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COUNTY BOROUGH OF OLDHAM.

REPORT

ON THE

HEALTH OF OLDHAM

FOR THE YEAR 1905,

BY

JAMES B. WILKINSON,

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

Medical Officer of Health ;

Medical Officer to the Educational Committee ;

Medical Superintendent of Westhulme and Strinesdale Hospitals ;

Ex-President and Examiner to the Institute of Sanitary Engineers ;

President N.W. Branch Society Medical Officers of Health.

OLDHAM :

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

MEMBERS of the HEALTH COMMITTEE, 1905 :

Mr. Councillor Simister, Chairman.

„ Alderman Grime, Vice-Chairman.

The Mayor.

Mr. Alderman Hanson.

„ Alderman Carson.

Mr. Alderman Schofield.

„ Councillor Andrew.

„ „ Cooper.

Mr. Councillor Whittaker.

HOSPITALS SUB-COMMITTEE AND INSANITARY DWELLINGS SUB-COMMITTEE :

All the Members of the Committee.

To the Chairman and Members of the
Health Committee.

GENTLEMEN,

I have the honour of submitting for your consideration my Annual Report on the Health of the Borough and the Administration of the Health Department during the year 1905.

The arrangement is much the same as in previous years. Part I. deals with the general Vital Statistics ; Part II. with the Statistics and Prevalence of Infectious Disease in the Borough during the year ; while Part III. gives the details of the work carried out, by the Members of the Staff, to improve and maintain the Sanitary condition of the Borough.

The Appendix contains a report on the treatment of the Sewage, and a Special Smoke report.

I am glad to be able to report that the year has generally been a healthy one, and the Death-rate is once again the lowest which has been recorded for the Borough.

While the Birth-rate is also the lowest on record, the Infantile Mortality rate is also much lower than it used to be, and somewhat counterbalances the low Birth-rate.

Smallpox has again been prevalent during the year, but in such a mild form that out of the total number of cases only five deaths occurred, and two of these were not actually due to this disease.

On behalf of myself and my colleagues, I have to thank you for your continued representations to the Council, which have at last resulted in the Staff of the Department being housed in a healthy building with suitable Sanitary accommodation. I trust during the current year you will be enabled to deal with the Insanitary Area, which has been under your consideration so frequently.

I must tender my thanks to all the Members of the Staff for their willing assistance, and to you, Gentlemen, for your confidence and general support.

I have the honour to remain,

Your obedient Servant,

JAMES B. WILKINSON,

Medical Officer of Health.

Town Hall,
Oldham.

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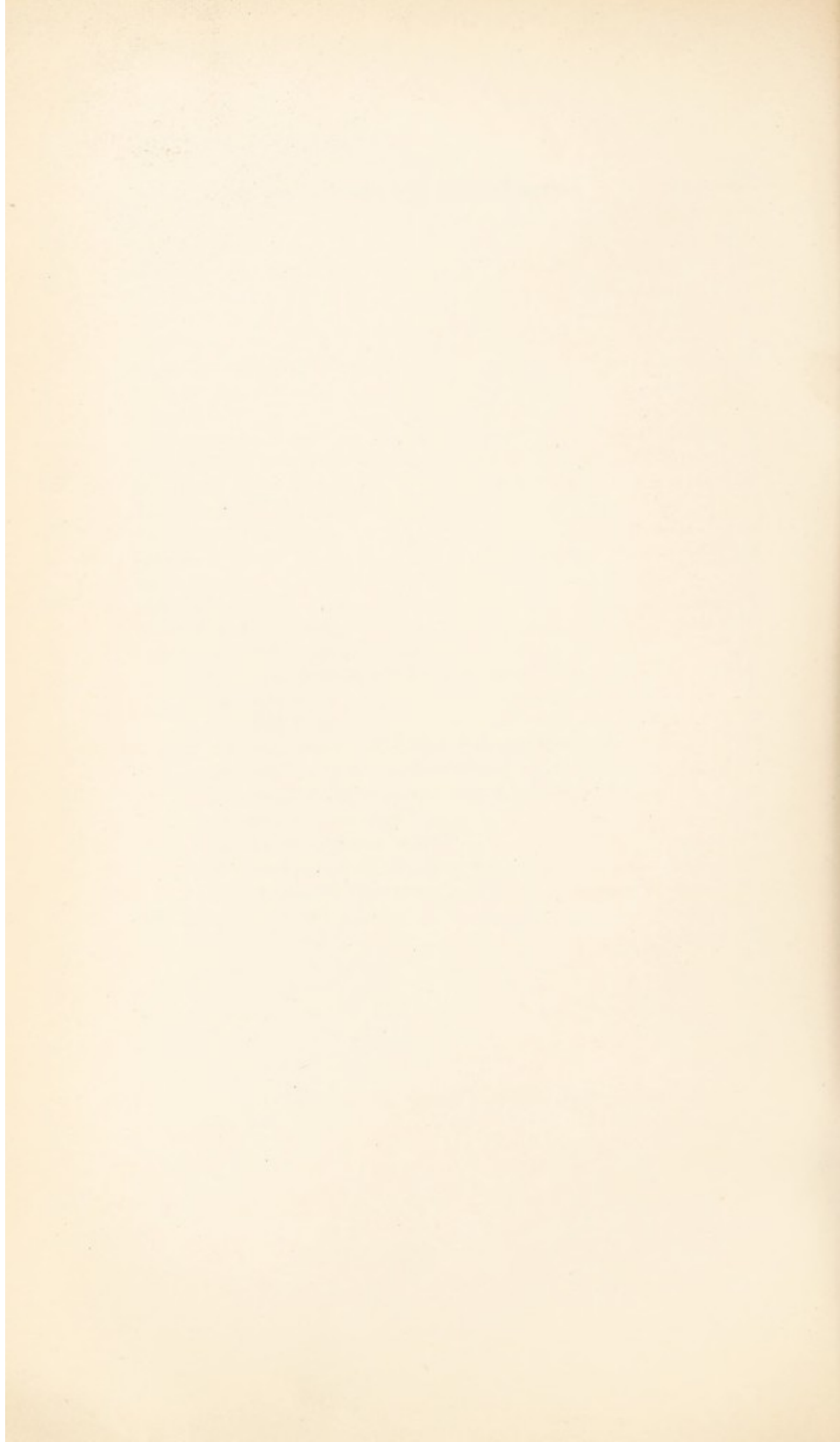
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PART I.

VITAL STATISTICS.

In accordance with the instructions issued by the Local Government Board, for the Medical Officer of Health's Annual Report, a brief description of the town is required, though the following facts may seem superfluous locally.

The town is mainly situated on the south-western slopes of offshoots from the Yorkshire range of hills, the height of the surface varying from about 1,200 feet above the sea level at the highest point, to 360 feet in the lower part of the town. The Old Market Place is 696 feet above the sea level.

The subsoil is chiefly rock or shale overlying the coal measures, and in the lower part of the town there are areas of clay with occasional sand pockets.

The country to the west and south-west is open to the sea, which is about 50 or 60 miles distant. The situation of the town is thus naturally an exposed one, with a heavy rainfall.

The population of the town is chiefly industrial. The main industry of the town is cotton spinning, but there are also large engineering works, chiefly for cotton machinery, weaving mills, boiler works, gas meter works, and coal mines, &c.

The population at the 1901 census was 137,238.

POPULATION 1905.

The population of the town, according to the Registrar-General's estimate, for the middle of the year is 140,225, or an increase of 728 over the population of the previous year. As has been pointed out in previous reports, this estimate is based on the supposition that the increase during the present decennial period, is at the same rate as that previous to the last census. Judging from the prosperity of the town and the few houses empty at the present time, it is probable that this estimate is rather under than over the actual number.

The natural increase, or the increase of births over deaths, is not, however, much in excess of the above number, being 866.

The natural increase in males was 379, in females 487, almost exactly the reverse of the figures in the year 1904.

The largest natural increase occurred in Westwood Ward, while in Mumps Ward the number of births and deaths were exactly the same.

The number of new houses built during the year was only 242, the smallest number since the year 1892.

