened in the month of March.

WATER SUPPLY.

The water supply is from upland gathering grounds, either owned or under the control of the Corporation. It is of great purity, but in some portions of the gathering

area there is a considerable amount of peaty soil, and the water from this area has a tendency to dissolve the lead in the service pipes. To remedy this the water is treated as it enters the reservoir.

THE EDUCATION ACT.

As in the present year, by this Act, the control and management of the Elementary Schools in the Borough becomes one of the duties of the Corporation, I wish briefly to indicate suggestions by which sanitary conditions of the Borough may be advanced through their influence

I. The teaching of elementary hygiene in the schools, not by introducing it as a special subject necessarily, but by periodic lectures by a qualified lecturer, and by introducing into the object lessons much useful information on sanitary conditions.

II. By regular reports to the Health Authority of children said to be absent in consequence of Measles, Whooping Cough, &c.

III. The advisability of children absent for sore throats, swollen glands, opthalmia, and skin diseases being medically examined before admitted to the ordinary classes.

IV. The special instruction of the older girls in the hygiene conditions connected with household duties, and in the care and feeding of infants.

REPORT OF THE CHIEF INSPECTOR, 1902.

Re Cattle, Meat, and other Inspections.

To the Medical Officer of Health.

Sir,

It appears desirable that to properly estimate the varied duties which fall on the staff of the Health Department something more than a mere statement of figures and tables is necessary.

First in importance is the prompt dealing with those cases of disease which are notified as of an infectious character, and which require visiting to ensure isolation at home or by removal to hospital. When an outbreak of this nature assumes epidemic proportions it taxes all the energies of the staff to keep up with the necessary enquiries as to the "suspects and contacts," and in consequence the outbreak of Smallpox in August has necessitated a great deal of time being spent by each Inspector in visiting houses, mills, workshops, lodging houses, schools, &c Also in regard to the cases of Typhoid and Scarlet Fever similar investigations have to be made. It will thus be seen that the removal of 646 patients to hospital, and the necessary inquiries, stovings, bathings, and disinfections has been no light work. There are also the investigations into the sanitary conditions of the premises visited, and the issue of notifications for the stripping, cleansing, or limewashing of houses, and for defects of property or drainage.

The accompanying tables show the number of damp, dirty, and defective houses dealt with, and the improvements effected by repairs, cleansing, ventilation, proper water supply, and the removal of overcrowding, gas and water leakages, &c.

A considerable amount of work has been found in the removal of drainage defects. By the 224 smoke tests of 390 houses, 146 defective conditions have been discovered, and much good work has been done in remedying them by laying new pipes, with the necessary traps, ventilating grids, and connections to the sewers.

Some amount of trouble has been experienced by the repeated blockages of waste water closets, but I have no doubt that as the system becomes more general the proper use of these receptacles will be appreciated and minimise the evil of depositing chamber refuse near yard or street gullies.

Regular and systematic attention has been paid to the cleanliness of bakehouses, dairies, slaughter houses, cowsheds, piggeries, tripe boiling places, and in the removal of stable manure.

The old evil of putrid mill lodges is almost a relic of the past, and the dozen or so dealt with during the year were of a temporary character, arising from neglect and carelessness. With improved appliances for cooling and condensation at the mills, we may look forward to a further improvement by the increased supply of water by the trades main from Strinesdale Reservoirs.

Considerable attention has been paid to the improvement of the closet accommodation at the various factories and workshops, and also to improved means of escape from these buildings in case of fire.

Very little cause for complaint has been found in obtaining compliance with the Shop Hours and Shop Seats Acts.

A larger number of food samples (174) have been purchased than in any previous year, and the purchase of these at suitable times always means extra hours for the Inspector and a temporary neglect of sanitary work in his district.

This extra work your staff of Inspectors have always been willing to cheerfully undertake, along with all other special visits necessitating attendance either before or after the ordinary office hours. Consideration of mutual interests begets willing service, and on these grounds your staff of officers have no ground of complaint.

It remains yet to offer a few remarks on the steps which it has been found necessary to take in the course of the year, regarding the inspection of animals arriving in the town intended for human food.

It will be seen from the accompanying table that 9 beasts, 20 pigs, 6 sheep, and 3 calves have been dealt with and destroyed, and some two dozen or more special inspections have been made of animals not altogether sound, and that offal of various kinds, amounting to several hundreds of pounds, has been destroyed. The total amount of unsound food destroyed during the year amounts to about 8,226 lbs.

It is also desirable to notice that many of these carcases have been voluntarily forwarded for destruction, when accidents of various kinds have rendered them unfit to prepare or expose for sale.

The evil practice of indiscriminate loading of animals has been greatly abated by actions taken against drovers and railway companies some few years ago, but it seems almost impossible to avoid occasional accidents to animals which

are often brought into markets in an exhausted condition, and then undergo long journeys by rail in cramped and confined trucks, and often further suffer from want of food and water.

I am perfectly satisfied that these losses of valuable animals would be greatly minimised by more vigilant supervision on the part of the officers of the Royal Society for the Prevention of Cruelty to Animals, in seeing that the railway officials where these cattle are loaded perform their duty in carrying the same with safety, and without cruelty or unnecessary punishment.

Past experience warrants me in suggesting that where animals intended for preparation as human food are being despatched from one market to another, inter-communication between the Society's officials of one town and another ought to be instituted, and inquiries made as to the cruelty witnessed in the course of a railway journey, and the Sanitary or Health Officers being left to deal with the disposal of such dead or injured animals, as may come into their several districts.

Considerable work has been found for the staff by the immediate and surrounding districts where it is known that carcases of a doubtful character are prepared and surreptitiously brought into the town and offered for sale.

About the middle of the year two of these carcases were found exposed in the market for which they had been prepared in one of the out-districts, and on the attention of the Markets Committee being called to the dealings of the stallholder, they wisely adopted the drastic measure of giving him notice to quit the market—a most desirable step, seeing that repeated cautions had had no effect.

A marked improvement has since been noticeable in the quality of the meat exposed for sale in the Markets and in the shops about the town, and I have no hesitation in saying that the exhibits to be found therein will compare creditably with what may be seen in the markets and shops of any of the surrounding towns.

It is to be hoped that such further control and discipline may be secured in the supervision of the meat and other edible foodstuffs for the people as will fully justify the wisdom of the appointment of a special Inspector, who has to devote the greater portion of his time to this onerous work.

I have the pleasure and satisfaction of reporting a complete year of freedom from any contagious disease amongst animals.

I remain,

Your obedient servant,

THOMAS RUSHWORTH,

Chief Sanitary Inspector.

Carcases, etc., inspected and destroyed during 1902 :—

	lbs.
20 Pigs, weighing	3,082
6 Sheep „	320
3 Calves „	104
9 Beasts „	4,144
24 Special Inspections of Cattle, &c.	
Offal, weighing	168
Unsound Meat, weighing ...	408
Total	8,226

TABLE No. 24.

FEMALE INSPECTORS' REPORT, 1902.

	Visits paid.	Re-Inspection.	Notices served.	Notices complied with.
Births	1464	155	...	...
Deaths of Infants (under 12 months)	184	19	...	...
Defective Houses found	96	1	96	1
Workshops	285	11	16	11
Shop Hours Act	516	482	236	229
Enquiries for Shop Seats	70	12	9	8
Infectious Diseases...	43	23	...	...
School Notifications	336	10	...	...
Special Cases	9	4	1	1
Cottage Lectures	3	...	...	...

TABLE No. 25.

DAIRIES AND MILK SHOPS.

District.	No. on Register 1901.	No. Discontinued, 1902.	No. Registered, 1902.	No. on Register, 1902.	Farms *	Cases of Sickness.					No. removed to Hospital.	Treated at Home.
						Smallpox	Scarlet Fever	Typhoid Fever	Diphtheria	Erysipelas		
No. 1 ...	103	3	9	109	...	...	4	...	...	...	1	3
,, 2 ...	61	4	10	67	10	...	...	...	...	...	...	
,, 3 ...	63	5	7	65	13	...	...	...	...	...	...	...
,, 4 ...	51	3	4	52	1	...	2	...	...	..	1	1
,, 5 ...	40	6	6	40	49	...	...	...	...	...	...	..
Totals ...	318	21	36	333	73	...	6	...	...	...	2	2

* Farms Visited by District Inspectors shown in their Report.

No. of Visits Paid	844
No. of Notices Served	24
No. of ,, Complied	23
Re-inspections of work in progress or under notice	103
Miscellaneous Visits (to Owners or Agents, etc.)	42

Nature of Defects.	Notices Served	Notices Complied
Houses Repaired	2	2
Dirty Houses	...	...
Damp, Defective Roof, etc.	7	7
Defective Ventilation	...	...
Defective Water Closets	1	1
Defective Cellars	2	2
Yards and Passages repaired and flagged	3	3
Directly connected with Sewer	1	...
Untrapped Drains	5	5
Defective Drains	8	8
Defective or Short Slop Pipes	2	2

3 Gulley traps have been fixed and 12 yards of Channel tiles and drain pipes laid or re-laid.

TABLE No. 26.

Showing the number of Smoke Observations taken and Inspections of Mill Lodges and Slaughter-Houses made during the years 1901-1902.

