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County Borough of Oldham.

REPORT

ON THE

HEALTH OF OLDHAM

FOR THE YEAR 1900,

BY

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Medical Officer of Health,

Medical Superintendent of Westhulme and Strinesdale Hospitals,

President and Examiner to the Institute of

Sanitary Engineers.

OLDHAM :

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

**MEMBERS OF THE SANITARY COMMITTEE,
1900.**

Mr. Councillor G. Hanson, Chairman.

Mr. Alderman Simister, Vice-Chairman.

The Mayor.	Mr. Councillor Grime.
Mr. Alderman Waddington.	„ „ Doran.
„ Councillor Gartside.	„ „ Schofield.

Mr. Councillor Twyerould.

HOSPITALS SUB-COMMITTEE.

The Chairman.	Mr. Alderman Waddington.
The Vice-Chairman.	„ Councillor Doran.

Mr. Councillor Schofield.

INSANITARY DWELLINGS SUB-COMMITTEE.

The Chairman.	Mr. Councillor Gartside.
The Vice-Chairman.	„ „ Grime.
Mr. Alderman Waddington.	„ „ Twyerould.

To the Chairman and Members of the
Health Committee.

GENTLEMEN,

I have the honour to submit for your consideration and approval my Annual Report on the Health and Sanitary Condition of the Borough of Oldham during the year 1900.

The order observed in the Report is the same as in previous years; Part I. deals with the Vital Conditions and Meteorology; Part II. contains particulars of the prevalence, distribution and the measures adopted for the prevention of Infectious Disease, and Part III is devoted to a Summary of the Work of the Health Department during the year.

The Appendix gives an account of the method adopted and the results obtained in the Treatment of the Sewage at Slack's Valley.

Few years in the past will show as much work carried out under the control of the Health Committee as the year 1900: The Promotion of a Parliamentary Bill, the greater part of the clauses of which relate to health matters; the erection of two new Destructors, and the completion of the Observatory are matters which will especially mark the past year in the Sanitary History of Oldham.

The Death Rate and Birth Rate have both decreased this year.

The prevalence of Scarlet Fever which existed in the latter months of 1899 continued throughout a greater part of the year. Though the cases have been numerous, the fatalities from this disease have been comparatively few. We now consider two or three deaths from Scarlet Fever in a week a large number; just over 25 years ago, when the first Medical Officer of Health was appointed, the deaths from the same disease numbered for several weeks from 20 to 30 per week.

One can hardly compile a report on the closing year of the century without reference to the remarkable advance which has taken place during its latter years in Sanitary Science, and comparing the conditions which existed in the town previous to the appointment of Health Officials, and the formation of a Health Committee, and those which exist to-day.

Allow me to tender you my sincere thanks for the support and assistance you have invariably rendered me during the year. I must also record my appreciation of the willing manner in which all the members of the staff, whether at the Hospital or in the Health Department, have carried out any instructions I may have given.

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, upon which the following statistics are based, is the estimate of the Registrar General. The method adopted for obtaining this estimate is based upon the supposition that the population has increased each year of the 1891-1900 decade at the same rate as it increased during the 1881-1890 decade; and this method is also used for obtaining the population of the several Wards of the Borough. Generally speaking, this method is as accurate as any method which could be adopted, and is practically the only means which could be used by a central authority, and, if a census could be taken every five years instead of every ten, would not be very erroneous. In the latter years of a decennial period, however, the Vital Statistics of many towns are almost valueless, and as I have pointed out in previous reports, the population of this town is probably considerably over-estimated. This conclusion is arrived at from the consideration of the natural increase of the Borough, and also from the number of new houses erected since 1891. From the Registrar General's estimate the population in the middle of the year 1900 would be 153,297.

In Table No. 6, the estimated populations of the various Wards are given, but when the census (1901) figures are obtainable, these will be found to show greater variance from the correct figures than the population of the whole town, as some Wards have been almost at a standstill during the ten years, while others have increased very considerably.

At the time of going to press the preliminary report of the Registrar General has just been issued, and the population of Oldham, as enumerated by the census, is given as 137,238. These figures would make the population for 1900 about 136,800, or 16,492 less than that estimated by the usual method. This result, if correct, shows a very much smaller increase in the population than was expected, giving only an increase for the ten years of 5,775. The figures available at present are as follows :—

	Inhabited Houses.		Increase.	Population.		Increase.
	1891.	1901.		1891.	1900.	
Oldham	27,485	29,907	2,422	131,463	137,238	5,775
Oldham-below-Town	15,797	16,898	1,101	76,329	78,953	2,624
Oldham-above-Town	11,688	13,009	1,321	55,134	58,285	3,151

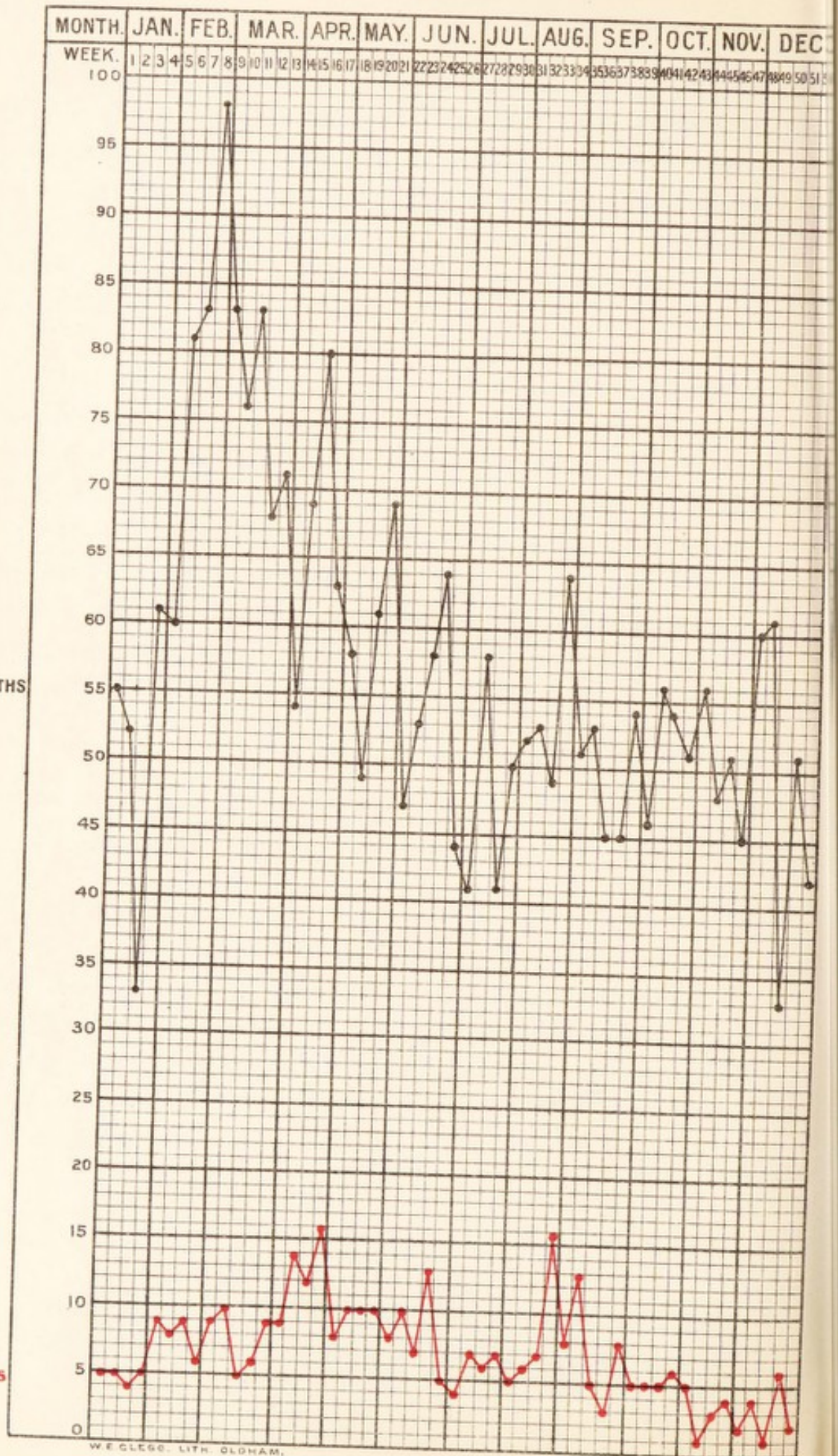
What the result will be when the correct population is allotted to the various Wards it is impossible to estimate. The results of the census are this time to be issued by counties, and the counties are "to be taken up in order, having due regard to their relative industrial importance," so that the statistics of Lancashire ought to be among the earliest obtainable.

BIRTHS.

During the year 1900 there were 3,691 births registered in the Borough. This number is 41 less than in the pre



BOROUGH OF OLDHAM.



TOTAL DEATHS
1900.

ZYMOTIC DEATHS
1900.

vious year, and is the lowest number recorded since the year 1876. Of these births 1,848 were males and 1,843 females. The illegitimate births during the year numbered 149, or 4 per cent. of the total number of births. In 1899 these births numbered 152.

DEATHS.

The total number of deaths during the year was 3,000, of which 1,514 were males, and 1,843 females. These figures give a death rate on the estimated population of 19·6, against 20·5 the previous year. The natural increase in the population of the Borough, or the increase of births over deaths, during the year is 691, compared with 654 in 1899.

In comparison with other towns the death rate of Oldham is slightly higher than the average for the 33 large towns, which is 19·5, and stands twenty-first on the list. Compared with the other Lancashire large towns Oldham takes the third place, the order and rate being—Burnley 16·3, Bolton 19·5, Oldham 19·6, Blackburn 20·5, Preston 24·0, Manchester 24·1, Salford, 25·1, and Liverpool 25·7.

Respecting the principal causes of death, pneumonia shows a considerable decrease this year, though both influenza and bronchitis claim a somewhat higher number. The deaths due to measles, whooping cough, and cancer also have increased slightly.

Enteritis and diarrhoea have considerably fewer deaths ascribed to them than in the previous year. The period of highest mortality was the latter part of February and the first three weeks in March, when influenza was prevalent in

the town. In the week ending February 24th no less than 95 deaths were registered, corresponding to a death rate of 33 per 1,000; this increased number being chiefly due to acute lung diseases.

The increase in the zymotic death rate in April was largely due to measles, but also to scarlet fever, and that at the end of August to diarrhoea.

PHTHISIS.

During the year 1900, 255 deaths have been registered as due to this disease, and 57 deaths from other forms of tuberculosis, such as tabes mesenterica, tubercular meningitis, and scrofula. The deaths from phthisis under 5 years of age numbered 10, or about 4 per cent. of the total. Those from the "other forms" numbered 34, or nearly 60 per cent. of the whole number. It will be thus seen that the disease which is caused by the bacillus tuberculosis claims a very large number of victims, and the best means for the prevention of this disease, without causing excessive hardship to those afflicted, are still under discussion. Besides the usual methods of disinfection, a distinct advance in limiting one source of this disease has been taken during the year. As a Parliamentary Bill was being prepared early in the year, I suggested the inclusion of various clauses which were directed towards the prevention of the sale of tuberculosis milk in the Borough, not only by dairy-men in the town, but also by farmers, &c., in other districts. These clauses were approved by the Health Committee, inserted in the Bill, and (the Bill being passed) came into force on January 1st, 1901.

The clauses will be found under another heading in Part III. Though I prefer to defer the consideration of the distribution of the disease in the various Wards until correct populations are obtainable, it is worthy of notice that the two Wards having the greatest density of population have also the greatest death rate from phthisis.

INFANTILE MORTALITY.

The deaths of children under 1 year of age in 1900 number 637. This is equal to a rate of 172 deaths for every 1,000 births.

In the previous year the number was 739, and the rate 198. The diminution in this class of death is due chiefly to Diarrhœa and Convulsions, from which diseases fewer deaths have been recorded.

Compared with the other 33 large towns, Oldham comes fifteenth, and with other Lancashire large towns second, the several rates being: Bolton, 171; Oldham, 172; Liverpool, 186; Manchester, 189; Burnley, 205; Salford, 207; Blackburn, 220; and Preston, 236.

The principal causes of deaths in infants have been Bronchitis and Pneumonia, Premature Birth and Atrophy, Convulsions and Diarrhœa, Whooping Cough, and Measles.

The Wards in which the infantile mortality has been the heaviest are Coldhurst and Hartford; and Werneth, St. Peter's, and Hollinwood have the lowest rates.

DIARRHŒA.

The fatal cases from this disease have been much fewer during 1900 than in the previous year. In all, 76 deaths were registered as due to this disease, and of these 65 were under the age of five and 46 under the age of one. This diminution may be probably accounted for by the climatic conditions. In 1899 the temperature of the 4 feet thermometer remained above 56° F. for seven weeks, and in 1900 it only remained above this figure about three weeks; and we generally find that Diarrhœa is not prevalent until the temperature at this depth of the soil gets above 56 56 degrees.

We again find from enquiries that where Diarrhœa is the cause of death in infants; feeding by the bottle or other artificial food has been adopted in a very large proportion of cases.

The Wards in which this disease has been most prevalent are Westwood, St. Mary's, Mumps and Hartford; those in which it has been least prevalent are Werneth, St. Peter's, and St. Paul's.

INQUESTS.

I am indebted to the Coroner (Dr. G. Thomson) for his kindness in supplying the particulars for Table 14. During the year 180 inquests have been held, and of this number 93 deaths have been returned as due to natural causes; 54 to accidental causes and 13 to suicide.

METEOROLOGICAL REPORT.

During the year 1900 the new observatory in the Alexandra Park has been completed, the instruments placed in position, and the records are again able to be kept in a complete form. These records are marked on two charts—one on the door of the observatory, and the other in the entrance of the Central Free Library.

The building is surmounted by a full-sized Kew anemometer, and wind vane, and beneath the cap are four dials, the north and south ones showing a clock face. The one on the west is connected with an aneroid barometer, and that on the east indicates the wind pressure. In the interior of the building are a barometer, shade thermometers, hygrometer, &c.

JANUARY.—The mean barometric pressure was 29·95, and the mean temperature 39. The minimum temperature recorded on the grass was 24 degrees, and the maximum in the sun was 49 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 41 to 40 degrees. Rain fell on 23 days, the total rainfall amounting to 5·53 inches. South-easterly winds prevailed.

FEBRUARY.—The mean barometric pressure was 29·71, and the mean temperature 35. The minimum temperature recorded on the grass was 9 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 13 days out of 35, the total rainfall for the month amounting to 5·06 inches.

MARCH.—The mean barometric pressure was 30·10 inches, and the mean temperature 38 degrees. The mini-

imum temperature on the grass was 17 degrees, and the maximum in the sun 64 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 39 to 40 degrees. Rain fell on 6 days, the total rainfall being 0·84 inches.

APRIL.—The mean barometric pressure was 30·04 inches, and the mean temperature 46 degrees. The minimum temperature on the grass was 24 degrees, and the maximum temperature in the sun was 75 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 39 to 44 degrees. Rain fell on 17 days, the total rainfall amounting to 2·95 inches.

MAY.—The mean barometric pressure was 30·05 inches, and the mean temperature 50 degrees. The minimum temperature recorded on the grass was 30 degrees, and the maximum in the sun 71 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 44 to 48 degrees. Rain fell on 14 days out of 35, the total rainfall amounting to 2·07 inches.

JUNE.—The mean barometric pressure was 29·97 inches, and the mean temperature 60 degrees. The minimum temperature recorded on the grass was 39 degrees, and the maximum in the sun 85 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 48 to 53 degrees. Rain fell on 17 days, the total rainfall amounting to 4·83 inches. Heavy thunderstorm in afternoon and evening of the 11th.

JULY.—The mean barometer pressure was 30·08 inches, and the mean temperature 65 degrees. The minimum temperature recorded on the grass was 39 degrees, and the maximum in the sun 87 degrees. The temperature

recorded by the thermometer 4 feet below the surface ranged from 53 to 57 degrees. Rain fell on 13 days, the total rainfall amounting to 2.84 inches.

AUGUST.—The mean barometric pressure was 30.03 inches, and the mean temperature 60 degrees. The minimum temperature recorded on the grass was 39 degrees, and the maximum in the sun 81 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 57 to 55 degrees. Rain fell on 19 days out of 35, the total rainfall amounting to 7.94 inches. Heavy thunderstorm on the night of the 6th.

SEPTEMBER.—The mean barometric pressure was 30.19 inches, and the mean temperature 57 degrees. The minimum temperature recorded on the grass was 32 degrees, and the maximum in the sun 83 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 55 to 54 degrees. Rain fell on 12 days, and the total rainfall amounted to 1.66 inches.

OCTOBER.—The mean barometric pressure was 29.99 inches, and the mean temperature 49 degrees. The minimum temperature recorded on the grass was 25 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 54 to 50 degrees. Rain fell on 21 days, and the total rainfall amounted to 3.97 inches.

NOVEMBER.—The mean barometric pressure was 29.83 inches, and the mean temperature 44 degrees. The minimum temperature recorded on the grass was 26 degrees. The temperature recorded by the thermometer 4

feet below the surface ranged from 50 to 46 degrees. Rain fell on 27 days out of 35, and the total rainfall amounted to 5.95 inches.

DECEMBER.—The mean temperature was 44 degrees. The minimum temperature on the grass was 24 degrees, and the maximum in the sun 58 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 46 to 45 degrees. Rain fell on 20 days, and the total rainfall amounted to 4.80 inches.



VITAL STATISTICS, 1900.

SUMMARY.

Population estimated by the Registrar General to the middle of the year	153,297
Births registered in the 52 weeks ending December 29th, 1900 ... Males ... 1,848 } Females ... 1,843 }	3,691
Deaths registered in the 52 weeks ending December 29th, 1900 ... Males ... 1,514 } Females ... 1,486 }	3,000
Deaths from the seven principal Zymotic diseases...	367
Deaths under 1 per 1,000 Births	172
Annual Rate of Births per 1,000 living population.	24.1
Annual Rate of Mortality from all causes per 1,000 living population	19.6
Annual Rate of Mortality per 1,000 living popula- tion from the seven principal Zymotic diseases.	2.4

Of the 3,000 deaths registered during the year 1900, 1,092, or 36.4 per cent., were those of children under 5 years of age.

PRINCIPAL CAUSES OF DEATHS.

Bronchitis 385	Cancer 105
Pneumonia 313	Convulsions 67
Phthisis 255	Inflammation of Brain 80
Heart Disease... .. 251	Diarrhoea... .. 76
Measles 108	Premature Birth ... 65
Apoplexy... .. 133	Whooping Cough ... 89
Debility 98	Influenza 55

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

TABLE No. 2.

DEATHS UNDER 1 YEAR FROM VARIOUS CAUSES.

Ages	Premature Births	Congenital Malformation	Atrophy, Inanition, and Debility	Diarrhoea	Other Zymotics	Convulsions	Dentition	Tubercular Diseases	Pneumonia and Bronchitis	Other Causes	Totals
Under 1 mon.	59	12	35	2	...	18	...	...	5	39	170
1-2 months	7	2	11	7	1	4	...	6	14	6	58
2-3 "	...	1	11	7	3	4	...	3	15	11	55
3-4 "	3	1	5	8	2	3	...	4	19	13	58
4-5 "	...	...	6	5	4	5	...	3	10	10	43
5-6 "	1	...	2	5	9	1	...	...	18	8	44
6-7 "	...	...	1	...	2	2	1	6	13	6	31
7-8 "	...	...	...	2	5	2	1	2	8	7	27
8-9 "	...	...	1	3	9	3	1	1	16	4	38
9-10 "	...	...	1	2	5	1	4	1	16	7	37
10-11 "	...	...	...	1	8	2	2	5	13	7	38
11-12 "	...	...	3	4	10	1	...	2	14	3	37
Totals	70	16	76	46	58	46	9	33	161	121	636

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 Domestic Servant	Other Occupation.	Housework.
Zymotic Diseases ...	23	23	1	11	...	4	..	1	53
Diarrhœa	14	25	...	7	...	7	1	5	33
Convulsions and Dentition	21	24	1	3	6	6	2	3	44
Congenital Malformation	7	4	2	2	1	1	...	3	12
Inanition, Debility, or Atrophy	27	34	2	6	7	9	3	6	58
Premature Birth	17	14	5	...	34	4	1	3	62
Tubercular Diseases	12	14	...	7	...	4	1	2	26
Bronchitis and Pneumonia	65	75	1	20	...	19	1	4	137
All other Diseases ...	54	40	5	13	9	3	3	4	111
TOTALS	240	253	17	69	57	57	12	31	536

TABLE No. 4.
 INFANTILE MORTALITY IN THE 33 LARGE TOWNS
 PER 1000 BIRTHS.