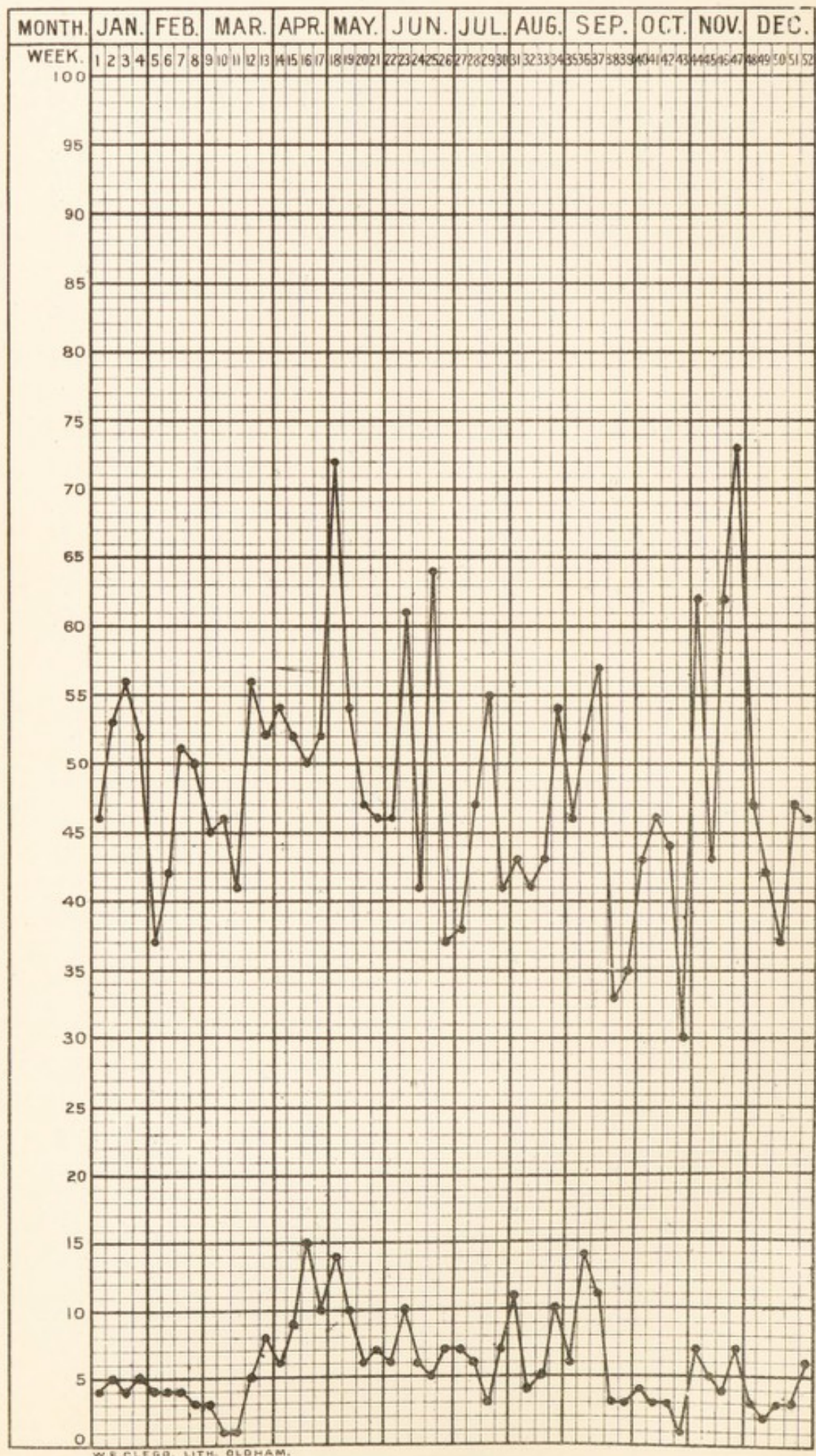
BIRTHS.

The total number of births registered in the Borough during the year was 3,396, of which the males numbered 1,715 and the females 1,681. This number is 94 fewer than in the previous year, when 3,463 children were born, and is equal to a rate of 24·3 per 1,000 births. This rate, I regret to say, is the lowest of which I have any record in the Borough, the lowest previously being in the year 1901, when it was 24·6.

BOROUGH OF OLDHAM.

TOTAL DEATHS
1905.

ZYMOTIC DEATHS
1905.



In consequence of this gradually decreasing birth rate and the resulting loss of value to the community, every effort should be made to preserve the lives of those who do come into the world.

In comparing the various Wards the highest birth rates were in Hollinwood with 33·1, and St. Mary's with 31·0. These Wards usually have the highest birth rates. The Wards with the lowest birth rates are St. Peter's with only 16·5 and Werneth with 17·6. Hartford Ward, which for some years has had a low rate, is this year slightly above the average for the whole town.

The birth rate for the whole of England during the year was 27·2, and for the 76 large towns 28·2 per 1,000 living, and had a range from 16·8 in Bournemouth to 38·3 in Merthyr Tydfil.

With the exception of Blackburn, where the rate was 24·1, Oldham has the lowest rate of the eight large Lancashire towns.

The illegitimate births during the year numbered 136, or 4·1 per cent. of the total number.

DEATHS.

The total number of deaths registered in the Borough during the year was 2,639. Of these 129 were non-residents, and are deducted, while the deaths of 20 persons belonging to Oldham, who died in other districts must be added, making a net total of 2,530. The non-residents were chiefly persons belonging to Chadderton, Crompton, Royton, and Middleton, who died in the Workhouse. The above number is 12 less than the number of deaths which occurred in 1904, and again established a record.

In 1894 the death rate was 19·4 per 1,000 of the population, and was the lowest which had ever been recorded in the Borough. This rate was lowered in 1898 to 19·2 and again in 1902 to 19·1, and since this year the rates have decreased annually. In 1903 to 18·6; in 1904 to 18·3; and in 1905 to 18·1.

Most departments of Municipal life are able to point to concrete objects as the results of their work, such as Public Libraries, Baths, and Parks, or to the public supply of necessities or conveniences, but the ultimate results of the work of the Health Department can only be shown in the form of statistics. What the above figures actually mean is that during the year 1905 no less than 210 less deaths have occurred in Oldham than the average for the preceding five years, and that at least five times this number of cases of illness have been prevented.

Were it possible to pick out and parade through the town those whose lives have been saved by the slow but gradual improvement in the environments of the inhabitants, the meaning of a lowered death rate would be much better appreciated than it is at present, and the cost of further improvements less strongly objected to.

In comparing the death rate of Oldham with the remainder of England and Wales, we find that the town suffers by comparison, the recorded death rate for the whole country being 15·22 per 1,000, and that of the 76 large towns 15·73.

The death rates of the eight large Lancashire towns, as estimated in the Registrar-General's returns, are as follows :—Bolton 15·07, Blackburn 16·21, Burnley 16·56, Salford 16·94, Preston 17·91, Oldham 17·98, Manchester 17·99, and Liverpool 19·63 per 1,000 of the population.

The Ward having the highest rate is Mumps, in which the rate is 22·8, and that having the lowest is St. Peter's, where the rate is 14·7.

The principal causes of death are given in the summary on page 21, and a complete list of the deaths from the various causes will be found in Table 15.

INFANTILE DEATHS.

During the past year the total number of deaths which occurred in the Borough under the age of one year was 508, or 29 fewer than in the previous year. This number is equal to a rate of 149·5 per 1,000 births, which is lower than the previous two years, but not quite equal to the record year of 1902, when it was 148. The infantile mortality rate for the 76 large towns was 140 per 1,000 births, but compared with the eight large Lancashire towns Oldham takes the third place, the others being : Blackburn 146, Salford 148, Liverpool 153, Preston 154, Manchester 157, Bolton 167, and Burnley 173.

In the Wards of the town the highest rates are in Mumps with 180 and Coldhurst with 178, and the lowest in St. Peter's with 122 and Westwood with 127.

In Table 2 are detailed the causes of these infantile deaths and the ages at which they occur, and in Table 3 the manner in which those who died were fed during their brief life.

In looking through this list it will be noticed that a large proportion of these deaths are of a more or less preventible nature.

Two infectious diseases, which it is difficult to convince the public are of more than a trivial nature, viz., Measles and Whooping Cough, are responsible for 19 and 25 deaths respectively ; and Diarrhoea, another communicable disease, caused 65 deaths.

Premature Births and Congenital Defects were the cause of 81 and Respiratory Diseases of 82 deaths.

In the following Table I have endeavoured to estimate in what respects the infantile deaths have shown a diminution.