Fortnight ending		Smoke Observations.		Mill Lodges Inspections.		Slaughter-Houses Inspections.	
1901.	1902.	1901.	1902.	1901.	1902.	1901.	1902.
Jan. 5	Jan. 4...	11	...	96	155	133	183
,, 19	,, 18...	51	46	129	125	181	169
Feb. 2	Feb. 1...	42	24	187	225	204	207
,, 16	,, 15..	33	...	122	130	182	209
Mar. 2	Mar. 1...	14	3	182	242	176	203
,, 16	,, 15...	57	...	68	149	196	212
,, 30	,, 29...	52	...	258	229	157	175
Apr. 13	Apr. 12...	39	8	64	127	160	186
,, 27	,, 26...	44	...	198	171	175	190
May 11	May 10...	71	...	145	155	213	207
,, 25	,, 24 ..	89	...	270	248	226	193
June 8	June 7...	66	10	99	134	188	173
,, 22	,, 21...	83	...	163	247	200	233
July 6	July 5...	58	...	229	231	228	208
,, 20	,, 19...	59	...	157	208	214	235
Aug. 3	Aug. 2...	78	8	160	229	227	208
,, 17	,, 16...	52	5	84	141	181	208
,, 31	,, 30...	50	3	250	114	177	52
Sep. 14	Sep. 13...	...	2	69	138	120	160
,, 28	,, 27...	47	...	171	190	135	126
Oct. 12	Oct. 11...	56	...	136	106	146	172
,, 26	,, 25...	55	...	191	108	176	116
Nov. 9	Nov. 8...	26	...	132	171	153	142
,, 23	,, 22...	27	26	87	237	139	134
Dec. 7	Dec. 6...	57	5	183	94	173	118
,, 21	,, 20...	31	7	148	132	203	168
January 3, 1903 ...		...	...	...	135	...	86
Totals		1248	147	3978	4571	4663	4673

TABLE No. 27.

HALF-HOURLY SMOKE OBSERVATIONS,

taken from December 21st, 1901, to December 22nd, 1902.

Total Observations taken.	No Black Smoke.	Under 1 Minute.	Under 2 Minutes.	Under 3 Minutes.	3 and 4, both inclusive.	Over 4 Minutes.
147	24	19	31	27	36	10
Percentage ...	16·32	13·60	21·08	18·36	24·48	6·80

TABLE No. 28.

NATURE OF SMOKE APPLIANCES IN USE IN THE BOROUGH OF OLDHAM, 1902.

Name of Appliances.	No. of Mills.	No. of Boilers.
Cass's Coking Machines	3	10
Dyson & Williamson's Coking Machines...	1	3
McDougall's do. ...	1	1
Bennis's Sprinkling Stokers	2	6
Proctor's do.	6	18
Meldrum Bros.' Forced Draught Furnace	6	7
Granger's do. do. ...	1	1
Wilton's do. do. ...	1	5
Broadbent's Louvre Air Regulators... ..	18	60
Broadbent's Steam Pokers	1	6
Tweedale & Massey's Air Regulators ..	1	2
Caddy's Induced Draught Furnace	5	13
Caddy's Tubular Bars	7	21
Yates & Thom's Rocking Bars	4	10
Butterworth's Sectional Bars	7	28
Wilson's Moveable Bars	2	8
Holden's Hollow Bars and Dead Plates	1	2
Hollow or Split Bridge Walls	5	12
Taylor's Patent Bridge Walls	1	3
Whittle's Steam Injectors	2	7
Martin's Swing Doors	2	10
	77	233

Where no Appliances are fixed—94 Mills ; 209 Boilers. There are also about 70 Workshop Chimneys not on books.

TABLE No. 29.

LIST OF FIRMS REPORTED TO SANITARY COMMITTEE DURING THE YEAR 1902.

NAME OF MILL	Where Situated	No of Boilers	Length of Boilers	Diameter of Boilers	Coal Consumption Weekly	No. of Boilers Working	Nature of Appliances Fixed.	How disposed of
			ft.	ft. in.	tons.			
Tay	Windsor Street ...	5	32	8 6	100	4	No Appliances	Fined 10/- and Costs
Prince of Wales..	Vulcan Street	4	30	8 0	70	3	do.	Fined 40/- and Costs
*Holyrood	Windsor Street ..	2 2	30 28	7 6 7 6	72	4	Broadbent's Air Regulators	Fined 10/- and Costs Cautioned by Com'te.
Alma	Scott Street..	4	30	8 0	52	3	Whittle's Steam Jets	Fined 10/- and Costs
Albany	Vulcan Street	1 1	30 30	8 0 7 6	48	2	No Appliances	Cautioned by Committee
Coppice	Cobden Street	1	28	7 0	21	1	Meldrum's Forced Draught Furn's.	do.
Anchor	Daisy Street	3	30	7 6	40	2	Yates & Thom's Rocking Bars	do.
Britannia	Briton Street	2 3	30 30	7 6 7 0	82	4	Broadbent's Air Regulators	Notice Served
Chamber	Heron Street	2	30	8 0	36	2	No Appliances	Cautioned by Committee

* Reported to Committee on two occasions.

TABLE No. 30.

SMOKE PROSECUTIONS DURING 1902.

No. of Firms Fined.	Amount of Fine.	No. of times previously prosecuted.
1	40/- and Costs	11
1	10/- ,,	7
1	10/- ,,	1
1	10/- ,,	4
1	5/- ,,	3

TABLE No. 31.

SAMPLES OBTAINED UNDER THE "SALE OF FOOD AND DRUGS ACT."

Year.	Total.		Milk		Butter.		Bread and Flour.		Other Groceries.		Wines, Spirits and Beer		Sundries.	
	No. of Samples	Percentage Adulterated	No. of Samples	Percentage Adulterated	No. of Samples.	Percentage Adulterated	No. of Samples.	Percentage Adulterated.	No of Samples.	Percentage Adulterated.	No. of Samples.	Percentage Adulterated.	No. of Samples.	Percentage Adulterated.
1876	74	27·0	38	42·1	7	...	6	...	23	17·4	...	...	...	..
1877	81	23·4	34	26·5	...	...	21	..	.	...	20	50·0	6	...
1878	74	25·7	55	21·8	..	..	...	..	12	8·3	6	100·0	1	...
1879	77	14·3	54	20·4	...	...	12	..	6	...	3	.	2	...
1880	87	21·8	43	27·9	8	12·5	8	...	22	18·2	6	33·3	...	...
1881	100	10·0	67	10·4	13	...	..	...	10	10·0	7	28 6	3	...
1882	100	19·0	44	22·7	15	33·3	4	...	17	...	13	30·8	7	...
1883	101	12·9	43	16·3	8	37·5	2	...	20		18	16·6	10	..
1884	85	8·2	47	2·1	11	18·2	.	..	8	37·5	8	12·5	11	...
1885	63	15·9	43	18·6	17	11·7	...	...	3		..	...	...	...
1886	62	9·7	40	5·0	9	1·1		...	13	23·1	.	...	...	...
1887	75	8·0	57	8·8	4	...	4	...	6	16·6	4	..	...	...
1888	90	8·9	70	8·6	4	25·0	...	...	4	25·0	8	...	4	..
1889	98	6·1	80	6·2	5	20·0	...	..	4	.	6	...	3	.
1890	98	6·1	75	6·6	7	...	...		6	16·6	4	...	6	..
1891	119	5·9	75	4·0	13	23·1	...	.	27	...	4	25·0	...	..
1892	90	1 1	68	1·5	3	...	...	...	7	..	4	.	8	...
1893	106	10·4	84	8·3	7	42·8	...	...	6	...	3	33·3	6	.
1894	139	2·1	83	3·6	18	...	6		26	...	3		3	...
1895	147	6·1	120	5·0	11	...	...	...	1	...	6	...	9	33·3
1896	154	6·5	138	6·5	9		...	...	1	...	6	16·6	...	...
1897	169	3·0	150	2 0	8	25·0	...	...	7	...	.		4	...
1898	75	4·0	61		14	21·4	.	...	...	..	...	..	...	
1899	86	4·6	59	1·7	27	11·1	.	...	.	...	..	.	...	...
1900	127	12·6	72	8 3	29	*24·1	...	...	8	...	18	16·6	.	...
1901	155	7·1	109	6·9	34	11·8	...	...	8	...	...	...	4	...
1902	174	2·3	118	1·7	26	3·8	...	...	23	4·3	5	...	2	...

* Excess Water.

TABLE No. 32.

SHOWING THE NUMBER OF WORKSHOPS REGISTERED, VISITS MADE, AND DEFECTS REMOVED.

* The work of the two Female Inspectors, with regard to Workshops and Shop Hours, will be found on Table 24.