	1900.	Ten Years, 1890-1899.
33 Towns	172	172
London	160	160
West Ham	189	164
Croydon	132	137
Brighton	166	156
Portsmouth	155	158
Plymouth	175	172
Bristol	133	149
Cardiff	141	164
Swansea	175	165
Wolverhampton	206	191
Birmingham	199	186
Norwich	178	180
Leicester	175	197
Nottingham	196	179
Derby	174	156
Birkenhead	160	171
Liverpool	186	192
Bolton	171	180
Manchester	189	190
Salford	207	203
OLDHAM	172	183
Burnley	205	212
Blackburn	220	201
Preston	236	236
Huddersfield	132	156
Halifax	132	158
Bradford	141	174
Leeds	183	178
Sheffield	200	184
Hull	183	176
Sunderland	169	175
Gateshead	169	173
Newcastle	170	174

TABLE No. 5.

SHOWING BIRTH, DEATH, AND ZYMOTIC DEATH RATES
in 33 Large Towns during the year 1900.

CITIES AND BOROUGHES.	Estimated Population.	Birth Rates.	Death Rates.	Zymotic Death Rates.
33 Towns	11,610,296	29·4	19·5	2·50
London	4,589,129	28·6	18·8	2·22
West Ham	314,472	28·6	15·9	3·10
Croydon	131,186	24·9	14·6	1·44
Brighton	124,148	23·6	17·8	2·24
Portsmouth	194,955	25·7	17·3	2·38
Plymouth	102,161	27·9	29·8	2·35
Bristol	324,973	27·8	16·7	1·88
Cardiff	194,247	26·8	13·8	2·08
Swansea	105,472	26·7	17·1	2·17
Wolverhampton	89,598	33·5	22·5	3·65
Birmingham... ..	519,610	32·7	21·5	2·72
Norwich	114,855	28·4	17·6	2·08
Leicester	219,169	28·2	17·4	3·54
Nottingham... ..	242,676	27·7	19·1	2·35
Derby	107,991	26·9	17·5	2·30
Birkenhead	117,170	29·0	16·8	1·39
Liverpool	634,780	36·0	25·7	3·18
Bolton	164,240	29·0	19·5	2·42
Manchester	548,768	32·3	24·1	3·05
Salford	220,816	33·1	25·1	3·98
OLDHAM	153,297	24·1	19·6	2·44
Burnley... ..	116,730	25·3	16·3	2·53
Blackburn	137,107	25·1	20·5	3·52
Preston	118,962	29·0	24·0	4·37
Huddersfield	104,484	22·8	16·8	1·52
Halifax	100,710	23·0	18·1	1·32
Bradford	291,535	23·1	16·4	1·36
Leeds	431,287	30·4	20·0	2·92
Sheffield	365,922	34·1	22·6	4·33
Hull	238,736	32·9	19·7	3·10
Sunderland	147,398	35·8	21·4	2·52
Gateshead	109,403	36·3	19·0	1·75
Newcastle	234,369	30·4	19·5	1·38

TABLE No. 6.—Showing Population, Births and Birth Rates, Deaths and Death Rates.—1900.

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	12,178	113	107.8	209	183	392	32.2	126	136	262	21.5
St. Peter's	13,855	271	51.1	159	134	293	22.7	106	123	229	16.5
Werneth	13,949	262	53.2	165	165	330	23.7	129	99	228	16.3
Westwood	13,522	280	48.3	166	168	334	24.7	146	120	266	19.7
St. Paul's	11,988	457	26.2	179	166	345	28.8	121	122	243	20.3
Coldhurst	12,294	130	94.6	151	138	289	23.5	162	152	314	25.5
Hartford	14,507	207	70.1	115	115	230	15.9	133	153	286	19.7
Hollinwood.....	9,084	420	21.6	121	165	286	31.5	92	99	191	21.0
Clarksfield	14,280	623	22.9	178	179	357	25.0	152	139	291	20.4
Mumps	10,477	125	83.8	104	118	222	21.2	116	94	210	20.0
St. James'	12,088	1,015	11.9	132	140	272	22.5	106	103	209	17.3
Waterhead	15,075	826	18.2	169	172	341	22.6	125	146	271	18.0
Total.....	153,297	4,729	32.4	1,848	1,843	3,691	24.1	1,514	1,486	3,000	19.6

TABLE No. 7.

Estimated Population, also Deaths at all Ages, and at 5 Groups of Ages

Groups of Ages.	POPULATION.		Deaths, 1900.	Death rates per 1000 living Popu- lation, 1900.
	Census, 1891	Estimated, 1900.		
All Ages	131,463	153,297	3,000	19·6
Under 5 Years ...	15,466	17,119	1,092	63·8
5 to 15 ,, ...	29,281	34,224	145	4·2
15 to 25 ,, ...	26,406	30,948	153	4·9
25 to 65 ,, ...	56,598	66,542	1,123	16·9
65 Years and upwards.	3,712	4,464	487	109·1
MALES				
All Ages	62,862	72,975	1,514	20·7
Under 5 Years ...	7,507	8,197	553	67·5
5 to 15 ,, ...	14,349	16,750	70	4·2
15 to 25 ,, ...	12,551	14,731	71	4·8
25 to 65 ,, ...	26,890	31,437	612	19·5
65 years and upwards..	1,565	1,860	208	111·8
FEMALES				
All Ages	68,601	80,322	1,486	18·5
Under 5 Years ...	7,959	8,922	539	60·4
5 to 15 ,, ...	14,932	17,474	75	4·3
15 to 25 ,, ...	13,855	16,217	82	5·1
25 to 65 ,, ...	29,708	35,105	511	14·6
65 Years and upwards.	2,147	2,604	279	107·1

TABLE No. 8.

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

1900.

Ward.	All causes	Seven Principal Zymotic Diseases	Phthisis	Bronchitis	Pneumonia	Deaths under 1 year to 1000 births
St. Mary's	21.5	4.1	2.5	3.8	1.6	173
St. Peter's	16.5	1.0	1.2	1.9	1.6	133
Werneth	16.3	1.1	0.9	1.6	1.9	109
Westwood	19.7	2.9	1.2	2.9	1.8	198
St. Paul's	20.3	4.2	1.3	2.8	3.0	191
Coldhurst	25.5	2.9	3.5	3.0	2.4	214
Hartford	19.7	2.7	1.8	2.0	1.9	213
Hollinwood	21.0	2.4	1.9	1.8	2.6	140
Clarksfield	20.4	2.2	1.7	2.0	2.2	179
Mumps	20.0	2.4	1.0	2.6	2.3	171
St. James'	17.3	1.6	1.2	2.8	1.3	151
Waterhead	18.0	1.7	1.7	3.2	2.1	199

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	141,079	3873	3092	737	
1896	143,442	3969	2953	726	
1897	145,845	3793	2786	696	
1898	148,288	3749	2598	654	
1899	150,772	3732	3078	739	
Averages of Years 1895 to 1899. }		145,885	3823	2901	710
1900	153,297	3691	3000	637	

NAMES OF LOCALITIES.	St. Mary's.				St. Peter's.				Werneth.				
	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	11,207	335	297	85	12,750	287	269	59	12,836	298	215	41	
1896	11,395	350	300	82	12,964	282	209	44	13,051	318	187	39	
1897	11,586	347	238	48	13,181	290	209	57	13,270	321	205	48	
1898	11,780	355	240	69	13,402	289	197	44	13,493	350	195	44	
1899	11,977	373	249	68	13,627	297	228	43	13,719	342	220	50	
Averages of Years 1895 to 1899. }		11,589	352	265	70	13,185	289	222	49	13,274	326	204	44
1900	12,178	392	262	68	13,855	293	229	39	13,949	330	228	36	

NAMES OF LOCALITIES.	Westwood.				St. Paul's.				Coldhurst.				
	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	12,443	373	259	65	11,034	285	254	72	11,314	332	301	82	
1896	12,652	371	268	68	11,218	325	238	83	11,504	328	276	61	
1897	12,864	346	251	70	11,406	305	236	71	11,697	310	250	59	
1898	13,080	324	238	77	11,597	317	208	53	11,893	298	249	63	
1899	13,299	324	309	70	11,791	325	242	71	12,092	280	297	63	
Averages of Years 1895 to 1899. }		12,868	348	265	70	11,409	311	236	70	11,700	310	275	66
1900	13,522	334	266	66	11,988	345	243	66	12,294	289	314	62	

TABLE No. 9—Continued.

NAMES OF LOCALITIES.	Hartford.				Hoilnwood.				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	13,350	366	300	70	8,360	314	166	43	13,145	365	241	53
1896	13,574	349	274	61	8,500	297	149	42	13,364	409	264	65
1897	13,802	323	288	61	8,642	308	147	45	13,588	370	234	59
1898	14,033	283	254	51	8,787	280	145	26	13,814	397	231	69
1899	14,268	269	263	70	8,934	300	201	54	14,045	369	276	61
Averages of Years 1895 to 1899. }	13,805	318	276	63	8,645	300	162	42	13,591	382	249	61
1900	14,507	230	286	49	9,084	280	191	40	14,280	357	291	64
	Mumps.				St. James's.				Waterhead.			
1895	9,642	224	215	40	11,125	308	243	60	13,873	386	332	67
1896	9,803	240	227	53	11,311	308	232	54	14,106	392	329	74
1897	9,967	247	210	55	11,500	255	220	52	14,342	371	298	71
1898	10,134	220	211	51	11,693	281	193	40	14,582	355	237	67
1899	10,304	209	248	52	11,889	309	235	67	14,827	335	310	70
Averages of Years 1895 to 1899. }	9,970	228	222	50	11,504	292	225	55	14,346	368	301	70
1900	10,477	222	210	38	12,088	272	209	41	15,075	341	271	68

TABLE No. 9A.—FOR WHOLE DISTRICT.

YEAR.	Population estimated to middle of each Year.	BIRTHS.		DEATHS UNDER ONE YEAR OF AGE.			DEATHS AT ALL AGES. TOTAL.		Deaths in Public Institutions.	Deaths of Non-residents register'd in District.	Deaths of residents register'd beyond District.	DEATHS AT ALL AGES. NETT.		
		Number	Rate.	Number	Rate.	Number	Rate.	Number				Rate.	Number	Rate.
1	2													
1890	129,878	4022	31.0	726	180	3214	24.7	362	51	...	3163	24.4		
1891	132,010	4060	30.8	786	193	3456	26.2	437	82	...	3374	25.6		
1892	134,221	3881	28.9	679	177	3015	22.5	372	70	...	2945	21.9		
1893	136,469	3895	28.5	726	186	2912	21.3	340	52	...	2860	21.0		
1894	138,755	3768	27.1	610	162	2644	19.1	417	87	17	2574	18.5		
1895	141,079	3873	27.4	737	190	3186	22.6	554	116	22	3092	21.9		
1896	143,442	3969	27.2	726	183	3058	21.3	383	105	...	2953	20.3		
1897	145,845	3793	26.1	696	183	2863	19.6	388	77	...	2786	19.2		
1898	148,258	3749	25.4	654	174	2693	18.2	395	101	6	2598	17.6		
1899	150,772	3732	24.8	739	198	3204	21.3	487	129	3	3078	20.5		
Averages for years 1890-1899	140,076	3874	27.7	708	183	3024	21.6	413	87	5	2942	21.1		
1900	153,297	3691	24.1	637	173	3112	20.3	489	129	17	3000	19.6		

Area of District in Acres, 4,729.
 AT CENSUS OF 1891.—Total population at all ages, 131,463. Number of inhabited houses, 27,485.
 Average number of persons per house, 4.783.

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 1877-1900.

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	129,877	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	134,221	28.9	21.9	2.6	2.1	2.7	2.3	177
1893	136,469	28.5	20.96	2.5	1.9	2.2	2.3	186
1894	138,755	27.1	18.5	1.8	1.9	2.0	1.8	162
1895	141,079	27.4	21.9	2.7	1.7	2.6	2.3	190
1896	143,442	27.2	20.3	2.8	1.6	2.36	2.2	183
Average 5 y'rs		27.8	20.7	2.5	1.8	2.4	2.2	180
1897	145,845	26.1	19.2	2.5	1.6	1.9	2.1	183
1898	148,288	25.4	17.6	2.2	1.5	1.9	2.0	174
1899	150,772	24.8	20.5	2.2	1.5	2.5	2.3	198
1900	153,297	24.1	19.6	2.4	1.7	2.5	2.0	173

TABLE No. 11.

Showing the number of deaths from the Seven Principal Zymotic Diseases in the Borough of Oldham, during the years 1877-1900.

Year	Population	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever Typhus and Typhoid	Diarrhoea	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	134,221	15	139	42	18	68	16	56	354
1893	136,469	65	29	16	16	56	26	140	348
1894	138,755	22	56	21	39	58	15	46	257
1895	141,079	23	97	16	25	57	26	143	387
1896	143,442	...	165	56	34	53	23	72	403
1897	145,845	...	96	21	9	77	19	145	367
1898	148,288	...	87	24	10	65	23	114	323
1899	150,772	...	49	46	21	54	18	138	326
1900	153,297	3	108	54	20	89	17	76	367

TABLE No. 12.

Weekly Means of Meteorological Observations for the year 1900.

Date	Barometer reduced to Sea Level at 32°	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 Bulb	Maximum in Sun Black Bulb	Maximum in Sun Black Bulb in Vacuo	Minimum on Grass.				Temperature 12in. below surface.	Temperature 4 ft below surface.
1899															
January 6	29.76	39	39	37	84	41	35	45	53	30	34	41	.64	5	8
13	30.25	38	39	38	92	41	35	42	47	30	35	41	2.01	6	7
20	29.82	38	39	38	92	41	35	42	46	30	34	40	1.57	7	10
27	29.99	41	41	41	100	45	37	46	48	34	37	41	1.31	5	10
February 3	29.87	35	35	34	90	36	32	39	*	28	34	41	.66	4	8
10	29.89	27	29	26	*	33	26	38	*	19	31	40	...	...	8
17	29.49	33	33	32	*	35	29	39	*	23	30	39	1.70	2	8
24	29.25	41	40	40	100	47	35	50	*	31	32	38	1.86	5	8
March 3	30.08	41	40	39	92	44	37	47	*	34	36	39	.84	2	8
10	30.39	40	38	36	83	40	35	41	*	31	34	40	...	...	9
17	30.23	43	41	39	85	47	36	54	74	28	36	39	.07	2	6
24	29.76	41	39	38	92	44	33	47	64	29	35	40	.47	3	6
31	30.01	39	38	35	75	41	31	46	61	25	33	40	.30	1	5
April 7	29.86	45	43	41	85	50	36	55	74	29	35	39	.85	4	4
14	29.81	47	46	44	86	47	41	53	72	33	39	40	1.13	5	6
21	30.29	54	53	50	80	57	44	62	84	36	42	42	.45	4	9
28	30.20	50	49	46	79	56	41	61	82	33	44	43	.52	4	7
May 5	29.83	50	50	48	86	55	45	60	80	39	44	44	.46	5	4
12	29.91	51	49	46	79	56	43	61	75	37	46	45	1.26	3	9
19	30.24	51	47	43	73	51	40	58	81	34	44	45	.04	3	8
26	29.92	53	54	50	74	58	46	65	87	39	47	46	.30	3	8

June	2	30-34	59	55	51	79	60	48	66	51	49	45	49	53	49	.74	2	7	
	9	30-01	62	59	54	71	65	52	73	100	100	47	50	56	50	2.30	6	6	
	16	30-00	66	64	60	77	72	56	77	100	100	47	52	56	52	.72	6	9	
	23	29-95	60	59	56	82	65	54	70	96	96	49	53	55	53	1.07	3	10	
	30	29-91	59	57	54	81	61	52	67	89	89	46	53	55	53	1.34	6	7	
July	7	29-99	58	57	54	81	63	52	68	93	93	46	53	55	53	.44	3	4	
	14	30-07	70	68	61	64	74	57	78	105	105	48	54	57	53	.10	1	4	
	21	30-19	71	70	64	69	76	61	80	103	103	51	60	60	54	.96	3	4	
	28	30-08	70	67	63	78	73	62	80	101	101	54	62	62	56	2.39	5	8	
August	14	29-78	61	61	57	77	68	55	73	101	101	51	60	60	57	4.10	7	9	
	11	29-89	57	57	55	87	59	52	65	83	83	48	55	55	56	.01	1	6	
	18	30-33	66	64	60	77	71	56	77	99	99	46	55	57	55	.96	4	9	
	25	29-81	63	61	58	82	67	55	74	94	94	49	58	58	56	.48	2	7	
Septem.	1	30-33	62	59	54	71	64	51	70	91	91	46	55	54	55	.05	2	6	
	8	30-29	60	56	53	81	61	51	68	89	89	41	54	54	54	.04	2	2	
	15	30-39	61	58	54	76	63	50	73	94	94	36	52	52	54	.40	3	5	
	22	30-21	62	61	58	82	65	54	71	92	92	42	52	52	54	1.17	5	7	
	29	29-87	56	57	54	81	60	53	65	81	81	45	52	52	54	1.20	7	8	
October	6	29-81	52	52	50	86	55	47	61	78	78	38	51	51	53	.65	4	9	
	13	30-11	55	40	39	92	58	50	64	82	82	42	50	50	52	1.03	5	8	
	20	29-98	48	47	45	86	50	43	57	73	73	34	46	46	52	1.09	5	7	
	27	30-06	47	47	46	93	50	43	54	67	67	36	45	45	50	1.83	6	9	
Novem.	3	29-96	49	50	49	93	52	46	57	69	69	39	45	45	50	1.03	5	8	
	10	29-72	46	48	46	86	51	45	52	58	58	38	46	46	50	1.81	6	10	
	17	29-67	42	43	42	92	46	40	50	58	58	34	42	42	49	.08	3	8	
	24	30-09	39	40	38	85	43	37	46	56	56	30	39	39	47	1.20	7	9	
Decem.	1	29-73	43	43	43	100	45	40	47	56	56	35	40	40	46	2.15	7	9	
	8	29-83	44	45	44	92	47	42	48	51	51	37	41	41	46	.80	3	10	
	15	*	47	47	45	86	50	42	51	56	56	38	42	42	46	.47	5	7	
	22	*	43	42	41	92	48	39	49	55	55	32	41	41	46	1.38	5	9	
	29	*	43	43	42	92	47	38	49	56	56	32	49	39	45		5		
Means		29-98	50	49	47	86	54	44	58	77	77	37	45	45	47	Totals.	48.44	203	7

* Being Repaired and Tested.

TABLE No. 13.

Prices of Coal, Bread, Flour, Butchers' Meat, and Potatoes, and the number of Paupers relieved in Oldham, 1885-1900.

	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	11 $\frac{1}{4}$	..	5	6 5	890
1886	8 0	11 $\frac{1}{4}$	...	5 $\frac{1}{4}$	7 4	931
1887	7 6	...	24 6	4 $\frac{1}{2}$	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	4 $\frac{7}{8}$	6 11	921
1891	10 7	...	29 2	4 $\frac{7}{8}$	10 2	901
1892	9 7	...	26 3	4 $\frac{5}{8}$	7 4	937
1893	11 7	...	21 6	4 $\frac{1}{2}$	6 6	1,011
1894	9 4	...	18 4	4 $\frac{1}{4}$	6 6	1,075
1895	7 8	...	17 0	4 $\frac{1}{8}$	6 9	1,089
1896	7 4	...	20 0	3 $\frac{3}{4}$	5 11	1,037
1897	7 4	...	24 7	3 $\frac{1}{2}$	6 5 $\frac{3}{4}$	1,061
1898	7 8	...	27 5	3 $\frac{1}{2}$	9 5	1,131
1899	11 9	...	19 11	3 $\frac{3}{4}$	7 6	1,136
1900	13 7	...	21 4	4 $\frac{5}{8}$	9 9	1,167

TABLE No. 14.

Return of Inquests held in Oldham, touching the cause of death of any person, for the year ended 31st December, 1900.