In the past four years, during which the Lady Inspectors have been carrying out their work, the Infantile Mortality has decreased considerably, and the following figures give the rates for the various classes of disease during these four years, and also during the four years previous to the appointment of these Inspectors.

| CAUSE OF DEATH. | AVERAGE DEATH RATE PER 1,000 BIRTHS 1898-1901. | AVERAGE DEATH RATE PER 1,000 BIRTHS 1902-1905. | INCREASE OR DECREASE. |
|---|---|---|-----------------------------|
| Premature Birth | 20.9 | 21.2 | + |
| Congenital Defects | 2.5 | 4.5 | + |
| Atrophy, Inanition, and Debility | 19.1 | 17.3 | — |
| Diarrhœa | 22.0 | 13.1 | — |
| Other Zymotic | 12.4 | 14.3 | + |
| Convulsions | 14.7 | 10.2 | — |
| Dentition | 2.7 | 2.5 | — |
| Tubercular Disease | 7.4 | 3.8 | — |
| Pneumonia & Bronchitis ... | 40.4 | 30.8 | — |
| Other Causes | 37.4 | 30.5 | — |
| Total | 179.6 | 148.2 | — |

From this table it will be seen that there has been a diminution in the rate of all causes of these deaths except Premature Birth and Congenital Defects, which, as far as the child is concerned, cannot be considered preventible, and from the general Zymotic Diseases.

The other causes, to which these deaths are ascribed, most of which are closely connected with dietetic irregularities or improper management of infants, all show a lower rate during the last four years, and a considerable proportion of this may fairly be attributed to the instruction which is given to the mothers. Unfortunately, owing to the length of time before birth registration is necessary, it is frequently six or eight weeks before information of the birth reaches the Inspectors, by which time much mischief can be done. About two-fifths of the total number of infantile deaths occur under the age of six weeks, the time allowed for registration.

The preponderance in the deaths of bottle-fed children over breast-fed children from diseases connected with the digestive system, such as Diarrhœa and Wasting Disease, is as usual well marked. From Diarrhœa the deaths of artificially-fed children are six times as numerous as those which are breast-fed.

PHTHISIS.

During the year there were 206 deaths from Phthisis, and 58 from other forms of Tubercular Disease, compared with 193 and 85 in the year 1904. The above number of deaths from Phthisis gives a rate of 1.46 per 1,000 of the population. This is a slightly higher rate than in 1904, when the death rate from Phthisis was the lowest which

had been recorded in the Borough, but is below the average for the past five years. The rate for all forms of Tubercular Disease is below that previously recorded. Only 10 deaths of infants under the age of one year are returned as due to Tubercular Disease, and 30 under the age of five years.

In the absence of any form of notification of this disease it is only possible to carry out general preventive measures, such as the improvement of dwelling houses and occasional disinfection after death. As I have previously stated, I consider the notification of this disease would have a considerable result in limiting its extension, and several towns have adopted voluntary notification with beneficial results. Sheffield has compulsory notification.

In the various Wards Hollinwood has the lowest rate, viz., 0·7, closely followed by St. Peter's with 0·9; while the highest rate occurs in Mumps and Coldhurst Wards, each having a rate of 2·1 per 1,000 living.

DIARRHŒA.

The number of deaths from Diarrhœa show this year a diminution. There were in all 98 deaths, 65 of which occurred in infants under the age of one year, 85 under the age of five, and nine in persons over the age of 60. Comparatively few persons realise the danger of this disease to old persons or young children. In infants it is one of the most difficult illnesses medical men are called upon to deal with, especially if allowed to go on for a few days before qualified assistance is obtained.

The death rate from this disease for the whole town is 0·72 per 1,000, and with the exception of Blackburn, where the rate was 0·64, Oldham has the lowest death rate from Diarrhœa of the large Lancashire towns. The rate for the 76 large towns of England was 0·83, and for the whole of England and Wales 0·59. Of the Wards, St. Paul's and Waterhead have the lowest rate from this disease.

INQUESTS.

Particulars of the various inquests held in the Borough during the year have been kindly supplied to me in Table 14 by the Coroner (Dr. G. Thomson).

Twenty-three inquests have been held on infants under the age of one year, and a total number of 67. There were no deaths which were attributed to either murder or manslaughter; 14 were attributed to Suicide 60 to Accidental Death, 81 to Natural Causes, 3 to Excessive Drinking, and in 9 cases an open verdict was returned.

METEOROLOGICAL REPORT.

JANUARY.—The mean barometric pressure was 30.18 and the mean temperature 37. The minimum temperature recorded on the grass was 24 degrees, and the maximum in the sun was 44 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 40 to 41 degrees. Rain fell on 13 days out of 28, the total rainfall amounting to 3.40 inches.

FEBRUARY.—The mean barometric pressure was 30.28 and the mean temperature 40. The minimum temperature recorded on the grass was 28 degrees, and the maximum in the sun 48 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 40 to 41 degrees. Rain fell on 17 days, the total rainfall for the month amounting to 2.02 inches.

MARCH.—The mean barometric pressure was 29.07 inches, and the mean temperature 42 degrees. The minimum temperature on the grass was 29 degrees, and the maximum temperature in the sun was 60 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 40 to 41 degrees. Rain fell on 21 days, the total rainfall being 5.43 inches.

APRIL.—The mean barometric pressure was 29.89 inches, and the mean temperature 43 degrees. The minimum temperature on the grass was 32 degrees, and the maximum temperature in the sun was 56 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 42 to 43 degrees. Rain fell on 23 days, the total rainfall amounting to 6.19 inches.

MAY.—The mean barometric pressure was 30·17 inches, and the mean temperature 48 degrees. The minimum temperature recorded on the grass was 35 degrees, and the maximum in the sun 70 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 43 to 47 degrees. Rain fell on 14 days, the total rainfall amounting to 2·34 inches.

JUNE.—The mean barometric pressure was 30·10 inches, and the mean temperature 56 degrees. The minimum temperature recorded on the grass was 41 degrees, and the maximum in the sun 78 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 48 to 51 degrees. Rain fell on 12 days, the total rainfall amounting to 5·31 inches.

JULY.—The mean barometric pressure was 30·20 inches, and the mean temperature 62 degrees. The minimum temperature recorded on the grass was 45 degrees, and the maximum in the sun 83 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 52 to 56 degrees. Rain fell on 18 days, the total rainfall amounting to 4·90 inches.

AUGUST.—The mean barometric pressure was 30·03 inches, and the mean temperature 57 degrees. The minimum temperature recorded on the grass was 45 degrees, and the maximum in the sun 72 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 57 to 54 degrees. Rain fell on 19 days, the total rainfall amounting to 8·29 inches.

SEPTEMBER.—The mean barometric pressure was 30·02 inches, and the mean temperature 53 degrees. The minimum temperature recorded on the grass was 34 degrees,

and the maximum in the sun 69 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 55 to 52 degrees. Rain fell on 22 days, and the total rainfall amounted to 5.51 inches.

OCTOBER.—The mean barometric pressure was 29.95 inches, and the mean temperature 45 degrees. The maximum temperature recorded in the sun was 58 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 51 to 46 degrees. Rain fell on 19 days, and the total rainfall amounted to 5.82 inches.

NOVEMBER.—The mean barometric pressure was 29.89 inches, and the mean temperature 40 degrees. The maximum temperature recorded in the sun was 53 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 48 to 44 degrees. Rain fell on 16 days, and the total rainfall amounted to 4.12 inches.

DECEMBER.—The mean barometric pressure was 30.09 inches, and the mean temperature was 41 degrees. The minimum temperature on the grass was 28 degrees, and the maximum in the sun 48 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 43 to 42 degrees. Rain fell on 19 days out of 35, and the total rainfall amounted to 4.52 inches.

VITAL STATISTICS, 1905.

SUMMARY.

Population estimated by the Registrar General to
the middle of the year 140,225

Births registered in the 52 weeks ending December
30th, 1905 Males ... 1,715 } 3,396
Females ... 1,681 }

Deaths registered in the 52 weeks ending December
30th, 1905 Males ... 1,336 } 2,530
Females ... 1,194 }

Deaths from the seven principal Zymotic diseases... 293

Deaths under 1 per 1,000 Births 150

Annual Rate of Births per 1,000 living population. 24·3

Annual Rate of Mortality from all causes per 1,000
living population 18·1

Annual Rate of Mortality per 1,000 living popula-
tion from the seven principal Zymotic diseases. 2·1

Of the 2,530 deaths registered during the year 1905,
811, or 32·0 per cent., were those of children under
5 years of age.