No. of Workshops on Register December, 1901			413
,, ,,	Discontinued during 1902		14
,, ,,	Registered during 1902		17
,, ,,	on Register December, 1902		416
, ,,	Reported to Factory Inspectors		14
* ,, Visits Paid	Female Inspectors	285	1856
	Male Inspector	1571	
,, Notices Served (Male Inspector)			144
,, ,, Complied			127
* ,, Visits under Shop Hours Act (Male Inspector)			339
,, Notices Served and Complied			32
Re-Inspections of Work in Progress or Under Notice			620
Miscellaneous Visits (to Owners, Agents, &c.)			250

Nature of Defects.	Notices Served.	Notices complied.
Workshops Repaired	5	5
Dirty Workrooms	18	18
Damp, Defective Roof, &c.	22	22
Defective Ventilation	8	7
Defective Water Supply	1	1
Defective Cellars	7	6
Overcrowding	..	..
Insufficient or no Closet Accommodation	6	5
Defective Closets	4	4
Privy Nuisances	105	99
Untrapped Drains	7	7
Defective Drains	17	16
Defective or Short Slop Pipes	6	5
Directly connected with Sewer	2	1
Fire Escapes	37	28
Defective Chimneys	2	2
Accumulations	12	11

7 Gully Traps have been fixed and 68 Yards of Channel Tiles and Drain Pipes laid or re-laid.

TABLE No. 33.

SHOWING THE NUMBER OF BAKEHOUSES REGISTERED VISITS MADE, AND DEFECTS REMOVED.

No. of Bakehouses on Register, December, 1901	351
,, ,, discontinued during 1902	5
,, ,, registered during 1902	13
,, ,, on Register, December, 1902	359
,, Visits paid	1056
,, Notices served	35
,, ,, complied	29
Re-inspections of work in progress or under notice	154
Miscellaneous Visits (to Owners, Agents, etc.)	62

Nature of Defects.	Notices Served	Notices Complied
Bakehouses Repaired	4	4
Dirty Bakehouses	5	5
Damp, Defective Roof, etc.	9	9
Defective Ventilation	3	2
Accumulations	4	4
Defective Cellars	3	3
Directly connected with Sewer	1	1
Defective Closets	1	1
Untrapped Drains	6	5
Defective Drains	7	6
Defective or Short Slop Pipe	2	2

5 Gulley Traps have been fixed, and 18 yards of Channel Tiles and Drainage Pipes laid or re-laid.

District	No. on Register	Where Baking is Done.					Kind of Oven Used.				
		Living Room	Living Room and Kitchen	Out Kitchen	Cellar	Bakehouse	Ordinary	Special Iron	Gas	Brick	Stove
No. 1	83	31	12	16	15	21	28	59	10	8	1
,, 2	74	26	8	12	14	15	27	43	3	5	2
,, 3	83	20	22	22	6	14	17	52	16	4	1
,, 4	48	16	4	14	5	9	15	29	7	5	1
,, 5	71	24	18	8	7	13	29	39	18	1	1
Totals	359	117	64	72	47	72	116	222	54	23	6

TABLE No. 34.

MAGISTERIAL PROCEEDINGS, 1902.

No. of Cases.	Particulars of Complaint.	How Disposed of.	Penalties. £	s.	d.
5	Smoke Nuisance ...	One fined 40/- and costs; three 10/- and costs; and one 5/- and costs..	3	15	0
1	Milk Adulteration	Fined 40/- and costs ...	2	0	0
1	Butter Adulteration.....	Fined 20/- and costs ...	1	0	0
3	Being in possession of Diseased and Unsound Meat	Two fined £10 and costs; and one £5 and costs ..	25	0	0
1	Adulterated Coffee	Fined 5/- and costs	0	5	0
1	Unlabelled Margarine ..	Fined 20/- and costs ...	1	0	0
1	Unlabelled Margarine	All one purchase. No appearance of principal. Warrant issued	...	...	...
3	Butter Adulteration .				
16		£	33	0	0

TABLE No. 35.

FOOD INSPECTOR'S REPORT, Aug. 9th to Dec. 31st, 1902.

Visits to Markets	403
Do. Cattle Wharves	317
Do. Meat Shops	817
Do. Fish do.	152
Do. Fruit and Vegetable Shops	189

	Visits paid.	Notices served.	Notices complied with.
Slaughterhouses	801	3	3
Farms	66	12	3
Dairies	54	3	2

DISEASED OR UNSOUND FOOD DESTROYED.

	Tons.	Cwts.	Qrs.	Lbs.
6 Pigs	0	8	2	26
2 Sheep	0	1	1	14
Meat	0	14	0	15
Offal	0	0	3	4
Fruit	0	1	3	1
Total	1	6	3	4

	Tons.	Cwts.	Qrs.	Lbs.
2 Seizures of Food under P.H.A., 1875	0	2	2	2
83 Surrenders of Food under P.H.A., 1875 ...	1	4	1	2
Total	1	6	3	4

INSPECTORS' ANNUAL REPORT, 1902.

Total Number of Reports of Nuisances and Notices Served	2859
Total Number of Notices complied with	2182
Total Number of Notices complied with Order of Committee in 1902	525
Number of Complaints Received and Visited	1108
Re-Inspection of Nuisances under Notice	9585
Number of Cases dealt with by Sanitary Committee in 1902 ...	585
Number of Cases remaining unabated	60
Number of Cases dealt with by the Magistrates in 1902	16

House-to-House Inspection	54
Total Number of Houses Inspected on Complaint...	369
Houses Repaired...	47

	Notices Served.	Notices Complied with
Dirty Houses	66	64
Damp, Defective Roof, &c....	825	804
Defective Ventilation	22	19
Defective Cellars	63	62
Privy Nuisances	926	827
Ashpits	83	54
Defective Water Supply	164	177
Overcrowding	5	2
Unfit for Habitation	9	8

DRAINAGE DEFECTS.

	Notices Served.	Notices Complied with
Blocked Drains	513	527
Defective Drains	319	233
Gully Traps improperly laid	5	4
Drain inlets untrapped or defectively trapped... ...	202	263
Waste Pipes and Sloppipes directly connected with drain	27	24
Waste Pipes improperly trapped	7	9
Slop Pipe, defective or improperly ventilated... ..	217	193
Defective Water Closets	26	23
Defective Waste Water Closets...	415	416
New Water Closets Provided	6	7

No. of Smoke or other Tests, 224. No. of Houses Tested, 390.
No. of Defects found, 146. 1239 yards of Channel Tiles and Drainage Pipes have been laid or re-laid during the year.
Traps fixed, 263. Ventilating Grids, 19.
Houses connected with Main Sewer, 51.

	Visits Paid.	Notices Served.	Notices Complied with
Bakehouses	1104	35	29
Dairies and Cowsheds	979	23	23
Farms	146	2	2
Pigsties	1389	...	...
Slaughter Houses	4673	18	18
Offensive Trades	1138	10	10
Mill Lodges	4571	11	12
Factories and Workshops	1572	144	128
Shop Hours Act	340	31	32

Inspections under Contagious Diseases (Animals) Act	2
Animals destroyed	18
Unsound Food destroyed	6,464 lbs.
Samples taken under Food and Drugs Act	174
Letters written to Property Owners or Agents, &c.	49
Miscellaneous Visits, &c	3107
Privies inspected	9146
New Privies built	3
Ashpits built, or new Ashcans provided	37
Yards and Passages Repaired and Flagged	43
Erections in Yards reported	13
Defective Urinals	8
Accumulation of Offensive Matter	297
Carcases of Animals in Water	16
Stagnant Water	19
Manure Heaps	21
Manure Pits built	1
Poultry in Houses	32
Dust and Fly from Mills	2
Low or Defective Chimneys	48
Dangerous Places reported	87
Coal Gas Nuisances and Escapes reported	10
Dead Bodies removed to Mortuary	18
Fire Escapes	43
Visits to Cases of Infectious Diseases	2116
Visits to Cases of Phthisis	118
Visits to Deaths under 1 year of age	335
Cases removed to Hospital	640
Houses Stripped or Cleansed after Infectious Disease	74
Visits to cases of Diarrhœa	21

HOUSES AND CLOTHING DISINFECTED.

Number of Houses Disinfected during the year	979
Number of Rooms do. do. do.	2552
Number of lots of Clothing Disinfected during the year	961
Number of Articles do. do. do.	9668
Number of Articles destroyed do. do.	94

CLOTHING, &c., 1901-1902.

Articles.	Disinfected.		Destroyed.		Totals.	
	1901.	1902.	1901.	1902	1901.	1902.
Blankets	1337	1289	...	2	1337	1291
Sheets	753	811	3	2	756	813
Pillows	1437	1570	19	13	1456	1583
Bolsters	724	761	6	6	730	767
Quilts.....	1019	1227	2	5	1021	1232
Mattresses	25	18	49	34	74	52
Beds	711	994	63	30	774	1024
Carpets	18	11	2	3	20	14
Rugs	66	119	5	...	71	119
Curtains...	19	23	...	...	19	23
Clothes	2505	2327	29	38	2534	2365
Sundry Articles ...	321	285	12	10	333	295
Total	8935	9435	190	143	9125	9578

INFECTIOUS CASES, 1901-1902.

(Cases and Visits).

	1901.	1902.
Number of Cases	795	... 1147
Number of Visits	1758	. . 2116
Number of Visits to Cases of Phthisis	206	... 118

SANITARY DEPARTMENT, 1902

RHODES BANK.