INQUESTS.	Males	Females.
Infants (Legitimate), under 1 year	16	11
" 1 year and under 7 years	11	13
Infants (Illegitimate or unknown) under 1 year	1	1
" 1 year and under 7 years.....	...	...
Children, 7 years and under 16	6	1
Youths, 16 years and under 25.....	8	1
Adults, 25 years and under 60	57	22
Aged, 60 years and above	16	16
Total	115	65
VERDICTS.	Males.	Females.
Murder .....	...	...
Manslaughter .....	...	1
Suicide, while Insane	9	4
Accidental Death.....	39	15
Found Dead	8	5
Excessive Drinking .....	...	2
Natural Causes.. ..	55	38
Found Drowned	4	...
Stillborn .....	...	...
Total	115	65

Total Fees and Costs, £318 18s. 0d.

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	
<i>Classes.</i>														
I.—SPECIFIC FEBRILE, OR ZYMOTIC DISEASES ...	127	219	346	67	66	88	79	59	17	15	18	8	2	765
II.—PARASITIC DISEASES ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
III.—DIETETIC DISEASES ...	...	...	...	...	...	1	7	6	2	...	...	...	...	16
IV.—CONSTITUTIONAL DISEASES...	3	6	9	8	7	9	17	31	20	14	38	8	...	161
V.—DEVELOPMENTAL DISEASES...	72	...	72	...	...	...	...	...	...	4	22	24	6	128
VI.—LOCAL DISEASES	308	210	518	60	69	79	121	201	127	132	230	100	9	1646
VII.—DEATHS FROM VIOLENCE	4	9	13	4	7	5	10	15	2	3	4	1	...	64
VIII.—DEATHS FROM ILL-DEFINED AND NOT SPECIFIED CAUSES ...	123	11	134	6	4	7	12	20	11	9	13	4	...	220
TOTALS	637	455	1092	145	153	189	246	332	179	177	325	145	17	3000
<i>I.—SPECIFIC FEBRILE, OR ZYMOTIC DISEASES.</i>														
<i>1. Miasmatic Diseases.</i>														
Smallpox .....	...	...	...	...	...	1	1	...	...	1	...	...	...	3
Measles	21	77	98	8	2	...	...	...	...	...	...	...	...	108
Scarlet Fever .....	...	29	29	19	4	1	1	...	...	...	...	...	...	54
Typhus .....	...	...	...	...	...	...	...	...	...	...	...	...	...	89
Whooping Cough	31	54	85	4	...	...	...	...	...	...	...	...	...	20
Diphtheria	1	12	13	6	1	...	...	...	...	...	...	...	...	...
Simple Continued and Ill-defined Fever .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric or Typhoid Fever ..	...	1	1	3	3	3	2	4	1	...	...	...	...	17
Tabes Mesenterica	1	4	5	2	...	...	...	...	1	...	...	...	...	8
Tubercular Meningitis, Hydrocephalus	10	10	20	6	1	1	...	...	...	...	...	...	...	28
Phthisis	5	5	10	10	39	66	63	44	9	6	6	2	...	255
Other Forms of Tuberculosis, Scrofula	3	6	9	4	3	1	...	2	...	...	1	1	...	21
Other Miasmatic Diseases .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Influenza .....	...	1	1	3	7	8	7	7	5	4	7	5	1	55
<i>2. Diarrhœal Diseases.</i>														
Simple Cholera .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhœa, Dysentery	46	19	65	...	1	...	1	1	1	3	3	...	1	76

No. 15.

OF OLDHAM.

during 52 Weeks ending December 29th, 1900.

WARDS.												
St. Mary's	St. Peter's	Werneth	West-wood	St. Paul's	Cold-hurst	Hartford	Hollin-wood	Clarks-field	Mumps	St. James'	Water-head	Public Institutions. (R'sid nts)
88	42	42	78	78	90	78	51	71	39	39	69	101
...
1	...	1	1	1	3	3	...	...	2	2	2	9
8	18	22	11	15	20	12	13	10	10	9	13	19
12	16	9	9	7	12	15	6	11	6	13	12	4
131	131	128	139	121	161	161	101	169	127	122	155	201
6	4	3	9	4	7	2	4	5	6	11	3	22
16	18	23	19	17	21	15	16	25	20	13	17	4
262	229	228	266	243	314	286	191	291	210	209	271	360
...	...	...	...	...	...	...	...	1	...	...	2	3
22	6	4	11	19	11	8	4	5	8	5	5	...
3	2	5	5	7	6	5	5	4	1	4	7	30
...
13	3	3	9	15	12	14	3	5	2	5	5	1
...	1	1	...	4	1	2	3	3	2	1	2	...
...
...	...	1	1	3	...	...	4	6	...	1	1	7
1	1	1	2	...	...	1	...	1	1	...	...	...
...	...	1	6	2	2	4	3	5	...	...	5	...
31	17	13	16	16	43	26	17	24	11	15	26	42
4	...	4	1	3	1	1	3	1	...	...	3	3
...
2	5	6	10	3	7	4	3	4	2	3	6	7
...
12	2	1	13	2	6	10	3	8	12	3	4	3

Continued.

WARDS.												
St. Mary's	St. Peter's	Werneth	West-wood	St. Paul's	Cold-hurst	Hartford	Hollin-wood	Clarks-field	Mumps	St. James'	Water-head	Public Institutions. (Resid'nts)
..
..
..
..
..	3	2	..	1	..	2	1	..	..	2	..	4
..
..	1	..	2	..	..	1	..	..	..	..	1	1
..	..	..	..	1	1	..	1	1	..	..	1	..
..	1	..	2	2	..	..	1	3	..	..	1	..
..
..
..
..
..
..
1	..	1	1	1	3	3	..	..	2	2	2	9
..
1	..	4	1	4	1	2	2	..	2	1	2	1
2	1	2	1	2	3	2	2	1	..	..	..	4
..	..	1	..	1	1	..	..	..	..	1	..	..
..	..	..	..	1	..	1	..	..	1	..	2	..
4	15	15	9	6	14	6	7	9	5	6	9	14
..	..	..	..	1	..	..	..	..	..	..	..	..
1	..	..	..	..	..	..	..	..	..	..	..	..
..	2	..	..	..	1	1	1	..	2	1	..	..
..	..	..	..	..	..	..	1	..	..	..	..	..

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.....	65	...	65	...	...	...	...	...	...	...	...	...	...	65
Atelectasis	4	...	4	...	...	...	...	...	...	...	...	...	...	4
Congenital Malformations....	3	...	3	...	...	...	...	...	...	...	...	...	...	3
Old Age .....	...	...	...	...	...	...	...	...	4	22	24	6	56	
VI.—LOCAL DISEASES.														
<i>1. Diseases of Nervous System.</i>														
Inflammation of Brain or Membranes	24	26	50	11	5	4	4	1	3	...	2	...	...	80
Apoplexy, Softening of Brain, Hemiplegia, Brain Paralysis.	3	...	3	...	1	2	8	28	20	18	34	17	2	133
Insanity, General Paralysis of the Insane .....	...	...	...	...	...	1	...	...	...	3	...	...	...	4
Epilepsy .....	...	...	...	1	6	2	5	3	1	2	3	...	...	23
Convulsions	47	17	64	2	1	...	...	...	...	...	...	...	...	67
Laryngismus Stridulus (Spasm of Glottis) .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Disease of Spinal Cord, Paraplegia, Paralysis Agitans...	3	...	3	...	1	1	...	1	2	5	8	2	...	23
Other Diseases of Nervous System .....	...	1	1	...	...	...	1	...	...	2	1	...	...	5
<i>2. Diseases of Organs of Special Sense.</i>														
Of Ear, Eye, Nose .....	...	...	...	...	...	1	1	...	...	...	...	...	...	2
<i>3. Diseases of Circulatory System.</i>														
Pericarditis .....	...	1	1	...	...	...	...	...	...	...	...	...	...	1
Acute Endocarditis.....	...	...	...	1	1	2	1	3	1	...	...	1	...	10
Valvular Diseases of Heart ...	1	...	1	4	7	8	7	20	5	5	6	3	...	66
Other Diseases of Heart	3	...	3	4	4	6	19	33	21	23	50	18	2	183
Aneurism .....	...	...	...	...	...	...	1	...	1	...	...	...	...	2
Embolism, Thrombosis .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Blood Vessels ..	...	...	...	...	2	1	...	...	1	3	4	6	...	17
<i>4. Diseases of Respiratory System.</i>														
Laryngitis	2	4	6	1	...	1	...	1	...	...	...	...	...	9
Croup	2	6	8	1	...	...	...	...	...	...	...	...	...	9
Emphysema, Asthma .....	...	...	...	...	...	...	1	3	6	1	3	...	...	14
Bronchitis	98	38	136	3	4	8	18	39	29	40	73	33	2	385
Pneumonia	63	83	146	16	13	26	24	36	14	11	19	7	1	313
Pleurisy .....	...	...	...	1	1	...	1	2	...	1	...	...	...	6
Other Diseases of Respiratory System ..	...	...	...	...	...	1	...	...	1	...	1	1	...	4

Continued.

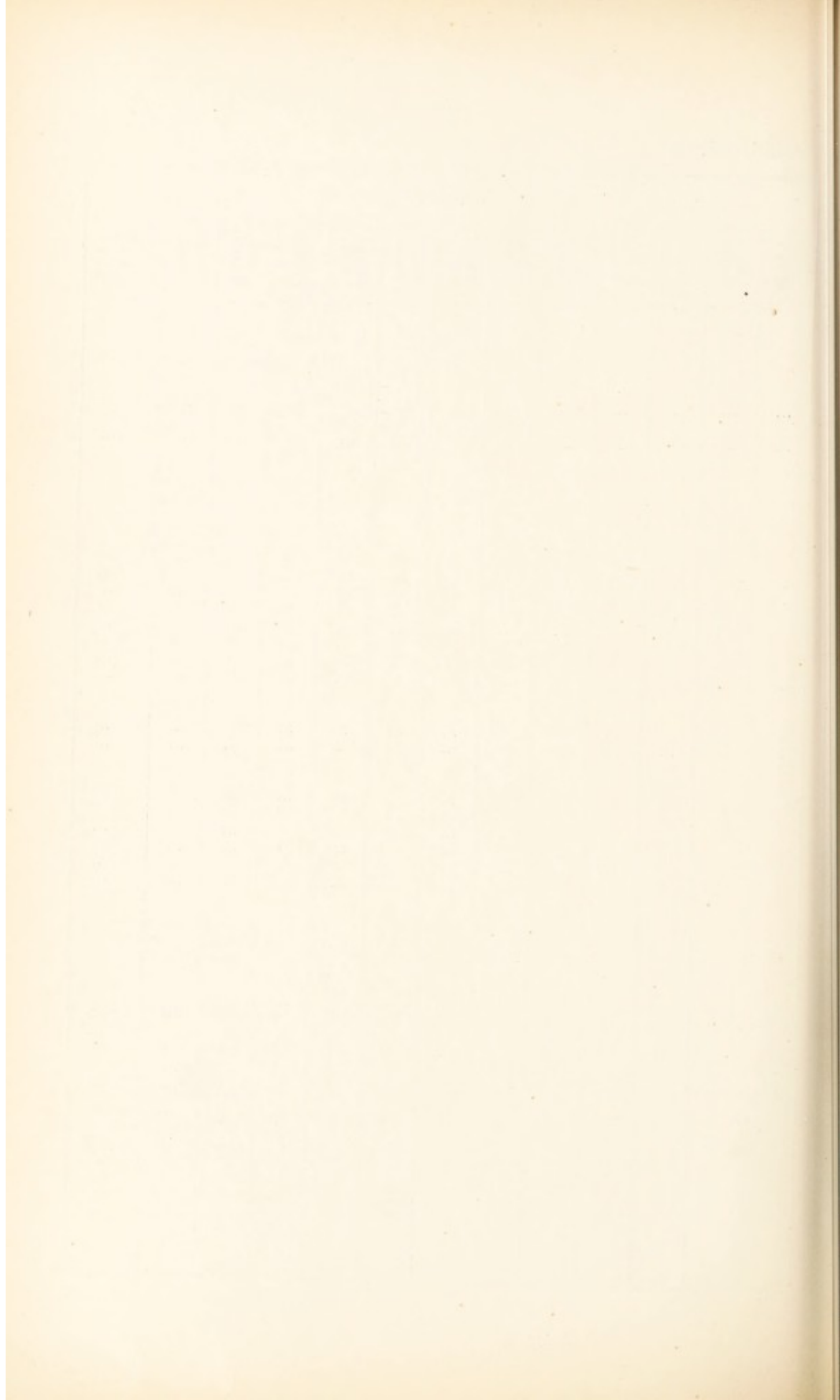
WARDS.												
Mary's	St. Peter's	Werneth	West-wood	St. Paul's	Cold-hurst	Hart-ford	Hollin-wood	Clarks-field	Mumps	St. James'	Water-head	Public Institutions. (R'sid'nts)
7	7	4	5	2	6	9	3	6	1	9	6	4
...	...	...	...	1	...	1	...	1	1	...	...	...
2	...	...	1	...	...	...	...	...	...	...	...	...
3	9	5	3	4	6	5	3	4	4	4	6	...
7	9	6	2	4	14	7	6	7	2	10	6	2
13	11	14	11	10	12	13	8	22	6	5	8	38
...	...	...	...	1	3	...	...	...	...	...	...	1
1	4	2	...	1	3	1	1	4	3	2	1	13
8	3	1	10	5	5	7	6	9	4	4	5	1
...
1	2	1	...	2	1	3	2	1	5	3	2	7
...	...	...	...	...	1	...	...	...	1	2	1	...
...	1	1	...	...	...	...	...	...	...	...	...	1
...	...	...	1	...	...	...	...	...	...	...	...	...
2	...	1	...	...	...	...	1	4	...	...	2	...
3	7	8	3	2	6	6	1	11	11	6	2	6
10	9	17	15	12	19	23	9	20	14	16	19	47
...	...	...	1	...	...	...	...	1	...	...	...	1
...
...	2	1	2	...	2	2	1	1	2	1	3	12
...	...	...	...	2	...	5	...	...	...	2	...	...
...	...	1	3	...	...	...	...	3	...	1	1	...
...	3	2	1	...	4	1	...	...	2	...	1	11
46	27	22	39	33	37	29	16	28	26	34	48	15
19	22	26	25	36	30	27	24	32	24	16	32	13
...	1	...	1	...	...	...	...	1	...	...	3	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
11. Diseases of Integumentary System.														
Carbuncle, Phlegmon .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Integumentary System .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
VII.—DEATHS FROM VIOLENCE.														
1. Accident or Negligence.														
Fractures and Contusions.....	...	3	3	1	3	4	5	8	1	1	2	...	...	28
Gunshot Wounds .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cut, Stab .....	...	...	...	...	...	...	...	...	...	1	...	...	...	1
Burn, Scald .....	...	5	5	1	...	...	...	1	...	1	...	...	...	8
Poison .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Drowning .....	...	1	1	2	2	...	...	2	...	...	...	...	...	7
Suffocation	3	...	3	...	1	...	1	1	...	...	1	...	...	7
Otherwise.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2. Homicide.														
Manslaughter	1	...	1	...	...	...	...	...	...	...	...	...	...	1
Murder.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3. Suicide.														
Gunshot Wounds .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cut, Stab .....	...	...	...	...	...	1	1	...	1	...	...	...	...	3
Poison .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Drowning .....	...	...	...	...	1	...	1	2	...	...	...	...	...	4
Hanging .....	...	...	...	...	...	...	2	1	...	...	1	1	...	5
Otherwise.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
VIII.—DEATHS FROM ILL-DEFINED AND NOT SPECIFIED CAUSES.														
Dropsy .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Debility, Atrophy, Inanition...	89	3	92	1	1	1	1	1	...	1	...	...	...	98
Mortification	1	...	1	1	...	...	...	...	...	...	...	...	...	2
Tumour.....	1	...	1	1	1	1	2	1	1	2	1	...	...	11
Abscess.....	1	3	4	1	2	1	1	...	...	...	2	1	...	12
Hæmorrhage	1	...	1	...	...	2	...	1	1	1	2	...	...	8
Sudden Death (cause not ascertained)	22	5	27	2	...	2	7	17	9	5	8	2	...	79
Causes not Specified or Ill-defined	8	...	8	...	...	...	1	...	...	...	...	1	...	10

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 Institutions, (Resid'nts)
...
...
2	2	3	4	4	4	1	1	1	2	4	...	13
...
1	...	...	...	...	...	...	...	1	1	4	1	7
...	1	...	...	...	1	...	1	...	...	2	2	...
2	...	...	2	...	...	1	1	...	...	1	...	...
...
...	...	...	...	...	1	...	...	...	...	...	...	...
...
...	...	...	...	...	...	...	1	...	2	...	...	2
...	...	...	2	...	1	...	...	...	1	...	...	...
1	1	...	1	...	...	...	...	2	...	...	...	...
...
...
7	9	5	10	10	13	6	7	10	8	3	10	...
...	...	...	1	...	...	1	...	...	...	...	...	...
...	...	4	...	...	1	...	2	1	1	1	1	...
1	...	1	...	...	1	...	1	7	1	...	...	2
...	2	2	2	...	...	...	...	1	...	1	...	...
6	7	9	5	7	5	8	6	6	10	6	4	2
2	...	2	1	...	1	...	...	...	...	2	2	...



PART II.

INFECTIOUS DISEASES.

On January 1st, 1900, The Infectious Disease Notification Acts became universal throughout the country. They were not previously in force in this town, their place being taken by The Oldham Borough Improvement Act of 1880, which contained somewhat similar enactments. Three diseases, however, have been added to the list of notifiable ones in this town, viz., Erysipelas, Membranous Croup (which is probably, in the majority of cases, identical with Diphtheria), and Continued Fever, and partly from this cause and partly from the number of Scarlet Fever cases, there has this year been a considerable increase in the number of notifications.

Eight cases of Smallpox, 1,065 cases of Scarlet Fever, 89 cases of Diphtheria, 72 cases of Typhoid, 21 cases of Puerperal Fever, 86 cases of Erysipelas, 5 cases of Membranous Croup, and 1 case of Continued Fever have been notified, compared with 2 cases of Smallpox, 822 cases of Scarlet Fever, 71 cases of Diphtheria, 92 cases of Typhoid, and 11 cases of Puerperal Fever in 1899.

During the year, 382 deaths were caused by Zymotic Disease, of which number Measles caused 108 deaths; Whooping Cough, 89; Diarrhœa, 76; Scarlet Fever, 54; Diphtheria, 15; Typhoid Fever, 17; Puerperal Fever, 10; Erysipelas, 5; Membranous Croup, 5; and Smallpox, 3.

It is worth while again drawing attention to the fact that those infectious diseases, which are by most householders looked upon as trivial and not requiring any precaution in the way of isolation, cause a far larger number of deaths than the more serious diseases, over 70 per cent. of the deaths from Zymotic Disease being caused by Measles, Whooping Cough, and Diarrhœa.

In consequence of the introduction of the disease into some of our ports, Plague has, during the year, been added to the list of the diseases notifiable.

SMALLPOX.