PRINCIPAL CAUSES OF DEATHS.

| | | | |
|---------------------|-----|------------------------|-----|
| Bronchitis | 264 | Debility, &c. | 88 |
| Pneumonia | 220 | Cancer | 111 |
| Phthisis | 206 | Convulsions | 36 |
| Heart Disease... .. | 259 | Diarrhœa... .. | 98 |
| Measles | 65 | Premature Birth | 67 |
| Apoplexy, &c.... .. | 131 | Whooping Cough | 57 |
| Diphtheria | 11 | Accidents... .. | 66 |

TABLE No. 1.
HOUSES BUILT IN THE BOROUGH.

| YEAR. | | | | NO. OF HOUSES BUILT. |
|-----------------------------|--------|-----|-----|-------------------------|
| March, 1871, to March, 1872 | ... | ... | | 277 |
| „ 1872 | „ 1873 | ... | ... | 197 |
| „ 1873 | „ 1874 | ... | ... | 588 |
| „ 1874 | „ 1875 | ... | ... | 649 |
| „ 1875 | „ 1876 | ... | ... | 867 |
| „ 1876 | „ 1877 | ... | ... | 1181 |
| „ 1877 | „ 1878 | ... | ... | 1010 |
| „ 1878 | „ 1880 | ... | ... | 989 |
| „ 1880 | „ 1881 | ... | ... | 746 |
| „ 1881 | „ 1882 | .. | ... | 738 |
| „ 1882 | „ 1883 | ... | ... | 644 |
| „ 1883 | „ 1884 | ... | ... | 631 |
| „ 1884 | „ 1885 | ... | ... | 737 |
| „ 1885 | „ 1886 | ... | ... | 780 |
| „ 1886 | „ 1887 | ... | ... | 657 |
| „ 1887 | „ 1888 | ... | ... | 711 |
| „ 1888 | „ 1889 | ... | ... | 371 |
| „ 1889 | „ 1890 | ... | ... | 218 |
| „ 1890 | „ 1891 | ... | ... | 214 |
| „ 1891 | „ 1892 | ... | ... | 190 |
| „ 1892 | „ 1893 | ... | ... | 227 |
| „ 1893 | „ 1894 | ... | ... | 362 |
| „ 1894 | „ 1895 | ... | ... | 284 |
| „ 1895 | „ 1896 | ... | ... | 294 |
| „ 1896 | „ 1897 | ... | ... | 360 |
| „ 1897 | „ 1898 | ... | ... | 505 |
| „ 1898 | „ 1899 | ... | ... | 455 |
| „ 1899 | „ 1900 | . | ... | 608 |
| „ 1900 | „ 1901 | ... | ... | 543 |
| „ 1901 | „ 1902 | ... | ... | 439 |
| „ 1902 | „ 1903 | .. | ... | 375 |
| „ 1903 | „ 1904 | ... | ... | 357 |
| „ 1904 | „ 1905 | ... | ... | 242 |

TABLE No. 2.

INFANTILE MORTALITY DURING THE YEAR 1905.

DEATHS FROM STATED CAUSES IN WEEKS AND MONTHS UNDER
ONE YEAR OF AGE.

| CAUSE OF DEATH. | Under 1 Week. | 1-2 Weeks. | 2-3 Weeks. | 3-4 Weeks. | Total under 1 Month. | 1-2 Months. | 2-3 Months. | 3-4 Months. | 4-5 Months. | 5-6 Months. | 6-7 Months. | 7-8 Months. | 8-9 Months. | 9-10 Months. | 10-11 Months. | 11-12 Months. | Total Deaths under One Year. |
|--|---------------|------------|------------|------------|----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|---------------|---------------|------------------------------|
| ALL CAUSES—Certified | 90 | 24 | 24 | 15 | 153 | 62 | 51 | 30 | 26 | 31 | 29 | 31 | 25 | 29 | 20 | 21 | 508 |
| " Uncertified..... | | | | | | | | | | | | | | | | | |
| <i>Common Infectious Diseases—</i> | | | | | | | | | | | | | | | | | |
| Small-pox | | | | | | | | | | | | | | | | | |
| Chicken-pox..... | | | | | | | | | | | | | | | | | |
| Measles..... | | | | | | | 2 | | | | 2 | 5 | 2 | 4 | 2 | 2 | 19 |
| Scarlet Fever | | | | | | | | | | | | | | | | | |
| Diphtheria : Croup | | | | | | | 2 | | | | 1 | | | | | | 3 |
| Whooping Cough | | | | | | | 2 | 2 | 1 | 1 | 1 | 2 | 6 | 2 | 4 | 3 | 25 |
| <i>Diarrhœal Diseases—</i> | | | | | | | | | | | | | | | | | |
| Diarrhœa, all forms | | | 1 | | 1 | 7 | 12 | 9 | 6 | 6 | 10 | | 6 | 2 | 2 | 4 | 65 |
| Enteritis (<i>not Tuberculous</i>).. | | | | 1 | 1 | 3 | | | 1 | | 2 | | | | | | 7 |
| Gastritis, Gastro-intestinal Catarrh | | | | | | 1 | | 1 | | 4 | 1 | 1 | | | 1 | | 9 |
| <i>Wasting Diseases—</i> | | | | | | | | | | | | | | | | | |
| Premature Birth..... | 40 | 9 | 4 | 7 | 60 | 3 | 1 | 1 | 1 | | 1 | | | | | | 67 |
| Congenital Defects..... | 7 | 1 | 1 | | 9 | | 1 | | | | | | | | | | 10 |
| Injury at Birth | 4 | | | | 4 | | | | | | | | | | | | 4 |
| Want of Breast-milk | | | | | | | | | | | | | | | | | |
| Atrophy, Debility, Marasmus | 11 | 3 | 5 | 4 | 23 | 22 | 11 | 5 | 4 | 4 | 1 | 3 | 2 | 1 | 1 | 1 | 78 |
| <i>Tuberculous Diseases—</i> | | | | | | | | | | | | | | | | | |
| Tuberculous Meningitis | | | | | | | 1 | | | | | 1 | | | | 1 | 3 |
| Tuberculous Peritonitis | | | | | | | | | | | | | | | | | |
| Tabes Mesenterica | | | | | | | | | 1 | | | | | 1 | | | 2 |
| Other Tuberculous Diseases..... | | | | | | | 1 | | 1 | | | 1 | 1 | 1 | | | 5 |
| Erysipelas | | | | | | | 1 | | | | | | | | | | 1 |
| Syphilis..... | | | 1 | | 1 | | | 1 | | | | 1 | | | | | 3 |
| Rickets | | | | | | | | | | | 1 | | | | 1 | | 2 |
| Meningitis (<i>not Tuberculous</i>).. | | | | | | | 1 | 1 | 1 | | 1 | 2 | | 2 | 2 | | 12 |
| Convulsions | 8 | 4 | 3 | | 15 | 3 | 3 | 1 | | 1 | 1 | | | | | | 26 |
| Bronchitis..... | 1 | 2 | | 2 | 5 | 6 | 8 | 3 | 7 | 5 | 2 | 1 | 5 | 6 | 3 | 2 | 53 |
| Laryngitis | | | | | | | | | | | | 1 | | | | | 1 |
| Pneumonia | | 1 | 1 | | 2 | 1 | | 2 | 1 | 5 | | 4 | 1 | 6 | 2 | 4 | 28 |
| Suffocation, overlaying | 1 | | | | 1 | 1 | 2 | | | | | | | | | | 4 |
| Other Causes | 18 | 4 | 8 | 1 | 31 | 10 | 5 | 5 | 3 | 3 | 4 | 7 | 4 | 1 | 2 | 6 | 81 |
| | 90 | 24 | 24 | 15 | 153 | 62 | 51 | 30 | 26 | 31 | 29 | 31 | 25 | 29 | 20 | 21 | 508 |

Population, estimated to middle of 1905, 140,225.

Births in the Year—Legitimate, 3269; Illegitimate, 136.

Deaths from all Causes at all Ages—2530.