Number of Sanitary Pans in the Borough	... ...	17268
Do. Cesspools, &c., in the Borough	... ...	27
Do. Water Closets do.	... ...	2598
Do. Waste-water Closets do.	... ...	8856
Do. Trough Closets do.	... ...	983
Do. Ashpits do.	... ...	9910
Do. Ash Cans, &c. do.	... ...	5212
Do. Houses represented	... ...	33647
Do. Mills, Workshops, &c. do.	... ...	547
Do. Churches, Schools, &c. do.	... ...	204

NIGHTSOIL DEPARTMENT.

Number of Sanitary Pans Emptied during the night	...1018610
Do. Cesspools, &c., do. do.	... 15
Do. Collections of Butchers' Offal during the night	... 4567
Do. do. Fish Offal do.	... 12235
Do. Loads of Excreta collected	... 10492
Do. do. Butchers' Offal collected	... 656
Do. do. Fish Offal collected	... 697
Do. do. Shoddy Dirt collected	... 5265
Do. Tons of Manure sent out from Higginshaw ...	... 15253
Do. do. do. Bower Clough ...	... 5980
Total Number of Tons sent out	.. 21233

ASHES DEPARTMENT.

Number of Ashpits Emptied during the day	... 38738
Do. Ash Cans do. do.	... 256025
Do. Loads of Ashes taken to Destructors	... 26929
Do. do. do. Corporation Tips ...	... 4907
Do. do. do. Other Tips	... 4119
Do. do. Clinker removed	... 4550
Total No. of Loads removed	... 40505

DESTRUCTORS.

Quantity of Ashes, Fish Offal and Garbage consumed :—	Tons	Cwt.
Rhodes Bank Destructor	14585	7
Robin Hill ,, ...	7940	12
Hollinwood ,, ...	7365	15
Total	29891	14

Quantity of Mortar Sold :—	Tons	Cwt.
Rhodes Bank Destructor	1421	0
Robin Hill ,, ...	1055	15
Hollinwood ,, ...	886	11
Total	3363	6

APPENDIX.

REPORT

ON

SMALLPOX

IN

OLDHAM

DURING THE YEAR 1902.

BY

JAMES B. WILKINSON, M.D., D.P.H.,

MEDICAL OFFICER OF HEALTH.

REPORT ON SMALLPOX DURING THE YEAR 1902.

During the year 187 cases of Smallpox have come under notice. Very early in the year two cases were received into Strinesdale Hospital from Stalybridge, both of which cases recovered.

In April an Oldham man, who had been working in the neighbourhood of Nelson, where there had been some cases of this disease, was reported to be suffering from Smallpox. He was at once removed to Hospital, and the usual precautions at the house were taken. No further cases occurred. The patient subsequently died from complications rather than Smallpox.

No further cases were heard of in the Borough until Saturday, August 30th, when a case was reported in one of the lodging-houses in the town. The man had lived, a fortnight previously, in a similar house at Bolton, from which one or more cases had been removed while he was staying there. The man was removed to hospital the same evening, disinfection, as far as possible, was carried out, but the inmates of the house, of whom there were about 200, refused to be vaccinated. Fourteen days later eight cases occurred in the same house, and one in a private house, probably contracted from the same source. This man was kept at home five days before the disease was recognised, and gave the complaint to his wife and three children, and through the children to a school companion.

Again, about 14 days later another crop of seven cases appeared in the lodging house and two cases outside. One of the latter had lived at the lodging-house until a few days before his illness, when he went to his sister's in Ashton Road, and the other contracted the disease from his brother-in-law, an inmate of the lodging house, who had been removed to hospital the previous fortnight. This case was a very mild one, and the man was attending his work and visiting a public house five or six days after the appearance of the rash, and during this period conveyed the disease to at least 16 or 17 persons.

About this time one of the men living at this lodging-house transferred his abode to another lodging-house, and breaking out with the disease a fortnight later, started a series of cases in that house, which continued until the end of the year.

During the first week of November a man living off Ashton Road, who occasionally frequented the first-named lodging-house, contracted Smallpox. He was kept at home three or four days after the appearance of the eruption before being notified, and during this period, either directly or indirectly, the disease was conveyed to 15 or 16 persons.

On November 21st, an untraced case was reported at Hollinwood. A fortnight later, two unvaccinated children in this house contracted the disease, the two elder and the two younger, who had been vaccinated in infancy, and the father, who had been re-vaccinated when an adult, escaping. Several other cases subsequently occurred in this district, which were associated with one of the mills, indicating that an unrecognised case had been working there.

At the end of December several cases occurred in a third lodging-house, being caused by a mild case, which

was not detected until the more severe cases caused a search to be made.

At the close of the year the cases were spread throughout the town, giving every indication that the epidemic had been by no means controlled, in spite of the endeavour to keep every person known to be exposed to infection under observation. With the exception of a very few cases where the source of the disease could not be traced, all the 184 cases forming the epidemic up to the end of the year owed their origin directly or indirectly to the first-mentioned patient.

Generally speaking, the attacks have been exceedingly mild, both in the vaccinated and in the unvaccinated cases, and the percentage of deaths has been extraordinarily low.

Speaking, with a considerable experience of Smallpox, I have never previously seen such a series of mild cases as have been admitted to Strinesdale during the last five months.

Of the 184 cases with which we have had to deal since August, 177 were Oldham cases, 6 came from Failsworth, and 1 from Alt, in the Ashton Rural District.

It was found necessary, when Strinesdale Hospital became full, to remove 9 of the Oldham cases to the Joint Hospital of Chadderton, Crompton, and Royton, at Cinder Hill, a reciprocal arrangement having been concluded with the Hospital Board.

With these exceptions we were able to accommodate all the cases at Strinesdale, though at times the Hospital was very crowded.

Three abortive cases, after vaccination, in one family were so trivial that removal was not deemed necessary, there not being above 20 spots among the three, and these drying up after a few days.

The distribution throughout the town was as follows :—

In Lodging-houses	47	1 house contributing	23
		1 ,, ,,	20
		1 ,, ,,	4
In the Workhouse	5		
In Private Houses	125	Primary Cases ...	71
		Secondary Cases ...	54

In two houses in which a case occurred which was unrecognised until the secondary cases appeared, every member of the family (six in each house) contracted the disease.

In two other houses in which the first case was not recognised for four or five days, there were also 5 secondary cases, not, however, in these instances attacking the whole family.

Eight patients out of the 184 died in Strinesdale, and one in Cinder Hill, giving a percentage of deaths of 4·9.

Vaccination.—As is necessary under the Vaccination Act, the records of the condition as to vaccination has been kept, and is recorded as follows :—

Cases vaccinated before the disease was contracted	119 ;	died, 4
Cases not vaccinated before the disease was contracted	64 ;	died, 5
Doubtful	1 ;	died, 0
Total	184	9

Two patients were also re-vaccinated—one 35 years ago, but showing no marks of either vaccination or re-vaccination, and the other 25 years ago, with 4 vaccination scars showing.

The death percentage of those vaccinated previous to the disease being contracted was 3·4 per cent., of those not so vaccinated 7·7 per cent.

The following table gives particulars of fatal cases :—

VACCINATED IN INFANCY.

No.	Age.	Vaccination Marks.	Severity of Disease.	In Hospital.
1	51	1 Mark	Moderate discrete	56 days †
2	43	1 Small Mark ..	Severe discrete ...	8 days
3	44	3 Marks	Severe discrete ..	11 days *
4	55	2 Marks	Semi-confluent ..	7 days
NOT VACCINATED PREVIOUS TO CONTRACTION OF DISEASE.				
5	5	..	Semi-confluent ...	29 days
6	34	...	Severe discrete ...	14 days
7	11	...	Semi-confluent ..	7 days
8	2	...	Confluent	10 days
9	35	...	Semi-confluent ...	8 days

† Death caused by paralysis.

* This man had a fit of apoplexy two or three months previously, and was paralysed on one side when admitted; the cause of death was a second attack of apoplexy.

Among the 119 persons vaccinated previous to the disease being contracted :—

5 had no vaccination marks.
12 ,, 1 ,, ,,
53 ,, 2 ,, ,,
29 ,, 3 ,, ,,
19 ,, 4 ,, ,,
1 ,, 5 ,, ,,

Of the 64 not vaccinated previous to their exposure to infection, 20 were vaccinated before the eruption appeared,

and in every one of these cases the infecting case had the eruption out at least three or four days previous to notification.

In two cases the eruption appeared ten days after vaccination. Both these patients had slept for four nights in the same room (one in the same bed) as the primary patient after the eruption appeared; both these attacks were very trivial, the eruption dying off in a few days. In 12 cases the eruption of Smallpox appeared nine days after vaccination. Eight of these were trivial and abortive; three ran a mild though typical course, and one was semi-confluent and fatal. In five cases the eruption appeared five days after vaccination, and in one three days after. All five ran the usual course, two being rather severe.

Two persons who were re-vaccinated after exposure to infection contracted Smallpox. In both these the eruption appeared on the ninth day after re-vaccination. Both had been nursing cases of Smallpox for four or five days after the eruption had broken out before they were re-vaccinated. The vaccinated cases averaged a stay of 20 days each in hospital, and the unvaccinated ones 26 days each.