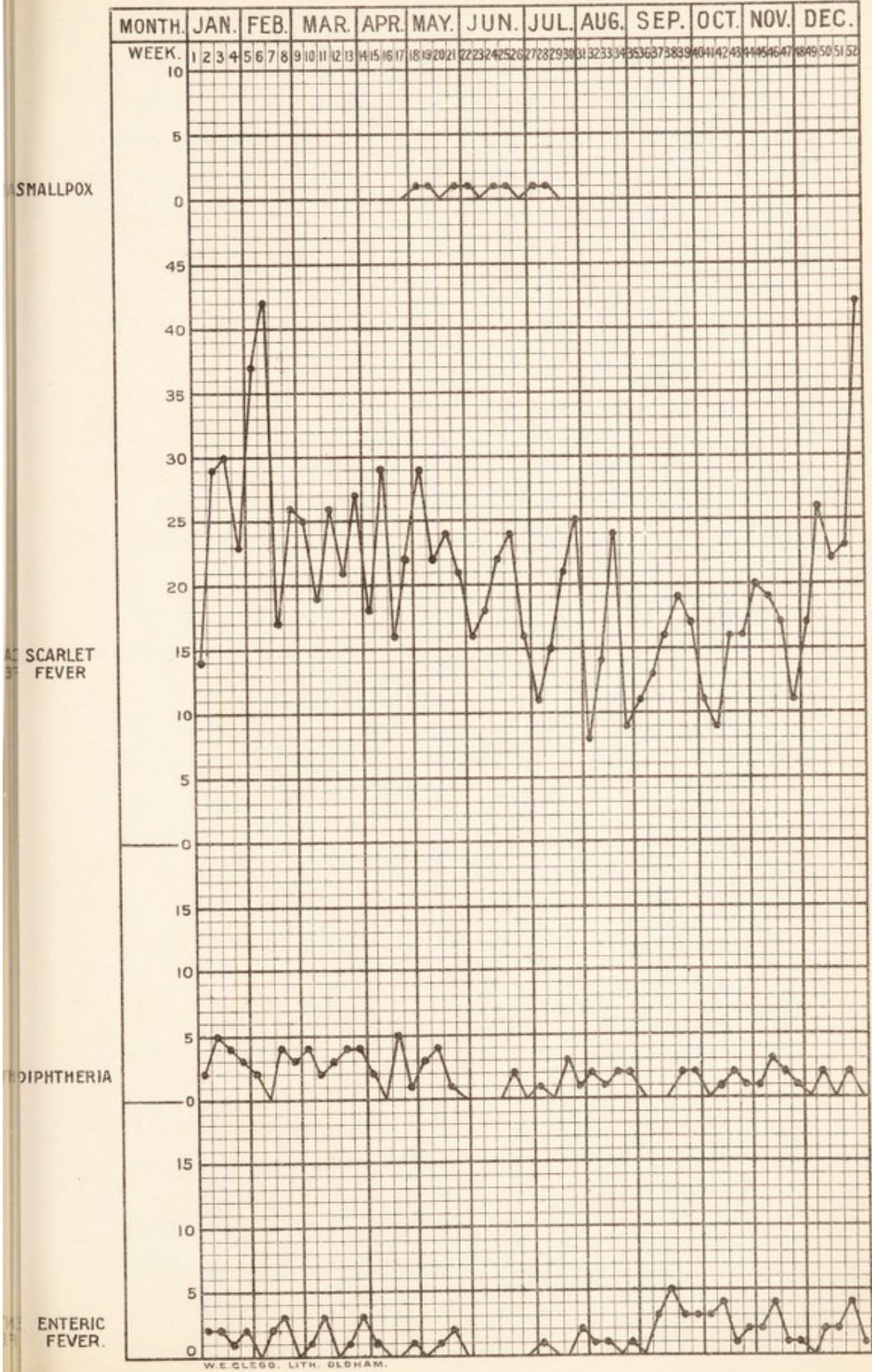
This disease has, in the past year, again presented itself in the borough, and eight of the inhabitants were reported as suffering from this disease. Three of them succumbed.

CASE I.—The first patient contracted the disease by travelling from London to Manchester in the same compartment as a man from Stalybridge, who was returning from Russia, suffering from Hæmorrhagic Smallpox. This same man in his journey from Queenborough to Stalybridge also directly communicated the disease to: (1) A machine fitter at Salford, (2) a commercial traveller at Halifax, (3) a machine fitter at Bolton, (4) a commercial traveller at

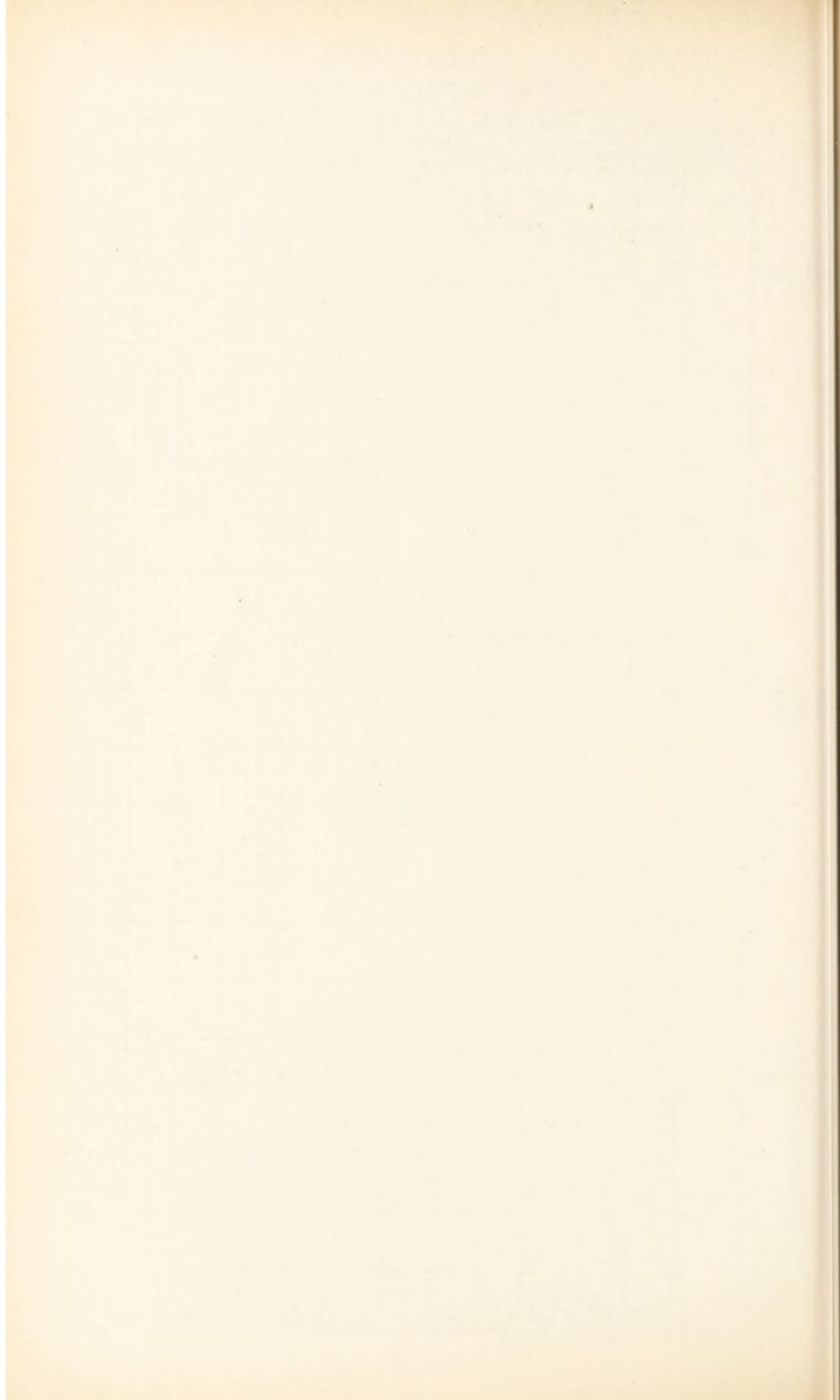
BOROUGH OF OLDHAM.

CASES OF INFECTIOUS DISEASE

Notified during the year 1900.



W.E. CLEGG, LITH. OLDHAM.



Carlisle, (5) a man at Stalybridge (who were his fellow-travellers), and (6 and 7) two ticket collectors at Victoria Station, Manchester. The disease was recognised by the medical attendant in an early stage, and promptly reported. The patient was removed to Strinesdale within a few hours of the eruption appearing, and all the necessary precaution taken, with the result that no further cases were known to arise from this patient.

CASE II.—The source of the disease in the second case could not be so definitely ascertained, but as he was in Stalybridge, following his occupation as an insurance collector, on the day the disease was presumably contracted, there is every probability that he received the infection from the same source, especially as two persons in Stalybridge also showed signs of the disease about the same date. The nature of the illness in this case was not so promptly recognised as in the first; and all the other cases which occurred in the town owe their origin either directly or indirectly to this man. The case was a very severe one, and ended fatally.

CASES III. AND IV.—Both these persons had visited Case II., and as their visits were concealed from the Inspectors no precaution could be taken on their behalf.

CASE V.—This man is believed to have contracted the disease indirectly from No. IV.

CASE VI. was the wife of a man who was in the habit of taking his breakfast at the house of No. II.

CASE VII.—Sister of case VI., and called to see her the day she was removed to Hospital.

CASE VIII.—Contracted from an unrecognised case who had associated with No. VI.

Three of the eight Oldham cases ended fatally, though the death of one of the patients was only indirectly due to Smallpox. The attack was not a severe one, but was associated with complications from which the patient was suffering before attacked with Smallpox.

All the above cases were removed to Strinesdale Hospital, and, in addition, 19 cases were admitted to accommodate Ashton and Stalybridge.

The following list gives the condition respecting vaccination, the severity of the disease, and other particulars concerning the patients.

Four patients had never been vaccinated, and they all died. One was doubtfully vaccinated, and also died. Twenty-two had been vaccinated in infancy, and two died, giving the following percentage :—

	No. of Patients.	Died.	Percentage.
Vaccinated	23	3	13 per cent.
Unvaccinated	4	4	100 „
Total	27	7	26 „

Four of the patients had also been re-vaccinated— one only two days before admission, which was too recent to have any effect, two others on the seventh day previous to admission, and one on the eighth day before admission, or in other words, one was re-vaccinated on the sixth day after the disease was contracted and the other on the

seventh. To prove effectual, vaccination should be performed within four days of the exposure to infection. All these cases were, however, exceedingly mild, and in the one re-vaccinated on the sixth day of the disease (case 21) many of the pocks did not even reach the vesicular stage, but remained in the papular throughout.

The houses where Smallpox occurred were all thoroughly disinfected, the walls stripped, and all persons known to have been in contact with the patient received a bath and their clothes were disinfected. They are then kept under observation until 14 days have elapsed after the exposure to infection. In connection with some of the cases as many as 14 or 15 persons had to be watched.

Almost every house in which the Oldham cases occurred was perfectly clean and free from any insanitary condition.

LIST OF CASES ADMITTED

Case No.	Age.	Vaccinated.	Re-Vaccinated.
*1	23	In Infancy .....	.....
*2	62	do. ....	.....
3	35	do. ....	.....
4	21	do. ....	.....
5	42	do. ....	.....
6	20	do. ....	.....
*7	51	do. ....	.....
8	39	do. ....	.....
9	39	do. ....	.....
10	10	Not Vaccinated † .....	.....
11	41	In Infancy .....	.....
12	4 months.	Not Vaccinated ... ..	.....
13	29	In Infancy .....	.....
14	51	do. ....	.....
*15	41	do. ....	.....
16	7	Not Vaccinated ... ..	.....
17	28	In Infancy	7th day before admission (2 small vesicles).
18	24	do. ....	.....
19	27	do. ....	.....
20	28	do.	2 days before admission.....
21	10	do.	8th day before admission (2 small vesicles).
22	37	do.	7th day before admission (2 small vesicles).
*23	26	do. ....	.....
*24	30	do. ....	.....
25	3	Not Vaccinated ... ..	.....
*26	34	In Infancy .....	.....
*27	33	do. ....	.....

* Oldham Cases.

† Vaccinated 1 day before admission to Hospital.

TO STRINESDALE HOSPITAL.

Condition of Marks.	Severity of Disease.	Duration of Stay in Hospital.	Result.
2 good marks ...	Very mild	DAYS. 17	Recovery
No marks	Severe, Confluent .....	...	Death
2 marks (1 fair, 1 small).	Moderate, Discrete ..	17	Recovery
3 faint marks ...	Mild case	28	Recovery
2 good marks ...	Moderate, Discrete ...	23	Recovery
2 good marks ...	Very mild case	34	Recovery
2 fair marks	Moderate, Confluent...	40	Recovery
3 faint marks ...	Very mild case	14	Recovery
2 good marks ...	Very mild case	14	Recovery
.....	Severe, Confluent .....	...	Death
2 faint marks ...	Moderate, Discrete ...	20	Recovery
.....	Severe, Confluent .....	...	Death
3 faint marks ...	Mild case	17	Recovery
2 fair marks ...	Moderate, Discrete ...	16	Recovery
2 faint marks ...	Moderate, Discrete ...	...	Death from Complica-
.....	Severe, Hæmorrhagic	...	Death [tions not [due to [Smallpox
3 faint marks ...	Mild case	17	Recovery
.....	.....	17	Recovery
2 faint marks ...	Severe, Discrete.....	43	Recovery
2 good marks ...	Mild case	14	Recovery
4 fair marks	Very trivial, Abortive	21	Recovery
2 small marks ..	Very mild	14	Recovery
2 good marks ...	Very trivial.....	14	Recovery
2 fair marks	Very mild	14	Recovery
.....	Severe, Hæmorrhagic	...	Death
3 fair marks	Very mild	25	Recovery
3 marks.....	Severe .....	...	Death

Having regard to the manner in which the disease was introduced into the Borough, the Chairman of the Health Committee (Councillor G. Hanson) and myself were instructed to join representatives from the other towns to which the disease had been carried, to interview the Local Government Board, and to request that more stringent methods should be adopted to prevent the disease being again introduced into this country in such a manner. This interview took place on July 11th. The deputation was introduced by Mr. T. W. Russell, M.P., Mr. T. H. Sidebottom, M.P., Mr. F. Platt-Higgins, M.P., and Mr. J. W. Sidebotham, M.P.

The Mayor of Stalybridge opened this interview, and gave full details of the disastrous results caused by the patient not being detained in hospital at the port where he landed, and asked that smallpox should be placed under the same regulations as plague, cholera, and yellow fever. Councillor Huddard (Salford), Alderman Rutter (Bolton), Councillor G. Hanson, and myself also spoke in support of these suggestions.

Mr. Russell, replying to the deputation, stated that complete inquiries were proceeding, that he quite recognised the seriousness of such a case, and was desirous of doing everything possible to prevent a repetition of it. He could not, however, hold out any hopes that smallpox would be placed under the same regulations as cholera, &c., it would inflict too great restrictions on the travelling public.

The ultimate result is that the following circular has been issued to all District Ports :—

HEALTH REQUIREMENTS.

Having regard to the very serious loss of life which resulted from the recent landing of a smallpox patient at an English port without the knowledge of the local Sanitary Authority, the Commissioners of Customs in accordance with the desire of the Local Government Board, hereby enjoin upon all Customs Officers whose duty it is to put the usual health questions to the masters of incoming vessels, and who may not be accompanied at the time by a medical officer, to use all practicable care in observing any passenger or member of the ship's company on board who may appear to be suffering from any illness which cannot be accounted for by sea sickness, and to send the earliest intelligence of any such case, even though not reported by the master, to the Port Sanitary Medical Officer.

By order of the Board,

JOHN GATLEY.

Had these instructions been carried out in the early part of the year, smallpox would not have been introduced into Stalybridge, Oldham, and the other towns mentioned, and the lives lost and the expense caused both to public authorities and private individuals would not have been incurred.

To Dr. Roberts Dudley, the Medical Officer of Health for Stalybridge, I am indebted for the above information.

SCARLET FEVER.

During the year 1901 the town has been subject to one of the periodic visitations of Scarlet Fever, and no less than 1,065 cases of this disease have been reported. This is the largest number of cases which have been reported

since 1887, in which year 1,775 cases came to the knowledge of the Sanitary Authority.

This disease appears to assume an epidemic form at intervals of four or five years, and the periods it has been most prevalent in Oldham during the last 20 years are 1878-79-80, 1887-88, 1892, 1896, and 1899-1900.

From this periodicity it has often been assumed that isolation is of little benefit, and that this precaution only postpones the evil day to unaffected members of a family. It will be noticed, however, that under the age of five years the mortality is very much heavier than when the disease occurs in children over that age; and in comparing the above periods it is found that the age at which the disease is contracted is gradually increasing and, in consequence, the percentage mortality is gradually decreasing, so that, even though the disease is only postponed until the child is older, there is less liability for a fatal result, and lives are thus saved by our isolation hospitals and the other precautions which are adopted in the town.

It must not be forgotten also that the opportunities for the spread of a disease like Scarlet Fever have increased—the population is denser, the schools contain larger numbers of scholars, social meetings are more numerous and general among children; and were it not for the isolation facilities and other measures adopted it is probable that many more cases and fatalities would occur than we find in the later epidemic periods.

Of the total number of cases occurring in the borough, 546, or rather over 50 per cent., were admitted to Westhulme Hospital. This is a higher percentage than in

previous years, and as, except in special cases, little or no pressure is used to get these cases into the Hospital, it shows an increased appreciation of the value of the institution.

Twenty-six per cent. of the cases were under the age of five, and 66 per cent. under the age of 10, compared with 27 per cent. and 72 per cent. respectively in 1899.

The mortality percentage of those under five was 10·1, against 11·1 in 1899 and 14·8 in 1898, and the total mortality percentage 4·9, against 5·6 and 7·2 in the same years.

The percentage mortality of those admitted to Westhulme was 5·1.

The difficulty of controlling the spread of Scarlet Fever is, I am of opinion, due to two causes 1st—That slight cases are often unrecognised and, by mixing with other children at schools and elsewhere, frequently communicate the disease to several other persons before they themselves are found to have suffered from the disease. 2nd—The impossibility of definitely deciding when a person suffering from this disease ceases to be infective. That desquamation is a fairly good guide is generally admitted, but when desquamation is complete it is by no means certain that the patient is free from infective qualities.

In one or two cases where the patients had been detained in the Hospital for some weeks after desquamation was complete, there is little doubt they communicated the disease to other members of their family after their return home, from the throat and nose still remaining infective.

If this occurs in hospital, where every patient is carefully inspected and is bathed in a disinfecting fluid before being discharged, there is much greater probability that the same will occur where patients are isolated at home, and where the same complete inspection is not observed.

From observations I have made, I am strongly of opinion that in many cases the throat and nose remain capable of conveying infection long after desquamation has ceased.

Scarlet Fever was most prevalent in the early part of the year, and the wards which have had the greater number of cases are Werneth and Hartford at one end of the town, and Clarksfield and Waterhead at the other.

Besides the usual precautions, I visited several of the schools in which the disease showed signs of prevalence, and where deemed necessary they were disinfected and cleansed.

DIPHTHERIA.

During the year 1900, 89 cases of diphtheria were reported, and of this number 17, or 19·1 per cent., proved fatal. In 1899 the cases reported numbered 71, and the deaths 23, giving a percentage mortality of 32·4, so that though there have been more cases reported this year the deaths have been fewer, and the percentage mortality considerably less. The cases were fairly evenly distributed throughout the Borough, the Wards having the fewest cases being St. James's and Waterhead. The disease was rather more prevalent in the early part of the year, but even in this period it did not assume any epidemic character, as the cases, except when they occurred in the same family, seldom had any connection with one another. In addition

to the above five cases of membranous croup were reported, and all of these had a fatal result. There is every probability that this disease is identical with diphtheria, and the same precautions as regards isolation, disinfection, and school exclusion are adopted as in diphtheria.

In connection with many of the cases of diphtheria local drainage defects were found, such as untrapped drains, broken pipes, &c., which were then put in a proper condition.

A supply of antitoxin has been throughout the year kept at the Central Police Station for urgent cases, and there is much evidence to show that, as in previous years, the prompt use has resulted in the saving of certain lives which would otherwise have been lost. Since antitoxin came into use the percentage mortality from diphtheria has decreased.

TYPHUS FEVER.

No case of typhus fever has been reported during the year, but on February 10th I received information that a woman at Bury, who had been nursing her sister in Pawn Street, was suffering from this disease. On inquiry, I found that two persons had died recently from this house—a man from influenza and pneumonia, and his wife, after removal to the Workhouse, from alcoholism. The children remained in good health. These people had only lived a short time in Pawn Street, and it was understood they came there from Manchester.

The house, which had been locked up since the woman and her family had been removed to the Workhouse, contained some very filthy bedding, &c. The house was disinfected, and the bedding and furniture (so called) were

consigned to the destructor. The houses in the immediate neighbourhood were also visited without result. One case of this disease was received into Westhulme Hospital from Chadderton in October.

ENTERIC OR TYPHOID FEVER.

During the year 1900, there have been 72 cases of this disease reported, of which number 17 have died. Compared with the previous year there have been 20 fewer cases, while the deaths total the same, thus giving a death percentage in 1900 of 23·6, and in 1899 of 18·5.

The disease was most prevalent in the months of September and October. This has also been the case in previous years, and the period of onset in several cases strongly indicated that the disease was contracted elsewhere than Oldham. In four cases during the year the illness was certainly contracted outside the Borough. Sixteen cases were associated with drainage defects, and one with impure well water. There were also 8 secondary cases—two in each of two houses, and one each in four other houses.

Eleven cases, scattered throughout the year, occurred in association with one milk round. The milk for this round was obtained from three farms, one in Oldham, and two outside the boundary. Two of these farms on being visited were found in a very dirty condition, and in both water from springs near the farms was used for cooling the milk before being sent out for sale. There was no evidence that the water was used for purposes of adulteration. The farm in the Borough was thoroughly cleaned, and that outside the Borough reported to the Health Authority having jurisdiction, and through them put in proper order.