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 ... | 22 | 18 | 18 | 3 | ... | 6 | ... | 1 | 36 |
| Diarrhœa | 9 | 52 | 52 | 5 | ... | 17 | 5 | 4 | 40 |
| Convulsions and Dentition | 18 | 18 | 18 | ... | 2 | 7 | ... | 1 | 30 |
| Congenital Malformation | 3 | 2 | 2 | ... | 5 | 3 | ... | ... | 7 |
| Inanition, Debility, or Atrophy ... | 23 | 49 | 49 | 3 | 8 | 14 | 3 | 1 | 65 |
| Premature Birth | 20 | 16 | 16 | ... | 31 | 13 | | 3 | 51 |
| Tubercular Diseases | 3 | 5 | 5 | ... | ... | 2 | 1 | 1 | 4 |
| Bronchitis and Pneumonia | 38 | 36 | 36 | 7 | ... | 14 | 4 | 1 | 62 |
| All other Diseases ... | 52 | 38 | 38 | 9 | 13 | 18 | 7 | 2 | 85 |
| TOTALS | 188 | 234 | 234 | 27 | 59 | 94 | 20 | 14 | 380 |

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

| | 1905. | Ten Years, 1895-1904. |
|----------------------|------------|--------------------------|
| 33 Towns | 142 | 172 |
| London | 131 | 155 |
| West Ham | 153 | 169 |
| Croydon | 95 | 137 |
| Brighton | 101 | 150 |
| Portsmouth | 133 | 158 |
| Plymouth | 135 | 170 |
| Bristol | 122 | 140 |
| Cardiff | 118 | 154 |
| Swansea | 131 | 165 |
| Wolverhampton | 137 | 180 |
| Birmingham | 154 | 188 |
| Norwich | 174 | 178 |
| Leicester | 148 | 181 |
| Nottingham | 155 | 184 |
| Derby | 151 | 154 |
| Birkenhead | 127 | 171 |
| Liverpool | 153 | 186 |
| Bolton | 167 | 171 |
| Manchester | 157 | 187 |
| Salford | 148 | 200 |
| OLDHAM | 150 | 174 |
| Burnley | 173 | 215 |
| Blackburn | 146 | 193 |
| Preston | 154 | 218 |
| Huddersfield | 119 | 142 |
| Halifax | 131 | 142 |
| Bradford | 144 | 165 |
| Leeds | 151 | 176 |
| Sheffield | 167 | 185 |
| Hull | 152 | 175 |
| Sunderland | 142 | 171 |
| Gateshead | 138 | 175 |
| Newcastle | 135 | 172 |

TABLE No. 5.

SHOWING BIRTH, DEATH, AND ZYMOTIC DEATH RATES
in 33 Large Towns during the year 1905.

| CITIES AND BOROUGHES. | Estimated Population. | Birth Rates. | Death Rates. | Zymotic Death Rates. |
|-----------------------|--------------------------|-----------------|-----------------|----------------------------|
| 33 Towns | 12,129,781 | 27.7 | 15.9 | 1.88 |
| London | 4,684,794 | 27.1 | 15.6 | 1.71 |
| West Ham | 294,997 | 30.7 | 14.8 | 2.98 |
| Croydon | 147,704 | 26.4 | 12.5 | 0.98 |
| Brighton | 127,183 | 23.0 | 13.5 | 0.56 |
| Portsmouth | 201,975 | 28.0 | 16.6 | 2.64 |
| Plymouth | 116,000 | 25.6 | 16.8 | 1.44 |
| Bristol | 358,515 | 27.0 | 14.6 | 1.50 |
| Cardiff | 180,054 | 28.6 | 13.4 | 1.14 |
| Swansea | 96,384 | 31.9 | 16.7 | 1.37 |
| Wolverhampton | 99,456 | 28.7 | 15.0 | 2.26 |
| Birmingham... .. | 542,959 | 29.3 | 16.2 | 1.90 |
| Norwich | 116,741 | 27.5 | 16.3 | 1.60 |
| Leicester | 228,132 | 25.9 | 13.3 | 1.62 |
| Nottingham... .. | 251,671 | 26.5 | 16.5 | 2.27 |
| Derby | 122,207 | 25.4 | 14.6 | 1.52 |
| Birkenhead | 116,035 | 32.0 | 15.4 | 1.86 |
| Liverpool | 730,143 | 33.3 | 19.6 | 2.59 |
| Bolton | 178,111 | 25.0 | 15.1 | 1.94 |
| Manchester | 631,185 | 29.5 | 18.0 | 2.25 |
| Salford | 231,514 | 30.7 | 16.9 | 2.57 |
| OLDHAM | 140,225 | 24.3 | 18.1 | 2.10 |
| Burnley... .. | 101,682 | 26.3 | 16.6 | 2.33 |
| Blackburn | 133,067 | 24.1 | 16.2 | 2.01 |
| Preston... .. | 115,721 | 28.3 | 17.9 | 3.15 |
| Huddersfield | 94,888 | 23.8 | 17.0 | 1.10 |
| Halifax | 108,419 | 19.2 | 14.6 | 0.98 |
| Bradford | 286,799 | 21.1 | 15.2 | 1.42 |
| Leeds | 456,787 | 27.1 | 15.2 | 1.61 |
| Sheffield | 440,414 | 29.8 | 17.0 | 3.20 |
| Hull | 258,127 | 30.1 | 16.3 | 2.37 |
| Sunderland | 152,761 | 34.4 | 18.6 | 2.24 |
| Gateshead | 120,620 | 32.7 | 15.5 | 1.66 |
| Newcastle | 264,511 | 32.1 | 16.8 | 1.33 |

TABLE No. 6.—Showing Population, Births and Birth Rates, Deaths and Death Rates, ... 1905

| WARD. | Population. | Area in Acres. | Density (Persons to an Acre). | BIRTHS. | | | Birth Rate per 1,000 Population. | DEATHS. | | | Death Rate per 1,000 Population. |
|-------------------|-------------|----------------------|--|---------|----------|--------|--|---------|----------|--------|--|
| | | | | Males. | Females. | Total. | | Males. | Females. | Total. | |
| St. Mary's | 10,761 | 113 | 95.2 | 166 | 157 | 333 | 31.0 | 115 | 102 | 217 | 20.2 |
| St. Peter's | 11,721 | 271 | 43.2 | 104 | 117 | 221 | 16.5 | 87 | 85 | 172 | 14.7 |
| Werneth | 12,283 | 262 | 46.9 | 101 | 114 | 215 | 17.6 | 94 | 91 | 185 | 15.1 |
| Westwood | 13,567 | 280 | 48.4 | 201 | 185 | 386 | 28.5 | 130 | 111 | 241 | 17.8 |
| St. Paul's | 12,498 | 457 | 27.3 | 179 | 162 | 341 | 27.4 | 99 | 118 | 217 | 17.4 |
| Coldhurst | 10,342 | 130 | 79.5 | 104 | 109 | 213 | 20.7 | 128 | 76 | 204 | 19.8 |
| Hartford | 12,473 | 207 | 60.2 | 150 | 156 | 306 | 24.6 | 135 | 110 | 245 | 19.7 |
| Hollinwood..... | 9,050 | 420 | 21.5 | 160 | 139 | 299 | 33.1 | 90 | 96 | 186 | 20.6 |
| Clarksfield ... | 15,580 | 623 | 25.0 | 163 | 196 | 359 | 23.1 | 123 | 119 | 242 | 15.6 |
| Mumps | 8,308 | 125 | 66.4 | 109 | 80 | 189 | 22.8 | 106 | 83 | 189 | 22.8 |
| St. James' | 10,660 | 1,015 | 10.5 | 121 | 120 | 241 | 22.7 | 101 | 90 | 191 | 18.0 |
| Waterhead ... | 12,982 | 826 | 15.7 | 157 | 136 | 293 | 22.6 | 128 | 113 | 241 | 18.6 |
| Total..... | 140,225 | 4,729 | 29.6 | 1,715 | 1,681 | 3,396 | 24.3 | 1,336 | 1,194 | 2,530 | 18.1 |

TABLE No. 7.

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

1905.

| Ward. | All causes | Seven Principal Zymotic Diseases | Phthisis | Bronchitis | Pneumonia | Deaths under 1 year to 1000 births |
|-------------|------------|---|----------|------------|-----------|---|
| St. Mary's | 20.2 | 4.0 | 1.5 | 2.3 | 1.9 | 144 |
| St. Peter's | 14.7 | 2.4 | 0.9 | 1.3 | 0.8 | 122 |
| Werneth | 15.1 | 1.0 | 1.1 | 1.6 | 1.5 | 158 |
| Westwood | 17.8 | 1.8 | 1.3 | 3.3 | 0.9 | 127 |
| St. Paul's | 17.4 | 1.0 | 1.8 | 2.0 | 1.4 | 144 |
| Coldhurst | 19.8 | 3.0 | 2.1 | 1.3 | 2.1 | 178 |
| Hartford | 19.7 | 1.7 | 1.9 | 2.6 | 1.7 | 140 |
| Hollinwood | 20.6 | 3.0 | 0.8 | 1.4 | 1.3 | 170 |
| Clarksfield | 15.6 | 2.2 | 1.0 | 1.3 | 1.5 | 164 |
| Mumps | 22.8 | 2.8 | 2.2 | 2.3 | 2.2 | 180 |
| St. James' | 18.0 | 1.9 | 1.5 | 1.7 | 1.3 | 133 |
| Waterhead | 18.6 | 1.1 | 1.6 | 1.6 | 2.2 | 150 |
| Borough ... | 18.1 | 2.1 | 1.5 | 1.9 | 1.6 | 150 |