In visiting the various houses in the Borough for the purpose of making enquiries, a record has been kept of their condition, and of the 71 private houses in which primary cases have occurred :—

28 were perfectly clean, and free from insanitary condition.
25 were moderately clean, but „ „ „ „
18 were dirty, or with other insanitary conditions.

In these houses there were 319 persons, who, living in the same house in which a Smallpox case had occurred, were deemed to be in contact, though several were never in the same room after the appearance of the rash, and in a few instances not even in the house. Respecting these

persons the following figures are interesting :—

Contacts.	Number.	Contracted Smallpox.	Percentage.
Not vaccinated before the 1st case in the house	122	38	31%
Vaccinated ,, ,, ,,	183	22	12%
Re-vaccinated ,, ,, ,,	6	0	...
Previously had Smallpox	8	0	...
	319	60	19%
122 Contacts not vaccinated before the 1st case in house.			
Never vaccinated	28	20	71%
Vaccinated after being in contact	94	18	19%
	122	38	31%
183 Contacts vaccinated previous to 1st case.			
Vaccinated in infancy only	93	20	21.5%
Re-vaccinated after being in contact	90	2	2·2%
	183	22	12%
Total Contacts.			
Never vaccinated	28	20	71%
Vaccinated before or after contact	283	40	14%
Had Smallpox	8	0	...

From the latter table it would appear that if the vaccinated had contracted the disease at the same rate as the non-vaccinated in these 71 houses, there would have been 220 secondary cases instead of the 60 which did occur.

The following table gives the number of contacts and cases of Smallpox living in the affected houses in five age periods, with the attack rate in those vaccinated previous to infection and in those not so vaccinated.

ATTACK RATE IN SIX AGE PERIODS OF VACCINATED AND NOT VACCINATED INMATES OF HOUSES AFFECTED.

AGES.	Under 5 years.		5 and under 10.		10 and under 15.		15 and under 20.		20 and upwards.		All Ages.	
	Vaccinated.	Not Vaccinated.	Vaccinated.	Not Vaccinated.	Vaccinated.	Not Vaccinated.	Vaccinated.	Not Vaccinated.	Vaccinated.	Not Vaccinated.	Vaccinated.	Not Vaccinated.
Contacts	18	21	6	28	9	28	19	7	120	3	172	87
Smallpox Cases ...	0	10	0	23	*1	18	1	5	67	7	69	63
Total Persons	18	31	6	51	10	46	20	12	187	10	241	150
Percentage of Attacks	0	32 %	0	45 %	10 %	39 %	5 %	41 %	36 %	70 %	28 %	42 %

* This child had no marks of Vaccination on her arm, but the mother stated she had been Vaccinated with one pock only when an infant.

It is not possible to give the same particulars of the inmates of the lodging-houses affected owing to the continually changing population.

Twenty-six members of the staff have all been brought into intimate contact with the cases in the process of removal, in hospital, or on discharge. None have contracted the disease; only one has previously had Smallpox. All the others have been recently re-vaccinated.

The epidemic has of course thrown an enormous amount of extra work on members of the staff, and all, without exception, have cheerfully responded to the calls made upon them. On more than one occasion I have had to fetch some of them out of bed at night to remove a case to hospital, and several times, various members have been at work up to 10, 11, and even 12 o'clock at night.

The general measures adopted have been removal of the patient to hospital as early as possible, the house disinfected, and all contacts have been compelled either to go to the Health yard and have a bath while their clothing has at the same time been disinfected, or to change their clothes at home and send the infected clothing for disinfection.

With regard to early removal there is considerable indication that the earlier the patient is removed the fewer have been the secondary cases.

The disinfection of the houses was, in the earlier cases, carried out by the ordinary method of fumigation with burning sulphur, and the walls of the infected rooms stripped of paper. It was found that this method of disinfection was not efficient, as two persons engaged in stripping the walls contracted the disease. In all the later cases the walls, floors, and ceilings are sprayed with formalin solution before the rooms are fumigated. The results of this method have proved satisfactory.

In the later cases also I have preferred that the contacts, when they have a change of clothing, should send their infected clothing to be disinfected, as I had considerable reason to doubt if the clothing could be efficiently disinfected while the owner had the bath.

The large number of contacts who had to be dealt with may be imagined from the fact that in the first three days of one week over 70 persons and in the whole week over 100 contacts were bathed and had their clothes disinfected. One person received a bath who had not had one for over 60 years. After these preliminary measures, all contacts were kept under observation for 15 or 16 days, and, where necessary, notice was served on the person and on the employer to keep away from work from the 13th to 15th days of contact.

Children in infected houses have not been allowed to return to school until 17 or 18 days after contact.

The patients, when discharged from hospital, have their clothing sent down a day or two previously for thorough disinfection, they are then brought down in the ambulance to the Health yard, where they are bathed and receive the disinfected clothing from the "safe" side of the disinfector. Of course, several baths are given at the hospital during the days before discharge.

In November it was considered necessary to make Chicken Pox notifiable, and up to the end of the year information was received of 4 cases of Smallpox, which had been looked upon as Chicken Pox.

I have, elsewhere, expressed my opinion that, humanly speaking, it is a person's own fault if he has Smallpox, and that it is within the power of every parent to prevent his children having it, and I have seen no single instance in the whole of this epidemic, or in any of the five other outbreaks with which I have been connected, which would lead me to alter this opinion. If people prefer to run the risk, or to allow their children to do so, of contracting this loathsome disease rather than undergo the simple operation of vaccination, the choice is theirs. Of the protection afforded by recent successful vaccinations, previous to the contraction of the disease, there cannot be the slightest doubt in the mind of anyone who has had to deal with an epidemic of Smallpox.

County Borough of Oldham.

THE

TREATMENT

— OF —

OLDHAM SEWAGE

During the Year 1902.

JAMES B. WILKINSON,
M.D., C.M., D.P.H., F.C.S.,
MEDICAL OFFICER OF HEALTH.

Town Hall, Oldham.

THE TREATMENT OF SEWAGE.

During the year 1902 the Sewage of Oldham has been purified, practically under the same conditions as in previous years—viz., by sedimentation in tanks, and the effluent from these in bacteria beds. All the sewage goes through the tanks in which the greater part of the suspended matter is removed, but up to the end of the year sufficient bacteria beds had not been constructed to allow the whole of the tank, effluent to be passed through them, though the proportion treated has been gradually increasing.

During the year five new Filters have been completed and put into use. Two of these were practically completed at the end of the year 1901, but owing to the work going on in connection with the broken culvert, they were not in use until the month of May.

The crushed and screened clinker from the Destructor Works has been found to answer very satisfactorily for the construction of these beds, and many thousands of tons, which formerly would have been tipped into waste places, have been utilised for this purpose.

Throughout the year the conversion of Pan Closets to Waste Water Closets has been going on; 3,260 being the total number converted. This conversion is naturally gradually increasing the amount of solids in the sewage, and in consequence giving a larger amount of sludge to be dealt with, and as this solid material is of a highly putrescible and soluble nature, there will probably be more solid matter deposited in the filter beds. This will have the effect of diminishing their capacity, and eventually of shortening their life.

This solid material also causes an increased difficulty in pressing the sludge, which seems to become more greasy, and tends to clog the press cloths.

No precipitants have been used during the year, but a considerable quantity of lime requires to be added to the sludge before it will press.

The samples of the filter effluent taken by the Mersey and Irwell Rivers Board Inspectors have invariably proved to be well below their standard. Those taken of the tank effluent have, of course, not been below this. On testing the samples of the effluent by incubation, a very large proportion remains good, and as this is an even better test than chemical analysis, the results of the treatment, as far as it has gone, may be considered entirely satisfactory.

The further extension of the filter beds has been under consideration during the year, and plans are being prepared for this purpose. The new beds will be so arranged that a portion of the beds can be used either for first or second contact.

The provision of beds for dealing with the storm water is also under consideration. The conversion of the other main wooden carrier to a concrete one is also very advisable.

In September Mr. Wylie, who has been the analyst at the Works since their initiation, left us for another appointment. There is no doubt that a great deal of the successful character of the sewage treatment at these Works has been due to the careful and able management of the beds by Mr. Wylie, and the experiments leading to this success carried out under his observation. Mr. A. H. Valentine (M. Sc. Vict.), who was appointed his successor, furnishes me with the following report on the analyses during the year :—

The character of the sewage is such that, as in the previous year, it is gradually increasing in concentration, owing, no doubt, to a corresponding increase in the number of slop and trough closets installed in the Borough. This may not be so evident judging from the yearly results, but the fact is strikingly evinced in carrying out analyses during a period of dry weather.

The bacteria beds still maintain on the whole their efficiency, though in the earlier constructed filters there is, according to approximate measurements, a great falling off in capacity. This loss is a serious factor to be taken into consideration, and as it is influenced in a detrimental sense by the amount of suspended matter in the tank effluent, it would seem desirable, apart from the employment of precipitants, to consider the adoption of some means by which this matter could be sensibly reduced. And indeed where a bed shows a greater reduction in capacity, even after a prolonged rest, the best course to adopt would be to refill, or partially refill, the bed with fresh clinker or mill ashes, and at the same time, where the conditions allow of it, to increase the depth of filtering material to three feet. It has been found that the material underneath the carriers of the older filters, and to some distance on both sides of the carriers, is of a slimy, black, foully-smelling nature, although at some distance beyond the carriers the material partakes of the nature and colour of the original mill-ashes. In all cases, however, the ashes have broken down and become of a finer and closer consistency. This, by itself, would tend to lower the capacity.