With regard to the distribution of the disease over the town, Clarksfield Ward still keeps up its reputation for having a larger number of cases than any other Ward. Hollinwood and St. Paul's Wards also have more than their share of these cases, while the fewest cases occurred in Mumps and St. James's, each of these Wards only having one case.

Thirty-two cases; or 44 per cent. were removed to West-hulme Hospital for treatment and isolation, being a much larger percentage than in previous years.

The mortality of those treated in the Hospital compares favourably with those treated outside, for of the 32 cases admitted, 7 died, giving a percentage mortality of 21 per cent., and of the 40 retained at home 10, or 25 per cent. died.

PUERPERAL FEVER.

During the year 21 cases of this disease have been reported, and of these 12 have died. No connection could be traced between any of the cases, and they were also very generally distributed throughout the town.

ERYSIPELAS.

During the year 86 cases of this disease have been notified, and 5 deaths have occurred. The seeming prevalence of the disease in Westwood and Coldhurst Wards is due chiefly to the notification of several cases of erythema occurring in association with contused wounds and ulcers, and not to any real prevalence of erysipelas in the district.

GENERAL MEASURES ADOPTED TO PREVENT THE SPREAD OF INFECTIOUS DISEASE.

WESTHULME HOSPITAL.—During the year 546 cases of scarlet fever, 32 cases of typhoid, 2 cases of diphtheria, and 2 cases of measles have been removed from houses in the Borough for isolation in Westhulme, and in addition to these, 39 cases of scarlet fever, 5 cases of typhoid, and 1 case of typhus have been received from the surrounding Townships of Chadderton, Royton, Crompton and Failsworth.

Practically no complaints have been made by those admitted, or by the parents of those admitted, and in a large number of cases expressions of satisfaction have been tendered at the kind and sympathetic manner in which the inmates have been treated by various members of the staff.

The grounds around the hospital are gradually assuming a more finished appearance, as the land is levelled and planted with shrubs and trees.

STRINESDALE HOSPITAL.—This hospital has been kept in constant readiness for the reception of Smallpox patients during the year. All the eight Oldham cases were removed there, and 19 cases from Ashton and Stalybridge were also received and treated there.

DISINFECTION.—During the year 1,256 houses, or 3,176 rooms have been disinfected. The disinfection is carried out by burning sulphur in the rooms, and this procedure is always enforced after the occurrence of any case of notifiable disease, and is advised after death from

Phthisis and Measles. After the occurrence of Smallpox, the walls are stripped after disinfection. In the case of this disease also, all persons who have been in contact with the patient are sent to the Health Yard for a bath and to have their garments disinfected.

Midwives who have attended cases of Puerperal Fever also receive a disinfecting bath.

Bedding, clothing, and similar articles are disinfected by superheated steam at the Health Yard. Nearly 14,000 Articles have been dealt with in this manner during the year.

Disinfectants in the form of sanitas or izar, carbolic soap and powder are distributed free to those houses where infectious disease exists.

The excreta of Typhoid patients are received in covered pails, which are removed twice weekly and the contents burnt at the Destructor.

The drains of houses where Typhoid Fever, Diphtheria, or Puerperal Fever occurs are tested by the smoke machine.

SCHOOLS.—In the early part of the year it was necessary to close four infant departments in various public schools in the borough on account of the prevalence of Measles.

The Head Teachers of most of the schools regularly report cases of Measles, Whooping Cough, Chicken Pox, and other infectious or contagious diseases, and the cases

are then visited by the Inspectors and advice as to isolation, &c., given. Any insanitary conditions are at the same time noticed.

Several schools were fumigated during the year.

It was not found necessary to close any school from the prevalence of other infectious disease.

TABLE No. 16.

SCARLET FEVER.

Ages	Cases.	Deaths.	
		Total.	Percentage.
Under 5 years ...	276	28	10·1
5 to 10	434	13	3·0
10 to 15... ..	228	7	3·0
15 to 25... ..	108	4	3·7
25 to 35	15	1	6·6
35 to 45	4	...	...
45 to 55... ..	...	...	...
Over 55 ... ..	...	...	...
Total	1065	53	4·9

TABLE No. 17.

DIPHThERIA.

Ages.	Cases.	Deaths.	
		Total.	Percentage.
Under 5 years ...	28	9	32·1
5 to 10... ..	29	6	20·7
10 to 15... ..	12	1	8·3
15 to 25... ..	8	1	12·5
25 to 35... ..	5	...	...
35 to 45... ..	6	...	...
45 to 55... ..	1	...	...
Over 55... ..	...	...	...
Total	89	17	19·1

TABLE No. 18.

TYPHOID OR ENTERIC FEVER.

Ages.	Cases.	Deaths.	
		Total.	Percentage
Under 5 years ..	4	1	25·0
5 to 10... ..	9	2	22·2
10 to 15... ..	10	1	10·0
15 to 25... ..	16	2	12·5
25 to 35... ..	18	4	22·2
35 to 45... ..	10	3	30·0
45 to 55... ..	3	3	100·0
Over 55... ..	2	1	50·0
Total	72	17	23·6

TABLE No. 19.

Showing the number of Cases of Sickness and the Deaths Registered during the several months of the year 1900 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 ...	...	...	119	5	16	2	7	1	...	...	...	...	17	...	...	...	...	...	1	...
February...	...	...	118	8	8	2	6	1	...	1	...	...	11	1	...	...	...	...	...	...
March .....	...	...	99	4	16	2	7	4	5	2	...	...	10	2	2	2	...	...	...	...
April .....	...	...	93	10	8	2	2	...	2	1	...	...	5	...	1	1	...	...	...	...
May	4	1	100	4	8	2	3	1	...	...	...	...	5	...	...	...	...	...	...	...
June	2	1	84	4	2	...	...	...	3	2	...	...	5	...	...	...	...	...	...	...
July	2	1	75	3	6	...	4	1	...	...	...	...	5	...	...	...	...	...	...	...
August ...	...	...	63	3	6	2	2	1	...	...	...	...	7	...	...	...	...	...	...	...
September.	...	...	65	6	4	...	14	2	2	2	...	...	5	...	...	...	...	...	...	...
October ..	...	...	61	3	4	2	11	4	3	3	...	...	9	2	...	...	...	...	...	...
November..	...	...	71	2	7	1	7	...	3	1	...	...	4	...	...	...	...	...	...	...
December..	...	...	117	2	4	...	9	2	1	1	...	...	7	...	...	...	...	...	...	...
Totals ...	8	3	1065	54	89	15	72	17	21	10	...	...	86	5	5	5	...	...	1	...

TABLE No. 20.

Cases of Infectious Disease notified during the Year 1900.

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	8	...	...	...	1	7	...
Cholera .. ...	...	...	...	...	...	..	...
Diphtheria	89	1	27	41	8	12	...
Membranous Croup	5	...	2	3	...	...	...
Erysipelas	86	3	5	8	17	47	6
Scarlet Fever ..	1065	7	269	662	108	19	...
Typhus Fever ...	...	...	...	...	...	...	...
Enteric Fever ..	72	...	4	19	16	33	...
Relapsing Fever ..	...	...	...	...	...	...	..
Continued Fever ...	1	...	...	...	...	1	...
Puerperal Fever ...	21	...	...	...	7	14	...
Plague ... ..	...	...	...	...	...	..	...
Totals ...	1347	11	307	733	157	133	6

TABLE No. 20—Continued.

Cases of Infectious Disease notified during the Year, 1900.

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 ..	1	...	...	...	...	...	...	...	1	..	2	4
Cholera .....	...	...	...	...	...	...	...	...	...	...	..	...
Diphtheria...	8	7	12	5	13	8	10	8	7	7	1	3
Membranous Croup ...	...	..	...	..	...	...	...	1	2	...	1	1
Erysipelas...	2	4	3	21	4	11	9	4	8	1	10	9
Scarlet Fev'r	46	84	160	69	66	61	114	92	117	45	94	117
Typhus ..	...	...	...	...	...	...	...	...	...	...	...	...
Enteric ..	5	3	4	2	11	4	3	13	21	1	1	4
Relapsing ..	...	..	..	...	...	...	...	...	...	...	...	...
Continu'd ..	...	1	...	...	...	...	...	...	...	...	...	...
Puerperal ..	..	1	3	4	3	...	2	1	5	...	...	2
Plague .....	...	...	...	...	...	...	...	...	...	...	...	...
Totals ...	62	100	182	101	97	84	138	119	161	54	109	140

TABLE No. 20—Continued.

Cases of Infectious Disease notified during the Year, 1900.

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 ...	1	...	...	...	...	...	...	...	1	...	2	4
Cholera .....	...	...	...	..	...	...	...	...	...	...	...	...
Diphtheria...	...	...	..	...	...	1	...	...	...	1	...	...
Membranous Croup ...	...	...	...	...	...	..	...	..	...	...	...	...
Erysipelas...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fev'r	25	30	71	40	45	31	65	45	71	26	48	49
Typhus ,,	...	...	...	...	...	...	...	...	...	...	...	...
Enteric ,,	2	2	...	...	8	4	2	7	7	...	...	...
Relapsing ,,	...	...	...	...	...	...	...	...	...	...	...	...
Continu'd ,,	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal ,,	...	...	...	...	...	...	...	...	...	...	...	...
Plague .....	...	...	...	...	...	...	...	...	...	...	...	...
Totals ...	28	32	71	40	53	36	67	52	79	27	50	53

SUMMARY OF CASES ADMITTED INTO WESTHURST

	1880		1881		1882		1883		1884		1885		1886		1887		1888
	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	...	1238
Measles	2	...	...	...	2	...	1	...	5	...	...	...	...	...	1	1	...
Scarlet Fever...	73	12	60	15	30	2	91	3	111	10	90	8	205	10	571	27	2038
Diphtheria.....	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Typhus .....	...	...	1	1	...	...	...	...	1	...	...	...	12	4	2	1	...
Typhoid Fever.	28	5	56	8	29	4	32	7	36	4	31	7	52	8	40	6	238
Simple Con- tinued 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
	110	17	162	35	81	8	135	11	165	16	132	18	277	23	619	36	354

21.

MITAL DURING THE YEARS 1880 TO 1900.

9	1890		1891		1892		1893		1894		1895		1896		1897		1898		1899		1900	
	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	..	..	..	..	..	..	..	..	..	..	..
..	3	..	..	..	1	..	..	..	..	..	18	5	12	3	43	3	22	6	9	..	2	..
3	134	7	81	4	246	15	..	..	20	2	67	5	371	18	140	8	164	14	400	23	585	30
..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	2	..	2	..
..	1	..	..	..	1	..	..	..	..	..	..	..	8	2	..	..	..	..	..	..	1	1
5	28	5	46	10	12	2	..	..	15	3	41	10	27	5	31	6	29	7	34	9	37	9
..
..
..
..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	166	12	128	14	397	33	638	63	63	6	134	20	418	28	214	17	216	27	445	32	627	40

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 1900.

Year.	Small-pox.	Scarlet Fever.	Diphtheria.	Typhus Fever.	Typhoid Fever.	Puerperal 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

TABLE No. 23.

Summary of Smallpox Cases treated in the various Hospitals during the years 1894 to 1900.

Hospitals.	1894.		1895.		1896.		1897.		1898.		1899.		1900.	
	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	...	...	...	...	...	...	...	...	...	...
Strinesdale.....	...	...	...	...	19	...	...	...	1	...	2	...	27	7
Totals	131	17	124	22	27	...	...	...	1	...	2	...	27	7

Moscow Temporary Hospital was closed in 1896.

No Oldham cases have been sent to Cinder Hill Hospital since 1895.

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

† " " 4 " " "

PART III.

WORK OF THE HEALTH DEPARTMENT.

1901.

STAFF.

The staff remains the same as in 1899, and consists of the Chief Inspector, five District Inspectors, a Smoke Inspector, an Inspector for the Workshops, Shop Hours and Shop Seats Acts, two Disinfectors, a Chief Clerk and three Assistant Clerks.

HOUSE INSPECTION.

During the year a much larger number of houses have been visited than in the previous year. This is partly owing to there being a larger number of scarlet fever cases. The houses visited in the course of house-to-house inspection number 709, to this must be added 540 houses visited and examined in consequence of complaints received. About 1,200 houses have also been visited where infectious disease has been reported; over 200 houses in which phthisis has occurred, and 50 where persons have died from diarrhoea. In the case of 739 houses the drains have been thoroughly tested, and 315 defects have been discovered. This is a much smaller percentage of defects found than in 1899, when 57 per cent. of the houses tested were found to have defective conditions, against 42 per cent. in the present year, indicating that the house drainage in the town is gradually improving.

It has not been necessary to bring as many cases before the Sanitary Committee, and fewer nuisances remain unabated at the termination of the year than in 1899. The various defective conditions which have been discovered during the course of the above visits are tabulated under the Inspectors' Reports.

INSANITARY PROPERTY.

During the year the Health Committee have visited about 100 dwellings reported as being in an insanitary condition, in addition to visiting several insanitary courts, back passages, &c.

Owing to the insanitary condition in which houses are frequently found after they are closed as unfit for human habitation, the efforts of the Committee have been extended rather in the direction of repair, and of the above number only five, which it was impossible to render sanitary, were actually closed. Ten back-to-back houses were converted into five through houses, and most of the other houses reported were ordered to be put in thorough repair. A few were left over for future consideration.

In addition to these, 35 houses were voluntarily closed by the owners, either because of their dilapidated condition, or because their room has been required for the purpose of increasing the accommodation of other buildings.

DAIRIES AND MILKSHOPS.

In connection with the milk supply of the town a distinct advance has been made during the year in obtaining by Act of Parliament powers to prevent milk from tubercular cows being sold within the Borough. The clauses in the Act

give power to the Medical Officer of Health to visit any dairy or farm both within and without the Borough from which a supply of milk is sold in the town ; to make an examination of the animals, and the Health Committee can prohibit the milk from any dairy being sold if a tubercular animal is retained in such dairy.

The clauses are as follows, and came into force on January 1st, 1901. A printed copy of the clauses have been supplied to every dairy owner and farmer in the Borough, and also, as far as possible, to every farmer or cowkeeper outside the Borough who was known to supply milk to anyone in the town, and a list has been kept of their names and addresses :—

PENALTY FOR SELLING MILK OF DISEASED COWS.

1. Every person who knowingly sells or suffers to be sold or used for human consumption within the borough the milk of any cow which is suffering from tuberculosis of the udder shall be liable to a penalty not exceeding ten pounds.

PENALTY ON FAILING TO ISOLATE DISEASED COWS.

2. Any person the milk of the cows in whose dairy is sold or suffered to be sold or used for human consumption within the borough who after becoming aware that any cow in his dairy is suffering from tuberculosis of the udder keeps or permits to be kept such cow in any field shed or other premises along with other cows in milk shall be liable to a penalty not exceeding five pounds.

OBLIGATION TO NOTIFY CASES OF TUBERCULOSIS,

3. Every dairyman who supplies milk within the borough and has in his dairy any cow affected with or suspected of or exhibiting signs of tuberculosis of the udder shall forthwith give written notice of the fact to the medical officer of health stating his name and address and the situation of the dairy or premises where the cow is.

Any dairyman failing to give such notice as required by this subsection shall be liable to a penalty not exceeding forty shillings.

POWER TO TAKE SAMPLES OF MILK.

4. (a) It shall be lawful for the medical officer of health or any person provided with and if required exhibiting the authority in writing of such medical officer of health to take within the borough for examination samples of milk produced or sold or intended for sale within the borough.
- (b) The like powers in all respects may be exercised outside the borough by the medical officer of health or such authorised person if he shall first have obtained from a justice having jurisdiction in the place where the sample is to be taken an order authorising the taking of samples of the milk which order any such justice is hereby empowered to make.

POWER TO INSPECT COWS AND TAKE SAMPLES OF MILK.

5. (a) If milk from a dairy situate within the borough is being sold or suffered to be sold or used within the borough the medical officer of health or any person provided with and if required exhibiting the authority in writing of the medical officer of health may if accompanied by a properly qualified veterinary surgeon at all reasonable hours enter the dairy and inspect the cows kept therein and if the medical officer of health or such person has reason to suspect that any cow in the dairy is suffering from tuberculosis of the udder he may require the cow to be milked in his presence and may take samples of the milk and the milk from any particular teat shall if he so requires be kept separate and separate samples thereof be furnished.
- (b) If the medical officer of health is of opinion that tuberculosis is caused or is likely to be caused to persons residing in the borough from consumption of the milk supplied from a dairy situate within the borough or from any cow kept therein he shall report thereon to the Corporation and his report shall be accompanied by any report furnished to him by the veterinary surgeon and the Corporation may thereupon serve on the dairyman notice to appear before them within such time not less than twenty-four hours as may be specified in the notice to show cause why an order should not be made requiring him not to supply any milk from such dairy within the borough until the order has been withdrawn by the Corporation.

- (c) If the medical officer of health has reason to believe that milk from any dairy situate outside the borough from which milk is being sold or suffered to be sold or used within the borough is likely to cause tuberculosis in persons residing within the borough the powers conferred by this sub-section may in all respects be exercised in the case of such dairy. Provided that the medical officer of health or other authorised person shall first have obtained from a justice having jurisdiction in the place where the dairy is situate an order authorising such entry and inspection which order any such justice is hereby empowered to make.
- (d) Every dairyman and the persons in his employment shall render such reasonable assistance to the medical officer of health or such authorised person or veterinary surgeon as aforesaid as may be required by such medical officer of health person or veterinary surgeon for all or any of the purposes of this sub-section and any person refusing such assistance or obstructing such medical officer of health person or veterinary surgeon in carrying out the purposes of this sub-section shall be liable to a penalty not exceeding five pounds.
- (e) If in their opinion the dairyman fails to show cause why such an order may not be made as aforesaid the Corporation may make the said order and shall forthwith serve notice of the facts on the county council of any administrative county in which the dairy is situate and on the Local Government Board and if the dairy is situate outside the borough on the council of the borough or county district in which it is situate.
- (f) The said order shall be forthwith withdrawn on the Corporation or their medical officer of health being satisfied that the milk supply has been changed or that it is not likely to cause tuberculosis to persons residing in the borough.
- (g) If any person after any such order has been made supplies any milk within the borough in contravention of the order or sells it for consumption therein he shall be liable to a

penalty not exceeding five pounds and if the offence continues to a daily penalty not exceeding forty shillings.

- (h) A dairyman shall not be liable to an action for breach of contract if the breach be due to an order under this sub-section.
- (i) The dairyman may appeal against an Order of the Corporation under this sub-section or the refusal of the Corporation to withdraw any such Order either to a Petty Sessional Court having jurisdiction within the borough or at his option if the dairy is situate outside the borough to the Board of Agriculture who shall appoint an officer to hear such appeal. Such officer shall fix a time and place of hearing within the borough and give notice thereof to the dairyman and the town clerk not less than forty-eight hours before the hearing. Such officer shall for the purposes of the appeal have all the powers of a petty sessional court. The Board of Agriculture may at any stage require payment to them by the dairyman of such sum as they deem right to secure the payment of any costs incurred by the Board of Agriculture in the matter of the appeal. The Court or the Board of Agriculture as the case may be may confirm vary or withdraw the Order, which is the subject of the appeal and may direct to and by whom the costs of the appeal (including any sum paid or payable to the Board of Agriculture as aforesaid) are to be paid but pending the decision of the appeal the Order shall remain in force, unless previously withdrawn by the Corporation.

NOTICE OF PROVISIONS OF ACT.

6. The Corporation shall cause to be given public notice of the effect of the provisions of this section by advertisement in local newspapers and by handbills and otherwise in such manner as they think sufficient and this section shall come into operation at such time not being less than one month after the first publication of such an advertisement as aforesaid as the Corporation may fix.

PROCEDURE.

7. Offences under this section may be prosecuted and penalties may be recovered by the Corporation before a petty sessional court having

jurisdiction in the place where the dairy is situate or the offence is committed and not otherwise.

AS TO EXPENSES.

8. All expenses incurred by the Corporation in carrying into execution the provisions of this section shall be chargeable upon the borough fund and borough rate and the Corporation may also charge upon the same rate any expense incurred by them in the application by a veterinary surgeon of the tuberculin or other reasonable test for the purpose of discovering tuberculosis in any cow whose milk is or was recently being supplied within the borough provided that no such test shall be applied except with the previous consent of the owner of such cow.

EXECUTION OF THIS SECTION BY COMMITTEE.

9. This section may be carried into execution by a Committee of the Corporation formed in accordance with and subject to the provisions of the Fourth Schedule to the Diseases of Animals Act, 1894, except that the Committee shall consist wholly of members of the Corporation.