TABLE No. 8.

| NAMES OF LOCALITIES. | | Borough of Oldham. | | | |
|----------------------------------|--|--------------------|---------------------|----------------------|-----|
| YEAR. | Population estimated to middle of each Year. | Births Registered. | Deaths at all Ages. | Deaths under 1 Year. | |
| 1895 | 133,888 | 3873 | 3092 | 737 | |
| 1896 | 134,475 | 3969 | 2953 | 726 | |
| 1897 | 135,045 | 3793 | 2786 | 696 | |
| 1898 | 135,617 | 3749 | 2598 | 654 | |
| 1899 | 136,210 | 3732 | 3078 | 739 | |
| 1900 | 136,797 | 3691 | 3000 | 637 | |
| 1901 | 137,382 | 3374 | 2696 | 584 | |
| 1902 | 138,091 | 3659 | 2685 | 543 | |
| 1903 | 138,786 | 3545 | 2576 | 568 | |
| 1904 | 139,497 | 3463 | 2542 | 537 | |
| Averages of Years 1895 to 1904 } | | 136,579 | 3685 | 2801 | 642 |
| 1905 | | 140,225 | 3396 | 2530 | 508 |

| NAMES OF LOCALITIES | | St. Mary's. | | | | St. Peter's. | | | | Werneth. | | | |
|----------------------------------|--|--------------------|---------------------|----------------------|----|--|--------------------|---------------------|----------------------|--|--------------------|---------------------|----------------------|
| YEAR. | Population estimated to middle of each Year. | Births Registered. | Deaths at all Ages. | Deaths under 1 Year. | | Population estimated to middle of each Year. | Births Registered. | Deaths at all Ages. | Deaths under 1 Year. | Population estimated to middle of each Year. | Births Registered. | Deaths at all Ages. | Deaths under 1 Year. |
| 1895 | 10,520 | 335 | 297 | 85 | | 11,770 | 287 | 269 | 59 | 11,903 | 298 | 215 | 41 |
| 1896 | 10,543 | 350 | 300 | 82 | | 11,764 | 282 | 209 | 44 | 11,940 | 318 | 187 | 39 |
| 1897 | 10,567 | 347 | 238 | 48 | | 11,758 | 290 | 209 | 57 | 11,978 | 321 | 205 | 48 |
| 1898 | 10,591 | 355 | 240 | 69 | | 11,752 | 289 | 197 | 44 | 12,015 | 350 | 195 | 44 |
| 1899 | 10,614 | 373 | 249 | 68 | | 11,746 | 297 | 228 | 43 | 12,053 | 342 | 220 | 50 |
| 1900 | 10,638 | 392 | 262 | 68 | | 11,740 | 293 | 229 | 39 | 12,090 | 330 | 228 | 36 |
| 1901 | 10,662 | 369 | 252 | 51 | | 11,730 | 275 | 201 | 44 | 12,128 | 358 | 203 | 40 |
| 1902 | 10,691 | 379 | 245 | 56 | | 11,722 | 269 | 232 | 40 | 12,171 | 348 | 204 | 37 |
| 1903 | 10,717 | 370 | 227 | 52 | | 11,759 | 240 | 178 | 23 | 12,231 | 384 | 191 | 38 |
| 1904 | 10,737 | 338 | 232 | 50 | | 11,721 | 218 | 186 | 27 | 12,245 | 312 | 193 | 38 |
| Averages of Years 1895 to 1904 } | | 10,628 | 361 | 254 | 63 | 11,746 | 274 | 214 | 42 | 12,075 | 336 | 204 | 41 |
| 1905 | | 10,761 | 333 | 217 | 48 | 11,721 | 221 | 172 | 27 | 12,283 | 215 | 185 | 34 |

| | | Westwood. | | | | St. Paul's. | | | | Coldhurst. | | | |
|----------------------------------|--|--------------------|---------------------|----------------------|----|--|--------------------|---------------------|----------------------|--|--------------------|---------------------|----------------------|
| YEAR. | Population estimated to middle of each Year. | Births Registered. | Deaths at all Ages. | Deaths under 1 Year. | | Population estimated to middle of each Year. | Births Registered. | Deaths at all Ages. | Deaths under 1 Year. | Population estimated to middle of each Year. | Births Registered. | Deaths at all Ages. | Deaths under 1 Year. |
| 1895 | 12,176 | 373 | 259 | 65 | | 10,842 | 285 | 254 | 72 | 10,631 | 332 | 301 | 82 |
| 1896 | 12,306 | 371 | 268 | 68 | | 11,000 | 325 | 238 | 83 | 10,592 | 328 | 276 | 61 |
| 1897 | 12,438 | 346 | 251 | 70 | | 11,162 | 305 | 236 | 71 | 10,553 | 310 | 250 | 59 |
| 1898 | 12,571 | 324 | 238 | 77 | | 11,326 | 317 | 208 | 53 | 10,514 | 298 | 249 | 63 |
| 1899 | 12,706 | 324 | 309 | 70 | | 11,493 | 325 | 242 | 71 | 10,475 | 280 | 297 | 63 |
| 1900 | 12,842 | 334 | 266 | 66 | | 11,661 | 345 | 243 | 66 | 10,437 | 289 | 314 | 62 |
| 1901 | 13,009 | 322 | 256 | 65 | | 11,829 | 334 | 233 | 47 | 10,398 | 224 | 258 | 51 |
| 1902 | 13,166 | 401 | 232 | 41 | | 12,017 | 294 | 202 | 52 | 10,358 | 224 | 233 | 44 |
| 1903 | 13,260 | 376 | 249 | 56 | | 12,142 | 337 | 219 | 52 | 10,358 | 180 | 229 | 46 |
| 1904 | 13,432 | 405 | 234 | 64 | | 12,335 | 306 | 229 | 60 | 10,346 | 236 | 186 | 37 |
| Averages of Years 1895 to 1904 } | | 12,791 | 358 | 256 | 64 | 11,581 | 317 | 230 | 63 | 10,466 | 270 | 259 | 57 |
| 1905 | | 13,567 | 386 | 241 | 49 | 12,498 | 341 | 217 | 49 | 10,342 | 213 | 204 | 38 |

TABLE No 8—Continued.

| NAMES OF LOCALITIES. | | Hartford. | | | | Hollinwood. | | | | Clarksfield. | | | |
|--------------------------------------|--|----------------------|------------------------|------------------------|--|-----------------------|------------------------|-------------------------|--|-----------------------|------------------------|-------------------------|--|
| YEAR. | Population esti- mated to middle of each Year. | Births Registered | Deaths at all Ages. | Deaths under 1 Year | Population esti- mated to middle of each Year. | Births Registered. | Deaths at all Ages. | Deaths under 1 Year. | Population esti- mated to middle of each Year. | Births Registered. | Deaths at all Ages. | Deaths under 1 Year. | |
| 1895 | 12,586 | 366 | 300 | 70 | 8,049 | 314 | 166 | 43 | 12,680 | 365 | 241 | 53 | |
| 1896 | 12,572 | 349 | 274 | 61 | 8,145 | 297 | 149 | 42 | 12,952 | 409 | 264 | 65 | |
| 1897 | 12,558 | 323 | 288 | 61 | 8,262 | 308 | 147 | 45 | 13,229 | 370 | 234 | 59 | |
| 1898 | 12,544 | 283 | 254 | 51 | 8,342 | 280 | 145 | 26 | 13,513 | 397 | 231 | 69 | |
| 1899 | 12,539 | 269 | 263 | 70 | 8,442 | 300 | 201 | 54 | 13,802 | 369 | 276 | 61 | |
| 1900 | 12,516 | 230 | 286 | 49 | 8,543 | 286 | 191 | 40 | 14,098 | 357 | 291 | 64 | |
| 1901 | 12,495 | 153 | 258 | 65 | 8,644 | 267 | 178 | 41 | 14,426 | 370 | 227 | 44 | |
| 1902 | 12,477 | 214 | 252 | 56 | 8,760 | 298 | 173 | 45 | 14,752 | 400 | 275 | 45 | |
| 1903 | 12,486 | 180 | 230 | 63 | 8,829 | 317 | 173 | 43 | 14,946 | 370 | 242 | 57 | |
| 1904 | 12,473 | 240 | 268 | 49 | 8,952 | 252 | 161 | 40 | 15,300 | 373 | 270 | 60 | |
| Averages of Years 1895 to 1904 | 12,525 | 261 | 267 | 59 | 8,497 | 295 | 168 | 41 | 13,970 | 378 | 255 | 58 | |
| 1905 | 12,473 | 306 | 245 | 43 | 9,050 | 299 | 186 | 51 | 15,550 | 359 | 242 | 59 | |