In order to distribute the tank effluent more equably over and into the material of the filters, there can be no doubt that rectangular cross-carriers or "shoots" fashioned in timber are necessary. The system of semi-circular "grips," fashioned in the clinker, has been tried in a modified form, but it has not proved a success here, and for two reasons. In times of flood, we have no means of nicely regulating the flow upon the filters, and any sudden inrush upon the "grips" would wash away entirely the finer stuff on top, which is intended to act as a straining material. Again, the labour involved in cleansing the "grips" is far greater than that required for the removal of accumulated sludge from the "shoots."

In all the more recently constructed filters, vent-pipes, resting upon square junctions, have been inserted at the upper ends of the drains which serve to carry away the filtered effluent from the beds. It is extremely probable that they will aid in the proper äeration of the beds during the intervals between the fillings and the periods of rest. There is a good upward current of air flowing through these vent pipes.

As regards the amount of work thrown upon the beds, this may be ascertained by referring to the chart appended to this Report. It will be seen that groups V., VI., VII., were compulsorily resting nearly five months of the year, in addition to the last two months of 1901, owing to the constructional work on an underground culvert. Filter 18 has been idle during November and December owing to the removal of the fine material which covered the surface to a depth of 6 inches, and its replacement by unscreened mill ashes. This fine material showed an increasing tendency to clog, thereby rendering the bed "tight," and so apparently reducing its capacity.

By the end of the year there were 23 beds in use, including the two, B and C, which are used for purifying the tank effluent drawn off by the floating arms, previous to sludging a tank. When not being used for this specific purpose, B and C are treated daily in the same way as the other beds. The total area of the beds in use is $6\frac{3}{4}$ acres. Eight beds, covering an area of two acres, in addition to the above, have been excavated and prepared for the deposition of clinker, and they should all be in use before the close of the ensuing year. There seems to be no essential difference as regards efficiency between clinker and mill ashes as filtering material. The balance, if any, is in favour of mill ashes. The rough, jagged form of both should form a good nidus for the äerobic bacteria.

There has been a considerable variation of late, in the method of filling the beds.

The time of filling varies from 25 minutes to upwards of 90 minutes, depending upon the capacity of the bed, and the rate of flow of sewage at the moment.

The time of contact for the first filling has varied between three and four hours ; for the second filling, four hours. This increased contact for the second filling is due to the fact that experiment has abundantly shewn that, with non-septic settling tanks, the afternoon and evening tank effluent possesses an appreciably higher oxygen absorption than that of the morning. During warm and dry weather, when there is little difference between the morning and afternoon tank effluent, a four hours' contact is given for the first filling.

Time of emptying, two hours.

Rest between fillings, at least six hours. During the major portion of this time, the exit valves are opened fully in order to assist in äeration.

Sampling is effected the same way as formerly, and each filter is separately tested once a week.

During the year ending December 31st, 1902, there flowed through the tanks 1,466,128,154 gallons, or an average daily flow of 4,016,789 gallons.

The total expenditure incurred was £2,541 19s. 4d., a decrease on the previous year of £34 12s. 11d.

The cost of treatment and purification per million gallons was £1 14s. 8d.

The number of W.C.'s connected to the sewers during the year was 151, making a total of 2,598.

The number of Waste W.C.'s connected to the sewers during the year was 3,260, making a total of 8,856.

The number of Trough Closets connected to the sewers during the year was 321, making a total of 983.

The weight of sludge pressed during the year is to be found in the table below. The pressed sludge, when in the form of good solid cake, may be taken as 50 per cent. solids. During July a fair quantity of liquid sludge was pumped direct from the settling tanks into the valley. It may be mentioned here that the pressed

sludge is of a variable character. Experience seems to prove that freshly deposited sludge, and the scum usually found on the surface of the tanks, present great difficulties to efficient and quick pressing. Indeed, in many cases of this sort there is little difference between the deposited sludge (about 90 per cent. water) and the resulting pressed sludge. Lubricating oil, and the coagulated fat thrown out by tripe establishments, also exercise a deterrent effect on good pressing. It may be of interest to note that the latter refuse is occasionally skimmed from the tanks, and that it fetches a good price in the market.

The quantities on the right side represent the weights of *quick* lime. This, when slaked, will approximately take up half its own weight of water. Therefore, to find the weight of pressed sludge alone, one and a half times the weight of the quick lime is deducted.

	Weight of Pressed Sludge containing Slaked Lime.		Weight of Quick Lime.		
	Tons.		Tons.	Cwt.	Qrs.
January	554½		20	4	0
February	377		15	11	3
March	456½		14	1	1
April	565		19	3	2
May	518		17	10	0
June	524		17	13	1
July	470½		11	12	0
August	370½		11	16	2
September	317		10	9	2
October	319½		13	19	3
November	415		31	18	3
December	368		39	13	3
	5255½		223	14	0
	335½		111	17	0
	4920		335	11	0

Weight of sludge and lime pressed during the year... $5255\frac{1}{2}$ tons

Weight of quick lime used for pressing during the year.. $223\frac{3}{4}$ tons

Net weight of 50 per cent. sludge pressed ..... 4920 tons

No. I. GROUP.

This group comprises Filters Nos. 1, 2, 3, 4, having an area of 5,300 square yards, a cubical capacity when completely empty of 4,515 cubic yards, representing about 758,500 gallons.

The working capacity of this group when last measured was approximately 139,000 gallons.

1	Filter was filled for the first time in		Sept., 1897.	Depth of Filter,		2ft. 9in.
2	,,	,,	Oct., 1897.	,,	,,	2ft. 9in.
3	,,	,,	Oct., 1897.	,,	,,	2ft. 3in.
4	,,	,,	Oct., 1897.	,,	,,	2ft. 6in.

Grains of Oxygen Absorbed per Gallon in Four Hours' Test.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov	Dec.	Avge per Year
Sewage	3·59	4·95	3·81	3·59	4·22	4·25	4·29	3·94	4·20	3·15	3·80	4·13	4·00
Tank Effluent	1·80	2·36	2·52	2·33	2·89	2·89	2·67	2·67	2·75	2·06	2·53	2·68	2·51
Filtrate	·50	·68	·82	·76	·88	1·04	·98	1·03	·725	·605	·64	·685	·78
Percentage of Purification from Tank Effluent to Filtrate	72	71	67½	67	70	64	63	62	73½	72	75	74½	69¼
Total Percentage of Purification from Sewage to Filtrate	86	86	78	79	79	76	77	74	83	81½	82½	83½	80½

The average amount of albuminoid ammonia present was ·179 grains per gallon.

55 estimations of the amount of nitrate present have been made, and the average amount found was ·55 grains per gallon estimated as NH_3.

330 samples were incubated, of which 291 remained good, 6 were doubtful, 33 became putrid.

The amount of rest and rate of working of this group are indicated in the "Rest Chart."

No. II. GROUP.

This group comprises Filters 5, 6, 7, having an area of 4,726 square yards, a cubical capacity when completely empty of 3,758 cubic yards, representing a volume of 631,000 gallons.

The working capacity of this group when last measured was approximately 122,000 gallons.

5 Filter was filled for the first time in March, 1898. Depth of Filter, 2ft. 3in.
6 ,, ,, ,, April, 1898. ,, ,, 2ft. 3in.
7 ,, ,, ,, May, 1898. ,, ,. 2ft. 3in.

Grains of Oxygen absorbed per Gallon in Four Hours' Test.

Month.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Avge. for Year
Sewage	3·59	4·95	3·81	3·59	4·22	4·25	4·29	3·94	4·20	3·15	3·80	4·13	4·00
Tank Effluent	1·80	2·36	2·52	2·33	2·89	2·67	2·67	2·75	2·06	2·53	2·68	2·51	2·51
Filtrate	·40	·515	·73	·65	·875	·93	·88	·91	·655	·56	·64	·605	·70
Percentage of Purification from Tank Effluent to Filtrate ...	77½	78½	71	72	70	68	68½	66	76	74	75	77½	73
Percentage of Purification from Sewage to Filtrate.....	89	89½	80½	82	79	78	79½	77	84½	82½	83	85	82½

The average amount of albuminoid ammonia present was ·175 grains per gallon.

59 estimations of the amount of nitrate present have been made, and the average amount found was ·51 grains per gallon, estimated as NH_3.

355 samples were incubated, of which 321 remained good, 8 were doubtful, and 26 became putrid.

The amount of rest and rate of working of this group are indicated in the "Rest Chart."

No. III. GROUP.

This group comprises Filters 8 and 9, having an area of 2,951 square yards, a cubical capacity when completely empty of 1,785 cubic yards, representing a volume of 299,900 gallons.

The working capacity of this group when last measured was approximately 57,000 gallons.

8 Filter was filled for the first time in June, 1898. Depth of Filter, 2ft. 6in.
9 ,, ,, ,, Aug., 1898. ,, ,, 1ft. 9in.

Grains of Oxygen Absorbed per Gallon in Four Hours' Test.