PROVISIONS AS TO RETAILERS OF MILK.

The provisions of section 34 of the Contagious Diseases (Animals) Act 1878 and of the Dairies Cowsheds and Milkshops Order 1885 made thereunder and of any other order made or to be made under the said section or relating to dairies cowsheds and milkshops and of any regulations made or to be made by the Corporation under any such Order for securing the cleanliness of milk vessels used for containing milk for sale shall apply to all vessels used within the borough for the reception measurement storage or delivery of milk by persons selling milk by retail in the streets.

All the dairies and milk farms in the Borough are regularly inspected, and few complaints have to be made as to the manner in which the milk is dealt with; 14 cases of scarlet fever have been reported at these places, and when the patient is not removed to hospital, most rigid isolation is required, special attendants being insisted upon to look after the patient and the milk is not allowed to be taken into the house where the patient is. With the exception of

the cases mentioned under the heading of typhoid fever, there has been no outbreak of disease which can be traced to the milk supply.

The evidence that milk is the cause of many of the cases of tuberculous disease in young children is very strong, and until measures can be enforced throughout the country for ensuring a pure milk supply, householders are strongly advised to boil or sterilize their milk before using.

ICE CREAM.

This commodity, which is supposed to consist largely of milk, but which often contains but a small percentage, has had its manufacture and sale placed under better control by clause 30 in the above-mentioned Act.

The conditions under which ice cream is frequently manufactured and stored practically ensure its contamination by diseased organisms, and there is every probability that scarlet fever, diphtheria, tubercular disease, diarrhœa, and other similar diseases are caused in this manner. Many of these disease germs are not destroyed by freezing, as is popularly supposed.

The provisions of the Act are as follows :—

1. Any person being a manufacturer of or merchant or dealer in ice cream or other similar commodity who within the borough—
 - (a) Causes or permits ice cream or any similar commodity to be manufactured sold or stored in any cellar or room in which there is an inlet or opening to a drain ; or
 - (b) In the manufacture sale or storage of any such commodity does any act or thing likely to expose such commodity to infection or contamination or omits to take any proper precaution for the due protection of such commodity from infection or contamination ; or

- (c) Omits on the outbreak of any infectious disease amongst the persons employed in his business to give notice thereof to the medical officer of health shall be liable for every such offence on summary conviction to a penalty not exceeding forty shillings.

2. The Corporation shall cause to be given public notice of the effect of the provisions of this section by *advertisement* in local newspapers and by *handbills* and otherwise in such manner as they think sufficient and this section shall come into operation at such time not being less than one month after the first publication of such an advertisement as aforesaid as the Corporation may fix.

COMMON LODGING-HOUSES.

These premises are under the control of the Watch Committee, and are supervised by special members of the police force. The accommodation is as follows:—

Number of Registered Lodging Houses..	14
Total accommodation at night	1,172
Number of persons who occupied them	
during the year	274,765

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

OFFENSIVE TRADES.

Except for the addition of a small gut scraping establishment, these remain the same as last year. The majority are small places, and cause very few complaints. The various premises have been visited 1,113 times, and have only required four notices to be served, all of which have been complied with.

SLAUGHTER HOUSES.

All these premises have been personally inspected by myself during the year, and I have invariably found them in a clean and fairly satisfactory condition. There were 58 licenses granted, being the same number as in the previous year.

The Chief Inspector and the Assistant Inspectors are constantly visiting these premises, and during the year 4,938 visits have been paid, being an average of 85 visits to each slaughter house. Fourteen notices have been served for defective conditions found in them, and all these notices have been complied with.

Not only is the meat in the slaughter houses and butchers' shops in the town constantly under inspection, but the stalls in the market are also visited, and on the busiest nights in the week an inspector is on duty continuously. On Saturday nights Mr. Schofield (veterinary surgeon) or his assistant are constantly visiting the stalls and inspecting the meat there exposed for sale.

FACTORY AND WORKSHOPS ACTS.

The inspection and maintenance in a satisfactory condition of the premises to which these Acts refer is carried out by an inspector appointed specially for this duty. There is an increase of 19 in the number of workshops this year on the register, and an increase of 48 bakehouses.

About 230 notices have been served for various defects found by the inspector, and most of these notices were complied with at the end of the year.

The same inspector visits the shops where young people are employed, for the purpose of regulating the hours of their employment under the Shop Hours Act.

The workshops added to the list during the year consist principally of cloggers and shoemakers, milliners, dress-makers, and tailors.

SMOKE NUISANCES.

Somewhat fewer observations have been taken this year owing to the inspector being required for district work.

The results of the observations show an increasing improvement, as in only 1·73 per cent., has the limit of four minutes black smoke in half an hour been exceeded, and 22·35 per cent. have been over three minutes, compared with 2·21 per cent. and 25·19 per cent. respectively in 1899.

Fifteen reports that the limit had been exceeded were made to the Health Committee, and in seven cases a prosecution was ordered. In the remainder excuses were made which the Committee deemed reasonable. Of the seven offenders brought before the Magistrates six were fined.

THE SALE OF FOOD AND DRUGS ACT.

During the year 127 samples have been taken; 72 of milk, 29 of butter, 18 of beer, and 8 of sundry groceries.

The adulterations in milk were—In four cases from 8 to 17 per cent. of added water, and in one case the abstraction of 26 per cent. of fat and the addition of 7 per cent. of water. Prosecutions were instituted and fines imposed in all these cases.

In Butter, margarine was sold instead of butter in one case, and the offender was fined. The other adulterations were due to an excess of water, varying from 2 to 4 per cent. above the average amount (18 per cent.) As no standard for the amount of water, which should be allowed in butter has been fixed, those who sold the samples were cautioned only.

The samples of beer were taken for the purpose of being analysed for arsenic. In two of these arsenic was found in moderate amount, and in three there was a very small amount only. No prosecutions were instituted against the beersellers.

One shopkeeper, whose assistant snatched back a sample of butter when he found for what purpose it was required, was proceeded against for refusing to sell, and also for obstructing the inspector. The assistant was fined £2, and the owner of the shop £15 and costs in both cases.

NIGHTSOIL AND ASHES DEPARTMENT.

During the year the erection of the two new refuse destructors has been practically completed, and in the course of a short time they will be ready for work. As was stated in last year's report, the waste steam will be used at one destructor for heating the water at the adjoining baths, and at the other to work an artificial flag-making plant which it is intended to erect. Each destructor consists of eight cells, constructed by Messrs. Horsfall & Co., of Leeds. The burning of the ashpit refuse, instead of depositing it in various tips, is a distinct gain to the town from a sanitary point of view.

During the year an Act of Parliament, promoted by the Oldham Corporation received the Royal Assent, empowering the Corporation to compulsorily convert the existing pan closets to the water or waste water system. This will probably also be an advance in the sanitary condition of the town, for while the clean water system is undoubtedly the best, the slop water system is a considerable improvement on the pan closet. In the poorer districts of the town it will, however, be necessary, if the system is to work satisfactorily, to organise a regular plan of inspection, and in some localities an almost daily visit will be necessary to keep the closets in a proper sanitary and working condition. As the householders become more accustomed to the use of these closets the supervision may be diminished, but at first many of the closets will be continuously out of order unless a constant supervision is exercised.

The cost of conversion, except when the existing closet is certified to be in an insanitary condition, is to be borne by the Municipal Authority.

At the formation of the new committees in November the duties of the Health Committee were re-arranged, and the control of the Nightsoil and Ashes Departments were handed over to the New Streets and Buildings Committee, henceforth to be called also the Sanitary Committee. While this change may equalise the work of the two Committees, ashpits and closets have such a close relation to public health that the removal of their control from the Committee which deals with, in other respects, the sanitary conditions in the town cannot be conducive to promptitude in dealing with nuisances arising from these places. Already several inconveniences have arisen from the alteration.

ARSENICAL POISONING FROM BEER.

About the month of November my attention was directed, by the large number of cases of arsenical poisoning from beer in neighbouring towns, to this question. In consequence I made inquiries of many medical men in the town, but only received reports of about a dozen cases supposed to be suffering from arsenical poisoning. On visiting these cases about 8 proved to be well marked cases, two had never been away from their work and I was unable to see them, and two or three exhibited the symptoms of alcoholism rather than those of arsenical poisoning. All of these recovered. No death was certified as due to any disease caused by arsenical beer. Only one death during the year was ascribed to peripheral neuritis, and this was in the early part of October. One death in January was attributed to Addison's disease.

During the months of October and November there was, however, a considerable increase in the number of deaths attributed to alcoholism and to cirrhosis of the liver, some of which were probably accelerated by the above cause. The following table indicates the deaths in the various quarters of the year from these diseases.

Deaths due to—	1st Quarter, 1900	2nd Quarter, 1900	3rd Quarter, 1900	4th Quarter, 1900	1st Quarter, 1901
Alcoholism	5	2	2	6	3
Cirrhosis of Liver ...	3	3	3	11	2

Towards the end of November I had samples of beer taken from various public houses representing every known brewery from which beer was sold in the town. Of these, five samples contained arsenic—two contained a considerable amount, three a very small proportion, and in the others no arsenic was found. The Companies supplying the contaminated beer were communicated with, and at once undertook the removal from their houses of all beer which had not been tested and certified as arsenic free.

Considering the number of cases of illness reported in neighbouring towns as due to this cause, Oldham has been exceptionally free.

A large quantity of beer was emptied into the sewers, which on one occasion completely demoralised the bacteria in the filter beds at the Sewage Works.

More recently samples of jam, honey, etc., have been examined for arsenic, but without finding any.

1870. The first of these was the "The Great West" by...

1871. The second was the "The Great West" by...

1872. The third was the "The Great West" by...

1873. The fourth was the "The Great West" by...

1874. The fifth was the "The Great West" by...

1875. The sixth was the "The Great West" by...

1876. The seventh was the "The Great West" by...

1877. The eighth was the "The Great West" by...

1878. The ninth was the "The Great West" by...

1879. The tenth was the "The Great West" by...

1880. The eleventh was the "The Great West" by...

1881. The twelfth was the "The Great West" by...

1882. The thirteenth was the "The Great West" by...

1883. The fourteenth was the "The Great West" by...

1884. The fifteenth was the "The Great West" by...

1885. The sixteenth was the "The Great West" by...

1886. The seventeenth was the "The Great West" by...

1887. The eighteenth was the "The Great West" by...

1888. The nineteenth was the "The Great West" by...

1889. The twentieth was the "The Great West" by...

1890. The twenty-first was the "The Great West" by...

1891. The twenty-second was the "The Great West" by...

1892. The twenty-third was the "The Great West" by...

1893. The twenty-fourth was the "The Great West" by...

1894. The twenty-fifth was the "The Great West" by...

1895. The twenty-sixth was the "The Great West" by...

1896. The twenty-seventh was the "The Great West" by...

1897. The twenty-eighth was the "The Great West" by...

1898. The twenty-ninth was the "The Great West" by...

1899. The thirtieth was the "The Great West" by...

REPORT OF CHIEF INSPECTOR, 1900.

RE CATTLE, MEAT AND OTHER INSPECTIONS.

To the Medical Officer of Health.

SIR,

Seeing that my remarks in last year's report were of an extended character regarding the importations of cattle, calves, sheep, and pigs intended for human food, it is not necessary on the present occasion to deal with the matter so fully again.

The drastic measures adopted in 1898 and 1899, of bringing to book officials of the railway companies for cruelty in overloading animals, and cattle dealers and butchers found in possession of carcasses unfit for human food, have been productive of much good, whereby fewer occurrences of this character have taken place.

Only two cases of cows arriving dead at the railway sidings have been found this year. In neither case could the trucks be said to be overcrowded. Both were recently calved cows intended for dairy purposes and consequently in a weakened condition, and they ought not to have been sent on long railway journeys.

I reported the first case to the Royal Society's Officer, but the Society did not see their way to take any action on his report. The owner in the second case attempted unsuccessfully to get compensation from the railway company for alleged negligence in carrying.

The numerous accidents occurring in the transport of pigs from Ireland is a source of great loss to the dealers importing them, 23 carcasses being inspected and destroyed as unfit for human food.

I consider much credit and praise is due to the pork butchers in the town, for their readiness in reporting, and their willingness to have inspected, and free surrender of whatever may be considered as unfit for preparation for human food. A similar spirit has been manifested by those dressing for sale the carcasses of cattle, calves, and sheep: the greater proportion of the 11,137 lbs. of unsound food destroyed being given up voluntarily.

During the year I have had occasion to complain to the Inspectors of the surrounding Urban District Councils of carcasses of cows being dressed on farm premises, which were likely to find their way by devious routes into the nearest large towns.

Two prosecutions have followed and cautions have been administered, resulting in a check being put on this trafficking and dressing of beasts under suspicious circumstances, and in the carcasses being sent where they were most fitted for, to the knacker's yard.

If every local authority would resolutely put a ban on this practice, and prosecute the offenders for so using their premises, unless giving notice so that due inspection could be made, we should hear less of this dealing in smuggled carcasses.

I know from personal knowledge that there are many honourable farmers who will have no dealings with that cheap class of butcher who scours the country for the purpose of picking up dead or dying cows, and who prefer to have a recognised knacker's cart coming for anything they are so unfortunate as to lose.

I believe that Inspectors with large agricultural areas could do much in stopping this traffic if they would give such advice to farmers, and see that it was acted upon.

In the inspections of the slaughter-houses and the markets nothing of a serious or flagrant character has been found calling for seizure or prosecution, the quality of the meat offered for sale being usually good, and quite comparable with what may be found in most large towns.

I am pleased to say that no outbreak of contagious disease amongst animals has been notified during the year.

The appended table specifies the nature of the various articles destroyed, amounting, as previously stated, to 11,137 lbs. in weight.

In the accompanying tables, tabulating the records of work performed by your staff of Inspectors, it may be noticed that, while there are diminutions in some figures, others show that increased work has been performed by the staff.

This is especially seen in the extra number of visits to cases of notifiable disease, 2,940 visits having been made as against 2,371 in the previous year.

Following in the wake of these visits, 635 patients have been removed to the hospitals as against 443 in 1899, or 192 more.

Innumerable visits to cases of measles, &c., returned by the teachers of the various day schools, have been made; and visits to deaths under one year of age, and from phthisis, make up another 834 visits. In addition, visits to 50 cases of diarrhœa have been made; and circulars served on ice-cream vendors, farmers, and milk dealers, *re* milk supplies, make another total of 636.

Another item trenching much on the time of your Inspectors' ordinary work, is to be found in the increased number of milk samples purchased during the year, several of these having to be followed up into country districts, involving long journeys by railway, and usually necessitating the absence of two assistants for a day or more from their regular district duties.

I think it necessary to summarise these instances of increased work to show that, as Health Officers, our duties have first to be given to the unfortunate victims of infectious disease, and to observe that remedial measures for annoyances and nuisances discovered—often in no way having any connection with infectious visitation—must necessarily wait due legal notices for attention and abatement.

Notwithstanding these drawbacks a great amount of valuable work has been accomplished in abatement of nuisances from blocked drains, reconstructions to drainage, and ventilating and trapping of waste and slopwater pipes and water closets.

Supervision has also been given to numerous properties, where over 3,000 yards of drainage pipes and channel tiles have been laid, including the fixing of 535 traps, and the connection by improved drainage of 137 houses with the main sewers.

Considerable attention has further been given to complaints of damp and dirty houses, defective cellars, insufficient supply of water to houses, defective ventilation, privy and ashpit nuisances, and some few exceptional cases of overcrowding.

The regular and frequent inspections of Bakehouses, Dairies, Cowsheds, Farms, Pigsties, Slaughter-houses, and places where offensive trades are carried on, have been so closely followed that few causes for complaint have been found.

The mill-lodge nuisances, which used to be a source of much trouble, have been so far abated that only 16 notices have required to be served during the past year.

Our usual action in placing properties under notice for reconstruction and trapping of offensive drains has been stayed in a certain measure by the numerous statutory notices issued requiring back passages to be sewered with a view to the adoption of the waste water and other water carriage systems.

Probably from occasional defective fixing of closets, but more frequently by improper use of them by householders, a great number of complaints have come to hand, 389 requiring attention from blockages.

A prominent notice plate, with white enamelled letters, should be fixed in each closet, warning the tenants against improper usage.

Having but imperfectly outlined these various phases of our work, I must leave further conclusions to be drawn from the different Tables, indicating as they do continuous activity on the part of your staff in dealing with their specially allotted duties, and all working unitedly for one common object, viz. : the health and welfare of the public.

In conclusion, I wish to express my personal thanks for the ready and willing help which all of my Assistant Inspectors have given whenever called upon—either early or late, and to thank you likewise on their behalf for that confidence and trust which makes it a pleasure in sometimes doing beyond regular office hours that which frequently becomes necessary.

I remain,

Your obedient Servant,

THOMAS RUSHWORTH,

Chief Sanitary Inspector.

N.B.—The following carcasses, etc., were destroyed during the year 1900 at the destructor, amounting to about 11,137 lbs.:—

23 Pigs.
 2 Sheep.
 21 Turkeys.
 1 Dead Foal.
 Unsound Bellies (weighing 4,872 lbs.)
 7 Calves
 Unsound Meat, Lungs, Fat, Tongues, etc.
 (weighing 427 lbs.)
 2 Dead Cows.

Also 6 Cows were sent to Knackers' yards.

TABLE No. 24.

HOUSE TO HOUSE INSPECTION.

Total Houses Inspected, 709.

Houses without Back Doors	214
„ with Defective or Stone Drainage ...	89
„ „ Slopstone Pipes connected ...	25
„ „ Defective Ventilation	64
„ „ Defective Cellars	6
„ Dirty	121
„ Suspected of Over-crowding	24
„ Damp	98
„ near Manure Heaps	65
„ „ Slaughter Houses	16

TABLE No. 25.
DAIRIES AND MILK SHOPS.

District.	No. on Register 1899.	No. Discontinued, 1900.	No. Registered, 1900.	No. on Register, 1900.	Farms *	Cases of Sickness.					No. removed to Hospital.	Treated at Home.
						Smallpox	Scarlet Fever	Typhoid Fever	Diphtheria	Erysipelas		
No. 1 ...	101	20	21	102	...	...	3	...	...	2	...	5
„ 2 ...	60	9	8	59	14	...	...	...	...	...	...	...
„ 3 ...	52	9	14	57	16	...	5	...	...	...	4	1
„ 4 ..	42	5	9	46	1	...	4	...	...	...	1	3
„ 5 ...	32	12	16	36	48	...	2	...	...	...	1	1
Totals ...	287	55	68	300	79	...	14	...	...	2	6	10

* Farms Visited by District Inspectors shown in their Report.

No. of Visits Paid	..	...	...	..	...	...	...	..	...	...	...	1020
No. of Notices Served	.	...	...	..	...	...	...	...	...	...	...	41
No. of „ Complied	...	...	...	...	...	...	...	...	...	...	...	34
Re-inspections of work in progress or under notice	...	...	...	...	...	...	...	...	...	...	...	130
Miscellaneous Visits (to Owners or Agents, etc.)	...	...	...	...	...	...	...	...	...	...	...	30

Nature of Defects.	Notices Served	Notices Complied
Houses Repaired	2	2
Dirty Houses	7	7
Damp, Defective Roof, etc.	11	10
Defective Ventilation	1	1
Defective Water Supply	1	1
Defective Cellars	1	1
Yards and Passages repaired and flagged	3	3
Directly connected with Sewer	2	2
Untrapped Drains	9	6
Defective Drains	11	8
Defective or Short Slop Pipes	3	3

6 Gully traps have been fixed and 26 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 1899-1900.

Fortnight ending		SMOKE OBSERVATIONS.		MILL LODGES INSPECTIONS.		SLAUGHTER-HOUSES INSPECTIONS.	
1899.	1900.	1899.	1900.	1899.	1900.	1899.	1900.
Jan. 7	Jan. 6...	32	16	121	88	142	159
„ 21	„ 20...	37	14	95	159	174	191
Feb. 4	Feb. 3...	64	29	183	196	140	200
„ 18	„ 17...	60	21	112	89	204	164
Mar. 4	Mar. 3...	40	31	94	265	150	159
„ 18	„ 17...	...	33	197	101	179	214
Apr. 1	„ 31...	72	25	161	260	184	210
„ 15	Apr. 14...	55	27	63	65	160	200
„ 29	„ 28...	63	45	202	220	171	118
May 13	May 12...	45	49	108	110	169	174
„ 27	„ 26 ..	52	35	153	157	121	211
June 10	June 9...	77	49	80	190	179	201
„ 24	„ 23...	64	38	196	229	159	237
July 8	July 7...	57	44	161	163	214	211
„ 22	„ 21...	26	29	185	99	177	183
Aug. 5	Aug. 4...	25	40	95	115	194	174
„ 19	„ 18...	15	27	167	120	153	213
Sep. 2	Sep. 1...	21	12	146	225	123	178
„ 16	„ 15...	19	18	124	112	203	211
„ 30	„ 29...	51	51	194	242	135	196
Oct. 14	Oct. 13...	56	62	105	109	223	203
„ 28	„ 27...	50	49	261	218	211	215
Nov. 11	Nov. 10...	41	32	121	139	208	169
„ 25	„ 24...	49	23	181	157	189	170
Dec. 9	Dec. 8...	20	28	125	120	194	175
„ 23	„ 22...	40	41	226	191	228	202
Totals		1131	868	3856	4139	4584	4938

TABLE No. 27.