| | Mumps. | | | | St. James's. | | | | Waterhead. | | | |
|--------------------------------------|--------|-----|-----|----|--------------|-----|-----|----|------------|-----|-----|----|
| 1895 | 8,884 | 224 | 215 | 40 | 10,708 | 308 | 243 | 60 | 12,964 | 386 | 332 | 67 |
| 1896 | 8,805 | 240 | 227 | 53 | 10,702 | 308 | 232 | 54 | 12,966 | 392 | 329 | 74 |
| 1897 | 8,726 | 247 | 210 | 55 | 10,695 | 255 | 220 | 52 | 12,968 | 371 | 298 | 71 |
| 1898 | 8,648 | 220 | 211 | 51 | 10,688 | 281 | 193 | 40 | 12,970 | 355 | 237 | 67 |
| 1899 | 8,570 | 209 | 248 | 52 | 10,682 | 309 | 235 | 67 | 12,971 | 335 | 310 | 70 |
| 1900 | 8,494 | 222 | 210 | 38 | 10,676 | 272 | 209 | 41 | 12,973 | 341 | 271 | 68 |
| 1901 | 8,417 | 158 | 188 | 43 | 10,668 | 214 | 213 | 39 | 12,976 | 330 | 229 | 54 |
| 1902 | 8,337 | 207 | 185 | 37 | 10,661 | 283 | 192 | 28 | 12,979 | 342 | 260 | 62 |
| 1903 | 8,336 | 213 | 198 | 35 | 10,687 | 244 | 196 | 38 | 13,035 | 334 | 244 | 65 |
| 1904 | 8,315 | 201 | 167 | 29 | 10,660 | 243 | 168 | 36 | 12,981 | 309 | 248 | 47 |
| Averages of Years 1895 to 1904 | 8,553 | 214 | 207 | 43 | 10,682 | 272 | 210 | 45 | 12,978 | 349 | 275 | 64 |
| 1905 | 8,308 | 189 | 189 | 34 | 10,660 | 241 | 191 | 32 | 12,982 | 293 | 241 | 44 |

TABLE No. 9.—FOR WHOLE DISTRICT.

| YEAR. | Population estimated to middle of each Year. | BIRTHS. | | TOTAL DEATHS REGISTERED IN THE DISTRICT. | | | | Total Deaths in Public Institutions in the District. | Deaths of Non-residents register'd in Public Institutions in the District. | Deaths of Non-residents register'd in Public Institutions beyond the District. | NETT DEATHS AT ALL AGES BELONGING TO THE DISTRICT. | |
|------------------------------|--|---------|-------|--|----------------------------------|--------------|-------|--|--|--|--|-------|
| | | Number | Rate. | Under 1 Year of Age. | | At all Ages. | | | | | Number | Rate. |
| | | | | Number | Rate per 1,000 Births register'd | Number | Rate. | | | | | |
| | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 1895 | 133,888 | 3873 | 29.0 | 737 | 190 | 3186 | 23.8 | 554 | 116 | 22 | 3092 | 23.1 |
| 1896 | 134,475 | 3969 | 29.1 | 726 | 183 | 3058 | 22.7 | 383 | 105 | .. | 2953 | 21.6 |
| 1897 | 135,045 | 3793 | 28.2 | 696 | 183 | 2863 | 21.2 | 388 | 77 | ... | 2786 | 20.7 |
| 1898 | 135,617 | 3749 | 27.7 | 654 | 174 | 2693 | 19.9 | 395 | 101 | 6 | 2598 | 19.2 |
| 1899 | 136,210 | 3732 | 27.5 | 739 | 198 | 3204 | 23.5 | 487 | 129 | 3 | 3078 | 22.7 |
| 1900 | 136,797 | 3691 | 27.1 | 637 | 173 | 3112 | 22.7 | 489 | 129 | 17 | 3000 | 22.0 |
| 1901 | 137,382 | 3374 | 24.6 | 584 | 173 | 2806 | 20.4 | 427 | 121 | 11 | 2696 | 19.7 |
| 1902 | 138,091 | 3659 | 26.1 | 543 | 148 | 2795 | 19.9 | 461 | 129 | 19 | 2685 | 19.1 |
| 1903 | 138,786 | 3545 | 25.6 | 568 | 160 | 2690 | 19.4 | 337 | 122 | 8 | 2576 | 18.6 |
| 1904 | 139,497 | 3463 | 24.9 | 537 | 155 | 2666 | 19.2 | 516 | 137 | 13 | 2542 | 18.3 |
| Averages for years 1895-1904 | 136,579 | 3685 | 27.0 | 642 | 174 | 2907 | 21.3 | 444 | 117 | 10 | 2801 | 20.5 |
| 1905 | 140,225 | 3396 | 24.3 | 508 | 150 | 2639 | 18.9 | 469 | 129 | 20 | 2530 | 18.1 |

Area of District in Acres, 4,729.

At Census of 1901.—Total population at all ages, 137,246. Number of inhabited houses, 29,907.
Average number of persons per house, 4.588.

TABLE No. 10.

Showing the Birth-rates, also Rates of Mortality from all causes, from the seven principal Zymotic Diseases, and from Phthisis, Bronchitis, and Pneumonia, during the years 1877-1905.

| Years | Population | RATES PER 1,000 POPULATION FROM | | | | | | Deaths under 1 year to 1000 births |
|-----------------------|------------|---------------------------------|-------------------|------------------------------|------------|------------|------------|------------------------------------|
| | | Births | Deaths all causes | 7 principal Zymotic Diseases | Phthisis | Bronchitis | Pneumonia | |
| 1877 | 99,557 | 40.2 | 24.9 | 3.0 | 2.2 | 3.3 | 1.6 | 162 |
| 1878 | 102,573 | 39.8 | 26.9 | 5.7 | 2.3 | 3.5 | 1.5 | 175 |
| 1879 | 105,679 | 36.2 | 22.7 | 2.8 | 2.1 | 3.4 | 1.8 | 157 |
| 1880 | 108,880 | 35.4 | 24.6 | 4.3 | 2.3 | 3.3 | 1.7 | 181 |
| 1881 | 112,176 | 35.3 | 22.7 | 2.3 | 2.3 | 3.4 | 2.0 | 152 |
| Average 5 y'rs | | 37.4 | 24.3 | 3.6 | 2.2 | 3.4 | 1.7 | 165 |
| 1882 | 114,017 | 35.3 | 24.9 | 2.8 | 2.3 | 3.4 | 2.1 | 182 |
| 1883 | 115,888 | 36.0 | 22.5 | 1.5 | 2.3 | 2.9 | 1.8 | 159 |
| 1884 | 117,791 | 37.4 | 25.9 | 3.7 | 2.6 | 2.8 | 2.3 | 182 |
| 1885 | 119,724 | 37.5 | 23.2 | 2.1 | 2.4 | 2.7 | 2.2 | 167 |
| 1886 | 121,690 | 34.7 | 24.2 | 3.0 | 2.3 | 3.1 | 1.9 | 175 |
| Average 5 y'rs | | 36.2 | 24.1 | 2.6 | 2.4 | 3.0 | 2.0 | 173 |
| 1887 | 123,687 | 33.8 | 25.8 | 4.5 | 2.0 | 3.2 | 2.1 | 187 |
| 1888 | 125,717 | 33.3 | 22.3 | 2.2 | 1.9 | 2.6 | 2.6 | 151 |
| 1889 | 127,781 | 31.5 | 22.7 | 3.3 | 1.9 | 2.8 | 2.6 | 178 |
| 1890 | 129,878 | 31.0 | 24.4 | 2.5 | 2.0 | 3.4 | 3.1 | 180 |
| 1891 | 132,010 | 30.8 | 25.6 | 2.3 | 1.9 | 3.7 | 3.3 | 193 |
| Average 5 y'rs | | 32.1 | 24.2 | 2.9 | 1.9 | 3.1 | 2.7 | 178 |
| 1892 | 132,171 | 29.5 | 22.3 | 2.7 | 2.1 | 2.8 | 2.3 | 177 |
| 1893 | 132,738 | 29.4 | 21.6 | 2.6 | 1.9 | 2.3 | 2.4 | 186 |
| 1894 | 133,313 | 28.4 | 19.4 | 1.9 | 2.0 | 2.1 | 1.9 | 162 |
| 1895 | 133,888 | 29.0 | 23.1 | 2.9 | 1.8 | 2.7 | 2.4 | 190 |
| 1896 | 134,475 | 29.1 | 21.6 | 2.9 | 1.7 | 2.5 | 2.3 | 183 |
| Average 5 y'rs | | 29.1 | 21.6 | 2.6 | 1.9 | 2.5 | 2.3 | 180 |
| 1897 | 135,045 | 28.2 | 20.7 | 2.7 | 1.7 | 2.0 | 2.2 | 183 |
| 1898 | 135,617 | 27.7 | 19.2 | 2.4 | 1.7 | 2.1 | 2.2 | 174 |
| 1899 | 136,210 | 27.5 | 22.7 | 2.4 | 1.6 | 2.8 | 2.6 | 198 |
| 1900 | 136,797 | 27.1 | 22.0 | 2.7 | 1.9 | 2.8 | 2.3 | 173 |
| 1901 | 137,382 | 24.6 | 19.7 | 2.5 | 1.6 | 2.2 | 2.2 | 173 |
| Average 5 y'rs | | 27.0 | 20.9 | 2.5 | 1.7 | 2.4 | 2.3 | 180 |
| 1902 | 138,091 | 26.1 | 19.1 | 2.0 | 1.5 | 2.1 | 2.0 | 148 |
| 1903 | 138,786 | 25.6 | 18.6 | 2.4 | 1.6 | 2.4 | 1.6 | 160 |
| 1904 | 139,497 | 24.9 | 18.3 | 2.3 | 1.4 | 2.2 | 1.5 | 155 |
| 1905 | 140,225 | 24.3 | 18.1 | 2.1 | 1.5 | 1.9 | 1.6 | 150 |