Month.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep	Oct.	Nov.	Dec.	Avge for Year
Sewage	3·59	4·95	3·81	3·59	4·22	4·25	4·29	3·94	4·20	3·15	3·80	4·13	4·00
Tank Effluent	1·80	2·36	2·52	2·33	2·89	2·89	2·67	2·67	2·75	2·06	2·53	2·66	2·51
Filtrate	·43	·47	·73	·61	·83	·94	·825	·82	·645	·565	·71	·605	·68
Percentage of Purification from Tank Effluent to Filtrate ...	76	80	71	74	71½	67½	70½	69	76½	73½	72	77½	73¼
Total Percentage of Purification from Sewage to Filtrate	88	90	81	83	80	78	80½	79	85	82	81	85	82⅔

The average amount of albuminoid ammonia present was ·173 grains per gallon.

54 estimations of the amount of nitrate present have been made, and the average amount found was ·49 grains per gallon estimated as NH_3.

348 samples were incubated, of which 300 remained good, 11 were doubtful, and 37 became putrid.

The amount of rest and rate of working of this group are indicated in the "Rest Chart."

No. IV. GROUP.

This group comprises Filters 10 and 11, having an area of 2,420 square yards, a cubical capacity when completely empty of 1,714 cubic yards, representing a volume of 288,000 gallons.

The working capacity of this group when last measured was approximately 65,000 gallons.

10 Filter was filled for the first time in Sep., 1898. Depth of Filter, 2ft. 3in.
11 ,, ,, ,, Nov., 1898. ,, ,, 2ft. 0in.

Grains of Oxygen absorbed per Gallon in Four Hours' Test.

Month.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Avge. per Year
Sewage	3·59	4·95	3·81	3·59	4·22	4·25	4·29	3·94	4·20	3·15	3·80	4·13	4·00
Tank Effluent	1·80	2·36	2·52	2·33	2·89	2·89	2·67	2·67	2·75	2·06	2·53	2·66	2·51
Filtrate	·435	·47	·755	·66	·84	1·00	·985	·84	·68	·61	·74	·695	·72
Percentage of Purification from Tank Effluent to Filtrate ...	76	80	72	71½	71	66⅓	63	69	75	71	71	74	71⅔
Percentage of Purification from Sewage to Filtrate	88	90½	80	81½	80	77	77	79	83½	81	80	83½	82

The average amount of albuminoid ammonia present was ·195 grains per gallon.

47 estimations of the amount of nitrate present have been made, and the average amount found was ·47 grains per gallon estimated as $N H_3$.

353 samples were incubated, of which 310 remained good, 14 were doubtful, and 29 became putrid.

The amount of rest, and rate of working of this group are indicated in the "Rest Chart."

No. V. GROUP.

This group comprises Filters No. 12, 13, 14, having an area of 4,259 square yards, a cubical capacity when completely empty of 4,249 cubic yards, representing a volume of 713,850 gallons.

The working capacity of this group when last measured was approximately 225,000 gallons.

12 Filter was filled for the first time in July, 1901. Depth of Filter, 3ft. 0in.
13 ,, ,, ,, Aug., 1900. ,, ,, 3ft. 0in.
14 ,, ,, ,, Oct., 1900. ,, ,, 3ft. 0in.

Grains of Oxygen Absorbed per Gallon in Four Hours' Test.

Month.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Avge. per Year
Sewage ...	...	...	..	...	...	4·25	4·29	3·94	4·20	3·15	3·80	4·13	3·96
Tank Effluent	...	...	...	...	...	2·89	2·67	2·67	2·75	2·06	2·53	2·68	2·61
Filtrate	...	...	...	...	...	1·06	·90	·71	·785	·735	·735	·635	·79
Percentage of Purification from Tank Effluent to Filtrate ...	...		...	...	...	65	67½	73	71	66½	70½	76½	70
Total Percentage of Purification from Sewage to Filtrate ...	...	...	...	...	...	75	79	82	81	78	81	85	80

The average amount of albuminoid ammonia present was ·184 grains per gallon.

46 estimations of the amount of nitrate present have been made, and the average amount found was ·42 grains per gallon, estimated as NH_3.

199 samples were incubated, of which 166 remained good, 7 were doubtful, and 26 became putrid.

The amount of rest, and rate of working of this group are indicated in the "Rest Chart."

No. VI. GROUP.

This group comprises Filters Nos. 15 and 16, having an area of 2,859 square yards, a cubical capacity when completely empty of 2,859 cubic yards, representing a volume of 480,300 gallons.

The working capacity of this group when last measured was approximately 170,000 gallons.

15 Filter was filled for the first time in Feb., 1901. Depth of Filter, 3ft. 0in.
16 ,, ,, ,, May, 1902. ,, ,, 3ft. 0in.

Grains of Oxygen absorbed per Gallon in Four Hours' Test.

Month.	Jan.	Feb	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Avge. per Year
Sewage	...	...	...	...	...	4·14	4·29	3·94	4·20	3·15	3·80	4·13	3·95
Tank Effluent	...	...	...	...	...	2·96	2·67	2·67	2·75	2·06	2·53	2·68	2·62
Filtrate	...	...	...	...	...	1·35	1·08	·93	·865	·85	·66	·545	·89
Percentage of Purification from Tank Effluent to Filtrate ...	...	...	...	...	...	54⅓	59½	65	68½	60	74	79½	66
Percentage of Purification from Sewage to Filtrate.....	...	...	...	...	...	67½	75	76½	79½	73½	83	86½	78¾

The average amount of albuminoid ammonia present was ·229 grains per gallon.

18 estimations of the amount of nitrate present have been made, and the average amount found was ·56 grains per gallon, estimated as $N H_3$.

152 samples were incubated, of which 112 remained good, 6 were doubtful, and 34 became putrid.

The amount of rest, and rate of working of this group are indicated in the "Rest Chart."

No. VII. GROUP.

This group comprises Filters No. 17 and 18, having an area of 2,524 square yards, a cubical capacity when completely empty of 2,524 cubic yards, representing a volume of 424,050 gallons.

The working capacity of this group when last measured was approximately 154,000 gallons.

17 Filter was filled for the first time in July, 1902. Depth of Filter, 3ft. 0in.
18 ,, ,, ,, Sep., 1901. ,, ,, 3ft. 0in.

Grains of Oxygen absorbed per Gallon in Four Hours' Test.

Month.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Avge. per Year
Sewage	...	...	.	...	...	4·14	4·29	3·94	4·20	3·15	3·80	4·13	3·95
Tank Effluent	..		..	...	...	2·96	2·67	2·67	2·75	2·06	2·53	2·68	2·62
Filtrate	...	...	...	...	...	1·43	1·07	1·045	·99	·775	·86	·69	·98
Percentage of Purification from Tank Effluent to Filtrate ...	...	.	...	..	...	51⅓	59⅓	61	64	64½	66	74	63
Total Percentage of Purification from Sewage to Filtrate	...	...	..	..	..	65½	75	73½	76½	76½	76	83½	75¼

The average amount of albuminoid ammonia present was ·224 grains per gallon.

16 estimations of the amount of nitrate present have been made, and the average amount found was ·39 grains per gallon, estimated as NH_3.

162 samples were incubated, of which 120 remained good, 10 were doubtful, and 32 became putrid.

The amount of rest, and rate of working this group are indicated in the "Rest Chart."

No. VIII. GROUP.

This group comprises as yet, Filters 19, 20, 21; having an area of 4,516 square yards; a cubical capacity when completely empty of 4,516 cubic yards; representing a volume of 758,700 gallons.

The working capacity of this group when last measured was, approximately, 300,000 gallons.

19 Filter was filled for the first time on May 28th, 1902. Depth of Filter, 3ft. 0in.
20 ,, ,, ,, Dec. 1st, 1902. ,, ,, 3ft. 0in.
21 ,, ,, ,, Oct. 20th, 1902. ,, ,, 3ft. 0in.

20 Filter was not working during the greater part of December on account of serious leakage.

Grains of Oxygen Absorbed per Gallon in Four Hours' Test.

Month.	Jan.	Feb.	Mar.	April	May	June	July	Aug	Sep.	Oct.	Nov.	Dec.	Avge. of Year.
Sewage	...	...	...	...	...	...	4·29	3·94	4·69	2·13	3·80	4·13	3·83
Tank Effluent	...	...	...	...	...	...	2·67	2·67	3·07	1·66	2·53	2·68	2·55
Filtrate	...	...	...	...	...	...	1·69	1·18	1·90	·43	·86	·70	1·12
Percentage of Purification from Tank Effluent to Filtrate ...	...	...	...	...	...	...	36⅓	56	38	74	66	74	57⅓
Percentage of Purification from Sewage to Filtrate.....	...	...	...	...	...	...	60⅔	70	59½	80	77	83	71⅔

The average amount of albuminoid ammonia present was ·219 grains per gallon.