HALF-HOURLY SMOKE OBSERVATIONS,
taken from December 24th, 1899, to December 22nd, 1900.

Total Observations taken.	No Black Smoke.	Under 1 Minute.	Under 2 Minutes.	Under 3 Minutes.	3 and 4, both inclusive.	Over 4 Minutes.
868	115	165	204	175	194	15
Percentage ...	13·25	19·00	23·50	20·16	22·35	1·73

TABLE No. 28.

NATURE OF SMOKE APPLIANCES IN USE IN THE
BOROUGH OF OLDHAM, 1900.

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.	5	15
Meldrum Bros.' Forced Draught Furnace	6	6
Granger's do. do. ...	1	1
Wilton's do. do. ...	1	5
Broadbent's Louvre Air Regulators... ..	18	59
Broadbent's Steam Pokers	1	6
Tweedale & Massey's Air Regulators ...	1	2
Caddy's Induced Draught Furnace	4	14
Caddy's Tubular Bars	7	21
Yates & Thom's Rocking Bars	5	11
Butterworth's Sectional Bars	5	17
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	3	11
	75	220

Where no Appliances are fixed—94 Mills ; 212 Boilers. There are also about 70 Workshop Chimneys not on books.

TABLE No. 29.
LIST OF FIRMS REPORTED TO SANITARY COMMITTEE DURING THE YEAR 1900.

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.	in.				
‡ Pearl	Netherhey Street...	5	30	8	0	110	4	Wilton's Forced Draught-Furnace.	Fined 20/- and Cost
Holyrood	Windsor Street ...	{ 2	30	7	6	70	4	Broadbent's Air Regulators	Fined 20/- and Cost
Alexandra	Acre Lane	{ 2	30	8	0	180	6	Do. Do.	Fined 10/- and Cost
Henshaw Street...	Henshaw Street ...	4	30	7	6	64	4	No Appliances.....	Fined 10/- and Cost
Featherstall	Chadderton Road...	3	30	7	6	35	2	Do.	Fined 5/- and Cost
Granville.....	Prince Charlie St...	5	30	7	0	75	4	Do.	Notice Served
North Street	Grosvenor Street...	1	28	7	0	17	1	Do.	Cautioned by Committee
Galloway	Derker Street	4	30	8	0	100	4	Do.	Do.
Wellington	Wellington Street..	2	30	7	0	30	2	Do.	Do.
* Moorhey	Moorhey Street ...	3	28	7	0	37	2	Do.	Do.
Bank Top No. 1...	Edmund Street ...	2	30	7	6	34	2	Do.	Do.
Summervale	Back Thomas St....	5	30	8	0	112	4	Hollow Bridge Walls	Do.
Alma	Scott Street.....	4	30	8	0	56	3	Whittle's Steam Injectors.....	Dismissed

‡ Fined 20/- and Costs on 2 occasions.

* Cautioned on 2 occasions.

TABLE No. 30.

SMOKE PROSECUTIONS DURING 1900.

No. of Firms Fined.	Amount of Fine.	No. of times previously prosecuted.
1	20/- and Costs	8
1	20/- „	7
1	20/- „	2
1	10/- „	13
1	10/- „	8
1	5/- „	0
1	Case dismissed	6

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	...	...

* Excess Water

TABLE No. 32.

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

No. of Workshops on Register December, 1899	...	...	...	350
„ „ Discontinued during 1900	...	...	...	28
„ „ Registered during 1900...	...	...	...	47
„ „ on Register December, 1900	...	...	...	369
„ „ Reported to Factory Inspectors	...	...	...	47
„ Visits Paid	..	...	...	1580
„ Notices Served	...	...	...	149
„ „ Complied	...	...	...	126
Re-Inspections of Work in Progress or Under Notice	...	...	...	360
Miscellaneous Visits (to Owners, Agents, &c.	...	...	...	86

Nature of Defects.	Notices Served.	Notices complied.
Workshops Repaired	6	6
Dirty Workrooms	50	50
Damp, Defective Roof, &c.	14	13
Defective Ventilation	17	16
Defective Water Supply	3	3
Defective Cellars	4	4
Overcrowding	1	1
Insufficient or no Closet Accommodation	16	15
Defective W.c.'s	4	3
Privy Nuisances	17	17
Untrapped Drains	14	10
Defective Drains	13	11
Defective or Short Slop Pipes	3	3
Directly connected with Sewer	5	4
Accumulations of Offensive Materials	16	16

10 Gully Traps have been fixed and 50 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, 1899	..	...	...	...	279
„ „ discontinued during 1900	...	...	...	...	7
„ „ registered during 1900	...	...	...	...	55
„ „ on Register, December, 1900	...	...	...	...	327
„ Visits paid	...	...	...	...	1148
„ Notices served	...	...	...	...	87
„ „ complied	...	...	...	...	79
Re-inspections of work in progress or under notice	...	...	...	...	240
Miscellaneous Visits (to Owners, Agents, etc.)	...	...	...	...	52

Nature of Defects.	Notices Served	Notices Complied
Bakehouses Repaired	6	6
Dirty Bakehouses	18	18
Damp, Defective Roof, etc.	16	15
Defective Ventilation	8	8
Accumulations	6	6
Defective Cellars	3	3
Directly connected with Sewer	4	4
New Water Closets Provided	2	2
Defective Closets	1	1
Untrapped Drains	8	6
Defective Drains	14	11
Defective or Short Slop Pipe	6	5

6 Gulley Traps have been fixed, and 26 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	78	30	11	11	11	15	27	46	8	8	1
„ 2	63	19	8	9	14	13	19	39	5	2	2
„ 3	70	14	19	19	6	12	10	46	16	6	1
„ 4	48	17	4	15	5	8	16	27	7	1	1
„ 5	68	23	17	6	8	13	16	30	4	...	1
Totals	327	103	59	60	44	61	88	188	40	17	6

TABLE No. 34.

MAGISTERIAL PROCEEDINGS, 1900.

No. of Cases.	Particulars of Complaint.	How Disposed of.	Penalties.			
			£	s.	d.	
7	Smoke Nuisance	Three fined 20/- and costs; two 10/- and costs; one 5/- and costs; and one dismissed	4	5	0	
5	Milk Adulteration	One fined 40/- & costs; three 20/- and costs; and one 10/- and costs	5	10	0	
2	Obstructing Inspectors in the discharge of their duties, under the Food and Drugs Act	One fined £10 & costs; and one 40/- & costs ...	12	0	0	
1	Refusing to sell a sample of Butter	Fined £5 and costs	5	0	0	
			£	26	15	0

INSPECTORS' REPORTS.

Total Number of Reports of Nuisances and Notices Served	3213
Total Number of Notices complied with	2453
Total Number do. do. Order of Committee ...	578
Number of Complaints Received and Visited	1125
Re-Inspection of Nuisances under Notice	11565
Number of Cases dealt with by Sanitary Committee	656
Number of Cases remaining unabated	78
Number of Cases dealt with by the Magistrates	15

House-to-House Inspection	709
Total Number of Houses Inspected on Complaint	540
Houses Repaired... ..	100

	Notices Served.	Notices Complied with
Dirty Houses	235	241
Damp, Defective Roof, &c.... ..	1080	973
Defective Ventilation	49	43
Defective Cellars	102	60
Privy Nuisances	1005	968
Ashpits	81	52
Defective Water Supply	167	135
Overcrowding	14	12
Unfit for Habitation	2	2

DRAINAGE DEFECTS.

	Notices Served.	Notices Complied with
Blocked Drains	628	556
Defective Drains... ..	591	499
Gully Traps improperly laid	4	2
Drain inlets untrapped or defectively trapped... ..	502	537
Waste Pipes and Sloppipes directly connected with drain	67	39
Waste Pipes improperly trapped	6	5
Slop Pipe, defective or improperly ventilated... ..	245	207
Defective Water Closets	38	27
Defective Waste Water Closets... ..	389	389
New Water Closets Provided	46	49

No. of Smoke or other Tests, 392. No. of Houses Tested, 739.
 No. of Defects found, 315. 3045 yards of Channel Tiles and Drainage
 Pipes have been laid or re-laid during the year.
 Traps fixed, 537. Ventilating Grids, 21.
 Houses connected with Main Sewer, 127.

	Visits Paid.	Notices Served.	Notices Complied with
Bakehouses	1301	88	82
Dairies and Cowsheds	1593	41	47
Farms	266	16	9
Pigsties	2043	3	3
Slaughter Houses	4938	14	14
Offensive Trades	1113	4	4
Mill Lodges	4139	16	16
Factories and Workshops	1679	149	127

Inspection under Contagious Diseases (Animals) Act ... ..	...	...	...	...	...
Animals destroyed ... ..	...	...	...	...	34
Unsound Food: Meat, Fish, Fruit, &c., destroyed ...	2	14	0		25
Samples taken under Food and Drugs Act ... ..	...	...	...	...	125
Letters written to Property Owners or Agents, &c. ... ..	...	...	...	...	57
Miscellaneous Visits, &c ... ..	...	...	...	...	2847
Privies inspected ... ..	...	...	...	...	9613
New Privies built .. ..	...	...	...	...	27
Ashpits built, or new Ashcans provided ... ..	...	...	...	...	34
—					
Yards and Passages Repaired and Flagged ... ..	...	...	...	...	112
Erections in Yards reported ... ..	...	...	...	...	9
Defective Urinals ... ..	...	...	...	...	30
Accumulation of Offensive Matter ... ..	...	...	...	...	331
Carcases of Animals in Water ... ..	...	...	...	...	29
Stagnant Water ... ..	...	...	...	...	40
Manure Heaps ... ..	...	...	...	...	57
Manure Pits built ... ..	...	...	...	...	2
Poultry in Houses ... ..	...	...	...	...	54
Dust and Fly from Mills ... ..	...	...	...	...	5
Low or Defective Chimneys ... ..	...	...	...	...	16
Dangerous Places reported... ..	...	...	...	...	44
Coal Gas Nuisances and Escapes reported ... ..	...	...	...	...	7
Dead Bodies removed to Mortuary ... ..	...	...	...	...	26
—					
Visits to Cases of Infectious Diseases ... ..	...	...	...	...	2940
Visits to Cases of Phthisis .. ..	...	...	...	...	205
Visits to Deaths under 1 year of age .. ..	...	...	...	...	629
Cases removed to Hospital... ..	...	...	...	...	635
Houses Stripped or Cleansed after Infectious Disease ... ..	...	...	...	...	9
Visits to cases of Diarrhœa ... ..	...	...	...	...	50
Visits to Ice Cream Vendors ... ..	...	...	...	...	63
Circulars served on Ice Cream Vendors ... ..	...	...	...	...	51
" " Farmers <i>re</i> Milk supply ... ..	...	...	...	...	233
" " Milk Dealers <i>re</i> Milk supply ... ..	...	...	...	...	283

HOUSES AND CLOTHING DISINFECTED.

Number of Houses Disinfected during the year ... ..	...	...	...	...	1256
Number of Rooms do. do. do. ... ..	...	...	...	...	3173
Number of lots of Clothing Disinfected during the year ... ..	...	...	...	...	1208
Number of Articles do. do. do. ... ..	...	...	...	...	13976
Number of Articles destroyed do. do. ... ..	...	...	...	...	154

CLOTHING, &c., 1899-1900.

Articles.	Disinfected.		Destroyed.		Totals.	
	1899.	1900.	1899.	1900.	1899.	1900.
Blankets	1395	2019	...	2	1395	2021
Sheets	934	1174	4	3	938	1177
Pillows	1775	2209	23	11	1798	2220
Bolsters	836	1148	10	3	846	1151
Quilts.....	1158	1636	2	2	1160	1638
Mattresses	18	32	75	58	93	90
Beds	1068	1362	56	62	1124	1424
Carpets	35	23	10	5	45	28
Rugs	50	100	1	1	51	101
Curtains.....	28	25	...	..	28	25
Clothes	2902	3620	15	6	2917	3626
Sundry Articles ...	356	474	8	1	364	475
	10555	13822	204	154	10759	13976

INFECTIOUS CASES, 1899-1900.

(CASES AND VISITS).

Number of Cases	...	...	...	...	...	1899.	1900.
Number of Visits	...	...	...	...	...	998	1347
Number of Visits to Cases of Phthisis	...	...	...	...	...	2371	2940
						165	205

NIGHTSOIL AND ASHES DEPARTMENT, 1900

Number of Sanitary Pans in the Borough	...	...	...	...	...	23610
Do. Cesspools, &c., in the Borough	...	...	...	...	...	37
Do. Water Closets	do.	...	...	...	...	2254
Do. Waste-water Closets	do.	...	...	...	...	2344
Do. Trough Closets	do.	...	...	...	...	407
Do. Ashpits	do.	...	...	...	...	10213
Do. Ash Cans, &c.	do.	...	...	...	...	3420
Do. Houses	do.	...	...	...	...	32881
Do. Mills, Workshops, &c.	do.	...	...	...	...	539
Do. Churches, Schools, &c.	do.	...	...	...	...	199

NIGHTSOIL DEPARTMENT.

Number of Sanitary Pans Emptied during the night	...	...	...	...	...	1266660
Do. Iron Tanks, Cesspools, &c., Emptied during the night	...	...	...	...	...	130
Do. Collections of Butchers' Offal during the night	...	...	...	...	...	4448
Do. do. Fish Offal	do.	...	...	...	...	12246
Do. Loads of Excreta collected	...	...	...	...	...	13348
Do. do. Butchers' Offal collected	...	...	...	...	...	739
Do. do. Fish Offal collected	...	...	...	...	...	724
Do. do. Shoddy Dirt collected	...	...	...	...	...	5432
Do. Tons of Manure sent out from Higginshaw	...	...	...	...	...	16835
Do. do. do. Bower Clough	...	...	...	...	...	6830
Total Number of Tons sent out	...	...	...	...	...	23665

ASHES DEPARTMENT.

Number of Ashpits Emptied during the day	...	...	...	...	...	41139
Do. Ash Cans	do.	do.	...	...	...	176585
Do. Loads of Ashes taken to Destructor	...	...	...	...	...	16288
Do. do. do. Corporation Tips	...	...	...	...	...	15696
Do. do. do. elsewhere	...	...	...	...	...	4828
Do. do. Clinkers removed from Destructor	...	...	...	...	...	6208
Total No. of Loads removed	...	...	...	...	...	43020

RHODES BANK DESTROYER.

Quantity of Ashes, Fish Offal and Garbage consumed	...	Tons	Cwt.
	...	18893	0
Average per Furnace per day of 24 hours	...	8	6 $\frac{1}{4}$
Quantity of Mortar Sold...	...	1228	0

APPENDIX.





COUNTY BOROUGH OF OLDHAM.

THE TREATMENT
OF
OLDHAM SEWAGE,
IN THE YEAR 1900.

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

Town Hall, Oldham.

THE UNIVERSITY OF CHICAGO

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THE TREATMENT OF SEWAGE.

During the past year the Purification of Sewage has been carried on in the same manner as in the latter part of 1899—viz., by Sedimentation Tanks and Bacteria Beds. The method has been improved, and considerable expense saved by the Detritus tanks, which started work in July, and which intercept almost all the sand and ashes which has caused such inconvenience in the tanks in previous years. All the sewage passes through the detritus and settling tanks, thus relieving it of a greater part of the impurities and matter in suspension, but owing to the insufficiency of bacteria beds only a portion can be treated completely. With the exception of a few days during the year, when the weather was very dry, the method has been entirely successful, and the samples of effluent, on analysis, have been found below the Mersey and Irwell standard.

The tank effluent, which has not been treated bacterially, of course exceeds this standard, though much of the impurities have been removed.

Additional filter beds are being constructed, and in the course of a few months a much greater area of these beds should be in use.

A clinker crushing and screening machine is being erected in connection with one of the destructors, and I have suggested the trial of the coarse clinker for filling the beds. Though probably not so porous a material as the mill ashes previously used, I have every confidence that they will prove satisfactory, and by saving the hand screening and the necessity for finding tips for the clinker will result in considerable economy.

No precipitants have been used during the year, though lime requires to be mixed with the sludge before pressing.

I am convinced that a great deal of the success of the treatment during the year has resulted from the regular and accurate analyses conducted by Mr. Wylie, who furnishes me with the following report. The accuracy of his analyses may be tested by comparing the results obtained by him and those obtained by the analyst of the Mersey and Irwell Board :—

Sewage.

The general character of the sewage has not changed during the year. The average amount of albuminoid ammonia present has been .66 of a grain per gallon. On some occasions it has amounted to as much as 1.22 grains per gallon.

The average amount of chlorine present has been 6.5 grains per gallon, and the largest individual quantity noticed has been 18.4 grains per gallon.

On December 17th a large quantity of beer was emptied into the sewers by some Brewery Company, the effect of this on the filters is recorded further on.

The new Detritus tanks and machinery were brought into use on July 19th, and have fulfilled all expectations. Owing to the position in which they had to be placed, they are not quite as large as could be desired. There are two pits, each 45ft. long, 12ft. wide, 6ft. 8in. deep at the water level. Each pit is fitted with two sets of screens (coarse and fine), and rakes. The bottom of each pit is fitted with a revolving worm, which pushes the solids deposited towards the two dredgers. These dredgers lift the solids from the pits and drop them into small trucks. Sewage.

In the bottom of each pit there is a valve, which is opened in order to run off the sewage when it is necessary to clean the pit out.

The machinery is worked at intervals during the day and night.

Since it has been brought into use it has dealt with all the sand and ashes which formerly would have been deposited in the settling tanks, thus saving a great deal of time and labour, as this material had all to be wheeled out in barrows. The saving in wages alone amounts to £130 per annum.

The tank effluent has, like the sewage, not varied much from last year. The same difficulty has been experienced in purifying it during the hot summer months. Tank Effluent

From the experience gained during the last four years, the same trouble is anticipated every summer unless the settling tanks can be cleaned out oftener, so that the tank effluent can be kept of a uniform strength all the year round.

Experiments which have been carried on show that filters (bacteria beds) should be supplied with a tank effluent of uniform strength.

Tank Effluent

Filters that have been accustomed to a weak and non-septic tank effluent will not deal with a highly septic tank effluent at once, it takes a considerable time before they will turn out a filtrate which will not putrify in the incubator. On the other hand, filters which have been dealing with a septic effluent will not effectually purify a weak and non-septic tank effluent.

This at a first glance may seem strange, but it is a fact, and I believe that Mr. Fowler has had the same experience at the Manchester Sewage Works.

The additional sludge presses which are being put down will, no doubt, assist greatly in this matter.

The average amount of albuminoid ammonia present in the tank effluent has been .27 of a grain per gallon.

Filters.

During the past year the filters have worked as efficiently as in 1899, and show no serious signs of clogging up.

Although the strength of the sewage has been almost the same, the amount of purification effected has been slightly increased. This shows that the filters have not only maintained but have slightly increased their power of purification with no serious diminution of capacity.

I am of the opinion that with careful management this power will be maintained, if not actually improved on in the future.

The average percentage of purification effected during the year has been 83.6 per cent. In 1899 it was 82 per cent.

During the summer of 1899 the filters had to be eased in their work occasionally, owing to the septic condition of the tank effluent, but during the present year they have dealt with two fillings per day (Sundays excluded), although on a few occasions they have infringed the standard of 1 grain of oxygen per gallon.

The filters commence to fill at 7 a.m., the time of filling each filter is from 30 to 40 minutes, but this all depends upon the quantity of sewage coming down. If the tank effluent was rushed on to the beds they could be filled much quicker, but I do not think that there is anything to be gained by doing so. I think that the rate of filling and emptying in all cases should be kept as uniform as possible, so as to avoid disturbing the bed by sudden changes. Filters.

Each filter is kept full for three hours. It is then run off steadily, this occupies about two hours. The filters then remain empty for at least two hours before their next filling. Each bed has two fillings per day. The quantity filtered is about 100 gallons per square yard, or about 484,000 gallons per acre.

From January 22nd until May 25th, No. 1 Filter was filled three times per day (two hours contact each filling), and the other filters only twice.

The quality of the filtrate from No. 1 was not much worse than in the case of the filters which had been filled twice per day. Fifteen samples from No. 1 were incubated, of these 13 became putrid, and two kept good; 16 samples taken from a filter which was only filled twice per day were incubated, of these 9 became putrid and 7 kept good.

All these samples were taken towards the end of each week, and most of them were suspected at the time they were put in.

The inference drawn from this is that under this method of working the filters (*i.e.*, with a non-septic tank effluent) two fillings per day is sufficient in order to turn out a satisfactory filtrate.

From June 25th to September 20th No. 1 filter was filled twice per day, the same as the other filters, but it only remained full for one hour each filling; the other filters were full for three hours.

Filters.

On comparing the daily results it appears that the extra two hours which the other filters rested full improved the quality of the filtrate; in a great many cases when No. 1 filtrate was over one grain of oxygen absorbed per gallon, the filtrate from the other filters was reduced to considerably under this standard.

Twenty-three samples from No. 1 were incubated; of these 17 kept good, four became putrid, and two were doubtful.

From one of the other filters, of 23 samples incubated 20 kept good and three became putrid.

From these results it appears that in the case of the Oldham Sewage a long period of contact is conducive to a better filtrate than a short contact.

Nitrification takes place satisfactorily. No quantitative tests were made during the year, but a daily qualitative test was made.

On the 17th December an unusual experience occurred in the presence of a large quantity of beer in the sewage. The effect of this was to send the tank effluent oxygen figure up to 9.24 grains per gallon. The corresponding filtrate absorbed 3.03 grains per gallon. Nitrification ceased for five days in the filters which had dealt with this beer effluent. This filtrate went putrid in the incubator.

State of body of Filters.

No. 1 filter on being opened up in two places shewed no serious signs of filling up, but it appeared to be more solid than a newly made filter, at the same time being quite porous. The ashes showed no signs of crumbling, there was no smell except an earthy one, the under drains were quite clean. Here and there amongst the large clinkers round the drains there were small accumulations of thin mud of a black colour, but this had no offensive smell.

Wince Brook.

Samples from the Brook were taken occasionally, before it reaches the works and after it leaves, having received the addition of the Oldham effluent. The results are as follows:—

OXYGEN ABSORBED—Four Hours Test; Grains per Gallon. Wince Brook.

	May 24	June 28	July 5	July 18	July 26	Aug. 14
Before Reaching Works.	2.50	2.55	1.77	2.77	8.52	4.00
After Leaving Works.	1.35	1.77	2.00	2.00	4.00	3.57

These figures show that an improvement is effected by the addition of the effluent.

The reason for taking these samples was that complaints had been made to the effect that the state of the brook when it reaches Middleton was due to the presence of the Oldham effluent. In all cases shown except one it will be observed that a sample taken from the brook after it has passed the works and has received the effluent, shows that it has been improved. When all the tank effluent is filtered there should be a very great improvement visible in the state of the brook.

The following list shows the results of the analysis of the samples taken by the Inspectors of the Mersey and Irwell Joint Committee during the year.

OXYGEN ABSORBED—Grains per Gallon; Four hours Test.

DATE.	<i>Oldham Corporation Results.</i>		<i>Mersey and Irwell Joint Committee's Results.</i>	
	Tank Effluent.	Filtrate.	Tank Effluent.	Filtrate.
March 13th	2.71	.90	2.63	.75
June 21st	1.66	.52	1.61	.40
July 11th	2.44	none taken	3.22	none taken
September 5th ...	3.13	.78	2.82	.80
December 5th ...	1.06	.45	1.00	.55

B and C
Filters

These two filters were numbered 12 and 13 in the last report. Each of these filters has continued to work satisfactorily. In order to give the open septic tank system a trial, two small filters were constructed close to B and C at such a level that the filtrate from B and C would flow into them. One of these filters (D) was composed of ashes similar to the other filters. The other filter (E) has a bottom layer of ashes usual size, and a top layer of fine ashes $\frac{1}{8}$ " screenings. Each filter is 3 ft. deep, and is underdrained by two rows of 9" land tiles. It may be briefly stated here that the experiment has been successful so far, and a detailed report of the work done will be shewn in the next annual report.

Sludge

The following list shews the amount of pressed sludge turned out during the year.

The amount is considerably smaller than in 1899, but this is accounted for by the fact that a large quantity of liquid sludge was pumped into the valley to dry as it would have taken too long to press it.

	WEIGHT OF PRESSED SLUDGE.				WEIGHT OF LIME			
	Tons	Cwts.	Qrs.	Lbs.	Tons	Cwts.	Qrs.	Lbs.
January	297	13	0	14	17	17	1	0
February	389	16	3	14	19	7	0	0
March	392	19	1	14	17	17	0	0
April	422	13	1	6	19	8	2	0
May.....	295	6	1	0	13	10	1	0
June	385	18	3	0	12	19	0	0
July	316	8	0	14	17	6	2	0
August	239	16	3	24	14	10	2	0
September ...	271	17	2	0	17	1	2	0
October	307	16	1	0	17	1	2	0
November ...	262	10	0	0	11	16	2	0
December ...	260	18	3	0	14	6	3	0
Total ...	3843	15	1	2	193	2	1	0
Weight of sludge and lime pressed during the year	3843	15	1	2				
Weight of lime used for pressing during the year	193	2	1	0				
Net weight of sludge pressed	3650	13	0	2				

The total number of gallons of sewage treated for the year ending October 1st, 1900, as recorded by the gauge, was 1,431,962,891 gallons, or an average flow of about 4,000,000 gallons per day. The total expenditure incurred was £2572 9s. 7d.

Total flow of
Sewage.

The cost of purification per million gallons was a fraction over £1 16s. 11d.

The amount treated by filtration daily was 1,705,550 gallons.

Excavation for the new filters was commenced on May 14th, and steady progress has been made, two filters being completed and brought into use by the beginning of September.

Progress of
new work.

Five other filters are either ready for being filled with ashes or are partially filled, so that by the end of the summer of 1901 there should be a considerable increase in the quantity of tank effluent filtered.

No. 1 FILTER.

Area 118ft. by 89ft. 10in. by 2ft. 9in. = 1178 sq. yds. Capacity 60,121 gals.

Filled for the first time in September, 1897.

Grains of Oxygen absorbed per Gallon.—Four Hours Test.

MONTH	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave for Year
Sewage	3.08	3.00	3.69	4.41	3.86		3.61	3.40	3.78	3.39	2.90	4.45	3.60
Tank Effluent	1.43	1.34	1.98	1.90	2.07	Resting	2.06	2.31	3.04	2.08	1.66	2.07	1.99
Filtrate .....	.33	.27	.68	.77	.88		1.15	.87	.88	.51	.33	.62	.66
Percentage of Purification from Tank Effluent to Filtrate ...	76	80	66	59	57		44	63½	71	75	80	71	67½
Total Percentage of Purification from Sewage to Filtrate	89	91½	81½	85	77		68	74	76	85	88	86	82

The average amount of albuminoid ammonia present was .12 of a grain per gallon. This Filter has had 24 days rest during the year.

NOTE.—All the filters rest from 8 p.m. on Saturday until 6 a.m. on Monday.

This rest is not included in the amount of rest recorded to each Filter.

No. 2 FILTER.

Area 139 ft. by 89 ft. by 2ft. 9in. = 1374 sq. yds. Capacity 70,138 gals.

Filled for the first time on October 18th, 1897.

Grains of Oxygen Absorbed per Gallon.—Four Hours Test.

MONTH	Jan	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg. for Year
Sewage ...	3.08	3.00	3.69	4.41	3.86	4.07	3.61	3.40	3.78	3.39	2.90	4.45	3.63
Tank Effluent	1.43	1.34	1.98	1.90	2.07	2.12	2.06	2.31	3.04	2.08	1.66	2.07	2.00
Filtrate ...	.36	.29	.53	.63	.70	.70	.71	.64	.70	.50	.36	.52	.55
Percentage of Purification from Tank Effluent to Filtrate ...	74	77	74	66	66	67	66	72	77	76	78	74	72
Total Percen- tage of Puri- fication from Sewage to Filtrate	88	90½	86	85	82	83	80½	81	81	85	87	88	84½

The average amount of albuminoid ammonia present was 1.05 of a grain per gallon. This filter has had no rest during the year.

No. 3 FILTER.

Area 139 ft. by 89 ft. by 2 ft. 3in. = 1374 square yards. Capacity 57,382 gallons. Filled for the first time on October 18th, 1897.

Grains of Oxygen Absorbed per gallon, Four Hours Test.

MONTH	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg for Year
Sewage ...	3.08	3.00	3.69	4.41	3.86	4.07	3.61	3.40	3.78	3.39	2.90	4.45	3.63
Tank Effluent	1.43	1.34	1.98	1.90	2.07	2.12	2.06	2.31	3.04	2.08	1.66	2.07	2.00
Filtrate ...	.38	.32	.58	.62	.71	.76	.73	.67	.70	.51	.40	.57	.58
Percentage of Purification from Tank Effluent to Filtrate ...	73½	75	72	67	65½	65	65	70½	76	75½	76	72	71
Total Percen- tage of Puri- fication from Sewage to Filtrate	87½	89½	84	86	81½	81½	80	79½	81	85	86	87	84

The average amount of albuminoid ammonia present was .14 of a grain per gallon. This Filter has had no rest during the year.

No. 4 FILTER.

Area 139ft. by 89ft. by 2ft. 6in. = 1374 sq. yds. Capacity 63,762 gls.

Filled for the first time on October 23rd, 1897.

Grains of Oxygen Absorbed per Gallon — Four Hours Test.

MONTH	Jan.	Feb	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec	Ave for Year
Sewage	3.08	3.00	3.69	4.41	3.86	4.07	3.61	3.40	3.78	3.39	2.90	4.45	3.63
Tank Effluent	1.43	1.34	1.98	1.90	2.07	2.12	2.06	2.31	3.04	2.08	1.66	2.07	2.00
Filtrate	.38	.31	.59	.61	.74	.77	.79	.70	.76	.52	.38	.61	.59
Percentage of Purification from Tank Effluent to Filtrate ..	73	76	71	67½	64½	64	61½	69	75	75	77	71	70
Total Percentage of Purification from Sewage to Filtrate	87	89½	84	86	81	81	78	79	80	84½	87	86½	83½

The average amount of albuminoid ammonia present was .18 of a grain per gallon. This Filter has had no rest during the year.

No. 5 FILTER.

Area 157ft. 6in. by 93ft. 6in. by 2ft. 3in. = 1636 $\frac{1}{4}$ sq. yds. Capacity 73631 gals.

Filled for the first time on March 2nd, 1898.

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

MONTH	Jan.	Feb.	Mar	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec	Avg for Year
Sewage ...	3.08	3.00	3.69	4.41	3.86	4.07	3.61	3.40	3.78	33.9	2.90	3.98	3.60
Tank Effluent	1.43	1.34	1.98	1.90	2.07	2.12	2.06	2.31	3.04	2.08	1.66	1.75	1.98
Filtrate .....	.39	.37	.57	.68	.76	.79	.82	.67	.74	.45	.32	.50	.59
Percentage of Purification from Tank Effluent to Filtrate ..	72 $\frac{1}{2}$	71	68 $\frac{1}{2}$	64 $\frac{1}{2}$	63 $\frac{1}{2}$	62 $\frac{1}{2}$	60 $\frac{1}{2}$	70 $\frac{1}{2}$	75 $\frac{1}{2}$	78 $\frac{1}{2}$	80 $\frac{1}{2}$	71 $\frac{1}{2}$	70
Total Percentage of Purification from Sewage to Filtrate	87	87 $\frac{1}{2}$	84 $\frac{1}{2}$	84 $\frac{1}{2}$	80 $\frac{1}{2}$	80 $\frac{1}{2}$	77 $\frac{1}{2}$	79 $\frac{1}{2}$	80 $\frac{1}{2}$	86 $\frac{1}{2}$	89	87 $\frac{1}{2}$	83 $\frac{1}{2}$

The average amount of albuminoid ammonia present was .16 of a grain per gallon. This filter has had 18 days rest during the year.

No. 6 FILTER.

Area 155ft. 4in. by 89ft. 6in. by 2ft. 3ins. = 1545 sq. yds.

Capacity 69,520 gallons.

Filled for the first time on April 7th, 1898.

Grains of Oxygen absorbed per Gallon.—Four Hours Test.

MONTH	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg. for Year
Sewage	3.08	3.00	3.69	4.41	3.86	4.07	3.61	3.40	3.78	3.39	2.90	4.92	3.67
Tank Effluent	1.43	1.34	1.98	1.90	2.07	2.12	2.06	2.31	3.04	2.08	1.66	2.40	2.07
Filtrate .....	.34	.37	.55	.60	.72	.73	.76	.67	.66	.40	.31	.57	.55
Percentage of Purification from Tank Effluent to Filtrate ...	75½	70½	73	68½	65	65½	63½	71	78½	80½	81½	76	72
Total Percen- tage of Puri- cation from Sewage to Filtrate	88½	87½	82	86½	81½	82	79½	80	82½	88	89½	88½	84

The average amount of albuminoid ammonia present was .16 of a grain per gallon. This filter has had 12 days rest during the year.

No. 7 FILTER.

Area 155ft. 4in. by 89ft. 6in. by 2ft. 3in. =

Capacity 69,520 gals.

Filled for the first time on May 6th, 1898.

Grains of Oxygen absorbed per Gallon.—Four Hours Test.

MONTH	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg for Year
Sewage ..	3.08	3.00	3.69	4.41	3.86	4.07	3.61	3.40	3.78	3.39	2.90	4.92	3.67
Tank Effluent	1.43	1.34	1.98	1.90	2.07	2.12	2.06	2.31	3.04	2.08	1.66	2.40	2.07
Filtrate ...	.33	.35	.57	.65	.69	.77	.75	.67	.62	.43	.32	.57	.56
Percentage of Purification from Tank Effluent to Filtrate ...	76½	74	72	65	66½	63½	63½	71	79½	79½	81	76	72
Total Percen- tage of Puri- cation from Sewage to Filtrate ...	89	88½	85	85½	82	81	79	79½	83	87	89½	88½	84¾

The average amount of albuminoid ammonia present was .15 of a grain per gallon. This filter has had 12 days rest during the year.

No. 8 FILTER.

Area 132ft. by 101ft. 9in. by 2ft. = 1477 sq. yds. Capacity 58183 gals.

Filled for the first time on June 22nd, 1898.

Grains of Oxygen absorbed per Gallon.—Four Hours Test.

MONTH	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg for Year
Sewage ...	3.08	3.00	3.69	4.41	3.86	4.07	3.61	3.40	3.78	3.39	2.90	4.92	3.67
Tank Effluent	1.43	1.34	1.98	1.90	2.07	2.12	2.06	2.31	3.04	2.08	1.66	2.40	2.07
Filtrate ...	.33	.35	.61	.63	.75	.86	.86	.69	.73	.43	.33	.55	0.59
Percentage of Purification from Tank Effluent to Filtrate ...	76	74	70	66½	64	59½	58½	69	76	79	80	77	70½
Total Percen- tage of Puri- fication from Sewage to Filtrate ...	89	88½	84	85½	81	74	76	79	80½	87	88½	89	83½

The average amount of albuminoid ammonia present was .19 of a grain per gallon. This Filter has had 12 days rest during the year.

No. 9 FILTER.

Area 132 ft. by 100 ft. 6in. by 1ft. 9in. = 1474 sq. yds. Capacity 58,038 gals.

Filled for the first time on August 15th, 1898.

Grains of Oxygen Absorbed per Gallon.—Four Hours Test.

MONTH.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Ave for Year
Sewage	3.08	3.00	3.69	4.41	3.86	4.07	3.61	3.40	3.78	3.39	2.90	4.92	3.67
Tank Effluent	1.43	1.34	1.98	1.90	2.07	2.12	2.06	2.31	3.04	2.08	1.66	2.40	2.07
Filtrate ... ..	.33	.32	.58	.61	.72	.86	.86	.74	.71	.42	.31	.55	.58
Percentage of Purification from Tank Effluent to Filtrate ...	76½	75½	72	67½	65½	60	58	68	76½	79½	81½	77	71½
Total Percen- tage of Puri- fication from Sewage to Filtrate	89	89½	84½	86	81½	79	76	78	81	87½	89½	89	84

The average amount of albuminoid ammonia present was .18 of a grain per gallon. This filter has had 12 days rest during the year.

No. 10 FILTER.

Area 161ft. by 67ft. by 2ft. 3in. = 1204 sq. yds. Capacity 53,000 gals.

Filled for the first time on September 27th, 1898.

Grains of Oxygen Absorbed per Gallon.—Fours Hours Test.

MONTH	Jan.	Feb.	Mar.	April	May	June	July	Aug	Sept.	Oct	Nov.	Dec.	Ave for Year
Sewage	3.08	3.00	3.69	4.41	3.86		3.61	3.40	3.78	3.39	2.90	4.92	3.64
Tank Effluent	1.43	1.34	1.98	1.90	2.07		2.06	2.31	3.04	2.08	1.66	2.40	2.02
Filtrate	.36	.36	.60	.73	.79	R	.89	.72	.77	.46	.34	.48	.59
Percentage of Purification from Tank Effluent to Filtrate	74	73	71½	61	62	R	56	68½	75	77½	79½	76½	70
Total Percentage of Purification from Sewage to Filtrate	88	88½	84½	83	80	R	75½	78½	79½	86½	88	89	83½

The average amount of albuminoid ammonia present was .17 of a grain per gallon. This Filter has had 24 days rest during the year.

No. 11 FILTER.

Area 161ft. by 68ft. by 2ft = 1216 sq. yards. Capacity 54,740 gals.

Filled for the first time on November 21st, 1898.

Grains of Oxygen Absorbed per Gallon — Four Hours Test.

MONTH	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average for Year
Sewage	3.08	3.00	3.69	4.41	3.86		3.61		3.78	3.39	2.90	4.92	3.66
Tank Effluent	1.43	1.34	1.98	1.90	2.07	Resting	2.06	Resting	3.04	2.08	1.66	2.40	1.99
Filtrate .....	.33	.35	.66	.69	.86	Resting	.90	Resting	.96	.47	.36	.49	.61
Percentage of Purification from Tank Effluent to Filtrate ...	77	73	68	64	59		57½		68½	77½	78	76	69
Total Percentage of Purification from Sewage to Filtrate	89	88½	82½	84½	78		73		74	86	87½	89	83

No albuminoid ammonia estimations have been made.

This filter has had 60 days rest during the year.

No. 13 FILTER.

Area 145ft. by 95ft. by 3ft. = 1423 sq. yds. about. Capacity 71,150 gals.

Filled for first time August 13th, 1900.

Grains of Oxygen absorbed per Gallon.—Four Hours Test.

MONTH	Sept.	Oct	Nov.	Dec	Ave for Year
Sewage	3.78	3.39	2.90	4.92	3.75
Tank Effluent	3.04	2.08	1.66	2.40	2.29
Filtrate .....	.71	.51	.30	.49	.50
Percentage of Purification from Tank Effluent to Filtrate ...	76½	75½	82	76	77½
Total Percen- tage of Puri- fication from Sewage to Filtrate ...	81	84½	90	89	86

The average amount of albuminoid ammonia present was .15 of a grain per gallon. This filter had no rest during the year.

No. 14 FILTER.

Area 136ft. by 95ft. 6in. by 3ft. = 1411 sq. yards. Capacity 70,550 gals.

Filled for the first time, October 1st, 1900.

Grains of Oxygen absorbed per gallon.—Four Hours Test.

MONTH	Oct.	Nov.	Dec.	Avg. per year
Sewage	3.39	2.90	4.92	3.74
Tank Effluent	2.08	1.66	2.40	2.04
Filtrate .....	.51	.35	.39	.42
Percentage of Purification from Tank Effluent to Filtrate ...	75½	78½	80	78
Total Percen- tage of Puri- cation from Sewage to Filtrate	85	88	91	88

The average amount of albuminoid ammonia present was .11 of a grain per gallon. This filter has had no rest during the year.

A. S. WYLIE, F.C.S.