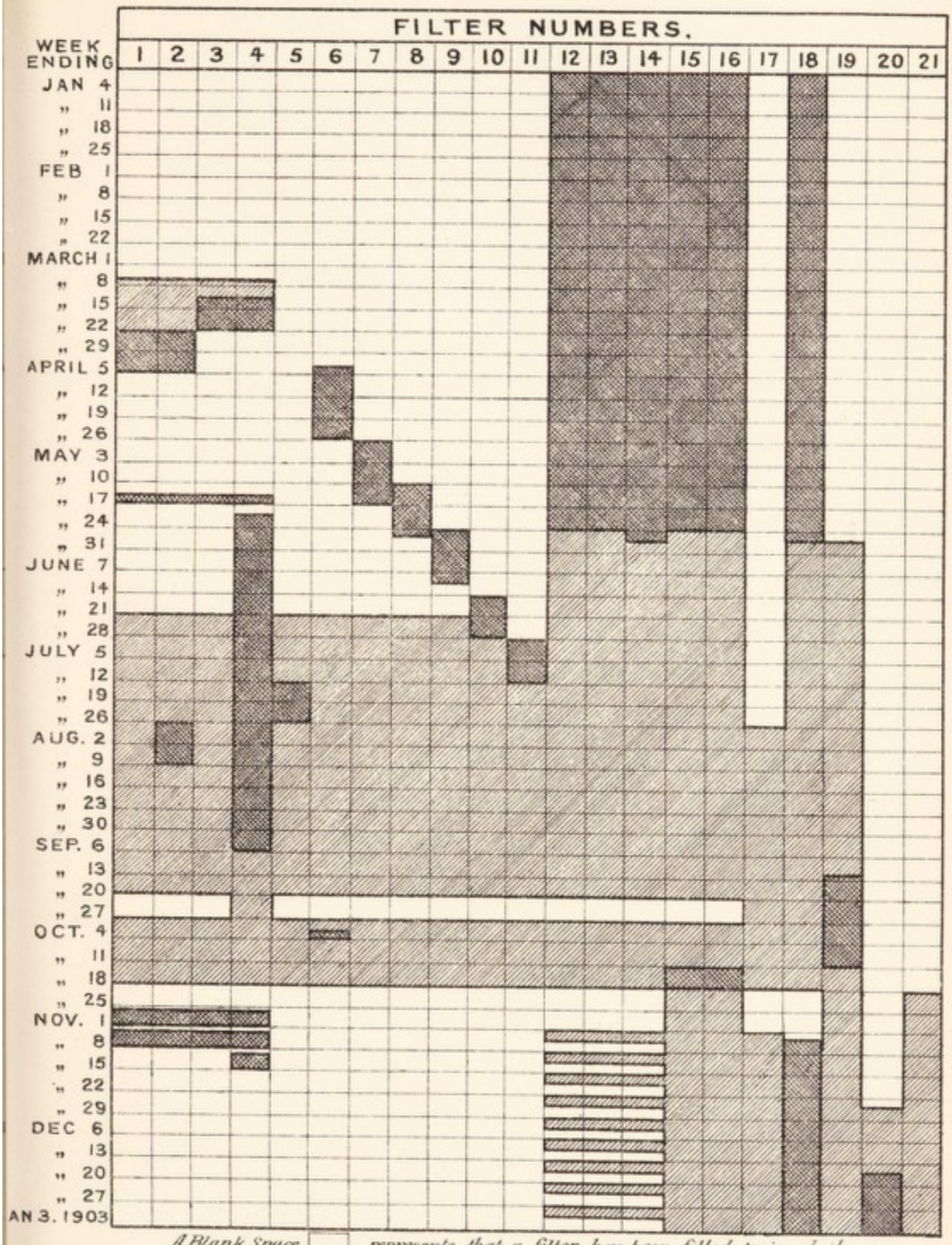
Twenty-two estimations of the amount of nitrate present have been made, and the average amount found was ·39 grains per gallon, estimated as NH_3.

113 samples were incubated, of which 107 remained good, 4 were doubtful, and 2 became putrid.

The amount of rest and rate of working of this group are indicated in the "Rest Chart."

CHART

Shewing the amount of rest and rate of working of each Filter DURING THE YEAR 1902.



A Blank Space ☐ *represents that a filter has been filled twice daily.*

A Space marked ▨ " " " " " " " " *once* " "

A Space marked ▩ " " " " *has rested entirely.*

Filters 1, 2, 3, 4, were stopped from Oct 28th to Nov 8th, owing to leakage and subsequent alterations in the main drain carrying away the effluent from these beds.

Filters 19 and 20 were stopped during certain periods of the latter half of the year owing to serious leakages from these beds when full.

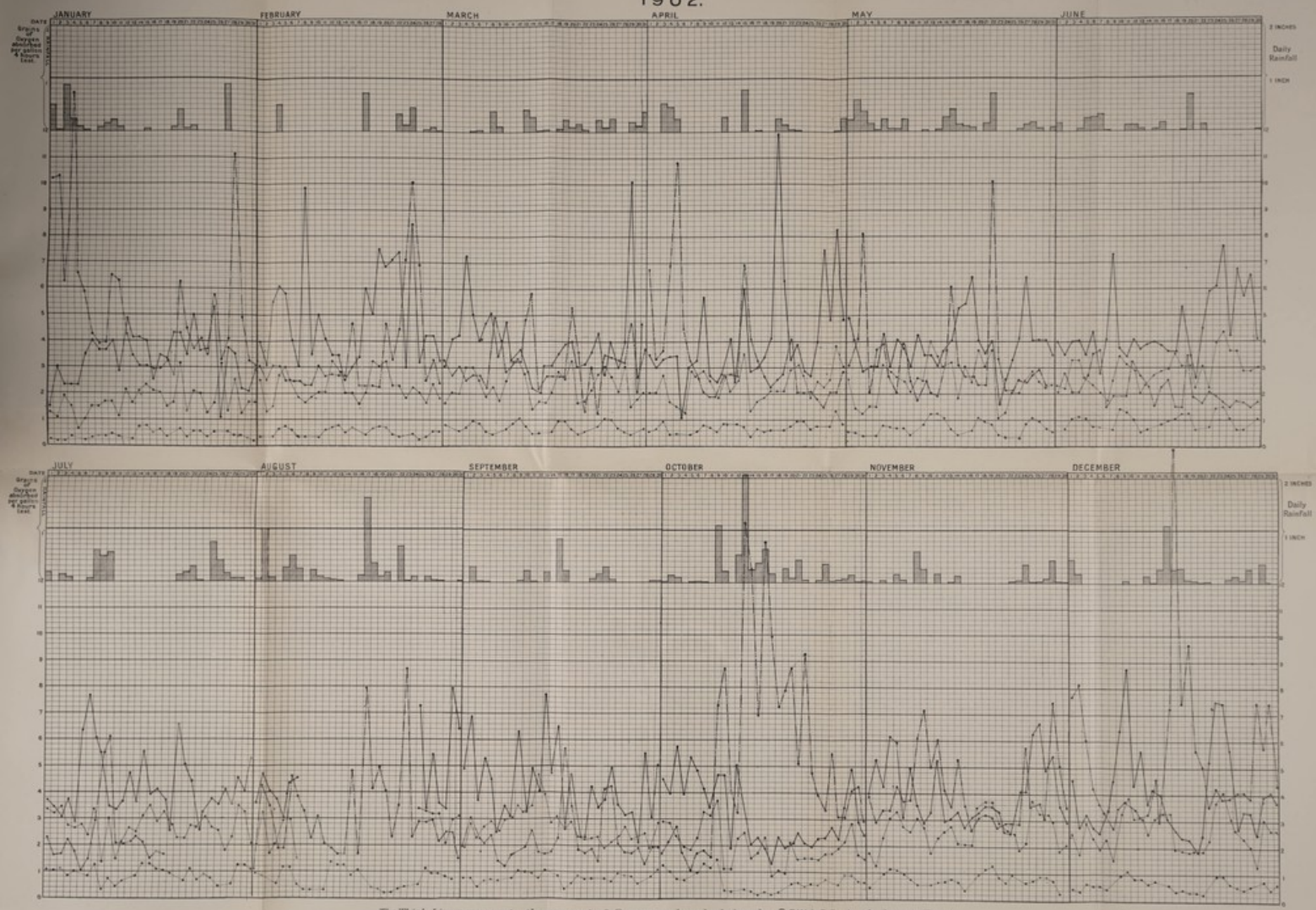
Filters 12, 13, 14, 15, 16 and 18 were stopped from Nov 4th 1901, to May 24th, 1902, owing to alterations and repairs being made.

Filter 16 is filled for the first time on May 26th.
" 17 " " " " " " " July 28th.
" 19 " " " " " " " May 28th.
" 20 " " " " " " " Nov 26th.
" 21 " " " " " " " Oct 20th.

OLDHAM CORPORATION SEWAGE WORKS.

RESULTS OF DAILY ANALYSIS OF SEWAGE, TANK EFFLUENT AND FILTRATE.

1902.



The Thick Line represents the amount of Oxygen absorbed by the SEWAGE *in 4 hours Test.*
The Thin . . . . . TANK EFFLUENT . . . .
The Dotted . . . . . FILTRATE . . . .
The Daily Flow is represented by ———

LIMIT OF IMPURITY ALLOWED BY MERSEY AND IRWELL JOINT COMMITTEE
1 GRAIN PER GALLON IN 4 HOURS TEST.