TABLE No. 11.

Showing the number of deaths from the Seven Principal Zymotic Diseases in the Borough of Oldham, during the years 1877-1905.

| 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 | 132,171 | 15 | 139 | 42 | 18 | 68 | 16 | 56 | 354 |
| 1893 | 132,738 | 65 | 29 | 16 | 16 | 56 | 26 | 140 | 348 |
| 1894 | 133,313 | 22 | 56 | 21 | 39 | 58 | 15 | 46 | 257 |
| 1895 | 133,888 | 23 | 97 | 16 | 25 | 57 | 26 | 143 | 387 |
| 1896 | 134,475 | ... | 165 | 56 | 34 | 53 | 23 | 72 | 403 |
| 1897 | 135,045 | ... | 96 | 21 | 9 | 77 | 19 | 145 | 367 |
| 1898 | 135,617 | | 87 | 24 | 10 | 65 | 23 | 114 | 323 |
| 1899 | 136,210 | ... | 49 | 46 | 21 | 54 | 18 | 138 | 326 |
| 1900 | 136,797 | 3 | 108 | 54 | 20 | 89 | 17 | 76 | 367 |
| 1901 | 137,382 | | 73 | 41 | 13 | 30 | 9 | 171 | 337 |
| 1902 | 138,091 | 7 | 103 | 39 | 49 | 29 | 13 | 42 | 282 |
| 1903 | 138,786 | 23 | 43 | 30 | 58 | 111 | 12 | 47 | 324 |
| 1904 | 139,497 | 14 | 70 | 22 | 34 | 37 | 22 | 117 | 316 |
| 1905 | 140,225 | 5 | 65 | 45 | 11 | 57 | 12 | 98 | 293 |

TABLE No 12.

Weekly Means of Meteorological Observations for the year 1905.

| 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. | Maximum in Sun Black Bulb | Maximum in Sun Black Bulb in Vacuo | Minimum on Grass. | Temperature 12in. below surface. | Temperature 4 ft below surface. | | | |
| 1905 | | | | | | | | | | | | | | |
| January 7 | 30.17 | 41 | 41 | 40 | 92 | 47 | 42 | 44 | 48 | 36 | 40 | 1.79 | 4 | 8 |
| 14 | 30.13 | 39 | 39 | 37 | 84 | 44 | 31 | 44 | 48 | 37 | 41 | .95 | 6 | 7 |
| 21 | 29.93 | 32 | 32 | 32 | 99 | 38 | 29 | 40 | 52 | 32 | 41 | ... | ... | 3 |
| 28 | 30.51 | 35 | 35 | 35 | 100 | 38 | 31 | 39 | 43 | 31 | 40 | .66 | 3 | 8 |
| February 4 | 30.29 | 43 | 43 | 42 | 92 | 45 | 38 | 48 | 56 | 34 | 40 | .48 | 5 | 4 |
| 11 | 30.36 | 40 | 40 | 39 | 92 | 44 | 37 | 46 | 50 | 37 | 40 | .58 | 4 | 9 |
| 18 | 30.29 | 42 | 42 | 41 | 97 | 46 | 37 | 46 | 53 | 37 | 41 | .74 | 6 | 5 |
| 25 | 30.18 | 35 | 35 | 34 | 90 | 39 | 35 | 44 | 59 | 34 | 40 | .22 | 2 | 7 |
| March 4 | 29.58 | 37 | 37 | 36 | 91 | 41 | 33 | 44 | 60 | 34 | 40 | 1.68 | 6 | 7 |
| 11 | 28.21 | 42 | 42 | 40 | 85 | 46 | 36 | 48 | 61 | 36 | 40 | 1.20 | 7 | 9 |
| 18 | 29.22 | 44 | 44 | 41 | 79 | 48 | 39 | 52 | 73 | 39 | 41 | 2.38 | 7 | 4 |
| 25 | 29.29 | 47 | 47 | 43 | 73 | 52 | 40 | 60 | 80 | 39 | 41 | .17 | 1 | 5 |
| April 1 | 29.94 | 45 | 45 | 42 | 78 | 48 | 38 | 56 | 77 | 41 | 42 | 2.14 | 5 | 4 |
| 8 | 29.96 | 41 | 41 | 38 | 77 | 47 | 39 | 53 | 79 | 40 | 42 | 2.11 | 6 | 4 |
| 15 | 29.66 | 46 | 46 | 44 | 82 | 49 | 40 | 55 | 73 | 41 | 43 | .38 | 3 | 4 |
| 22 | 30.07 | 40 | 40 | 36 | 69 | 47 | 37 | 54 | 80 | 40 | 43 | .79 | 4 | 8 |
| 29 | 29.83 | 45 | 45 | 43 | 85 | 49 | 40 | 56 | 77 | 42 | 43 | .77 | 5 | 7 |
| May 6 | 29.91 | 46 | 46 | 43 | 79 | 50 | 40 | 58 | 80 | 44 | 43 | 1.63 | 5 | 5 |
| 13 | 30.34 | 50 | 50 | 47 | 78 | 56 | 42 | 65 | 87 | 46 | 45 | .11 | 2 | 4 |
| 20 | 30.38 | 53 | 53 | 48 | 69 | 58 | 44 | 70 | 94 | 48 | 46 | .60 | 7 | 4 |
| 27 | 30.07 | 50 | 50 | 44 | 63 | 55 | 41 | 64 | 88 | 48 | 47 | ... | ... | 5 |

| | | | | | | | | | | | | | | | |
|---------|----------|----|----|----|----|----|----|----|-----|----|----|----|-------|-----------------|----|
| June | 3 30-15 | 58 | 58 | 53 | 71 | 63 | 49 | 71 | 92 | 45 | 51 | 48 | .43 | 4 | 8 |
| | 10 30-11 | 55 | 55 | 49 | 67 | 59 | 45 | 68 | 92 | 41 | 51 | 49 | .04 | 1 | 4 |
| | 17 29-95 | 58 | 58 | 53 | 71 | 65 | 47 | 78 | 106 | 45 | 54 | 49 | .54 | 3 | 4 |
| | 24 30-20 | 62 | 62 | 58 | 78 | 66 | 52 | 74 | 95 | 48 | 56 | 51 | 4.30 | 4 | 4 |
| July | 1 30-02 | 63 | 63 | 58 | 72 | 71 | 56 | 80 | 90 | 51 | 59 | 52 | .63 | 3 | 5 |
| | 8 30-22 | 63 | 63 | 55 | 59 | 65 | 51 | 76 | 101 | 45 | 59 | 53 | .04 | 2 | 3 |
| | 15 30-21 | 66 | 66 | 61 | 73 | 73 | 59 | 83 | 108 | 55 | 62 | 55 | 1.34 | 4 | 6 |
| | 22 30-21 | 61 | 61 | 56 | 75 | 67 | 55 | 76 | 101 | 50 | 62 | 56 | .48 | 3 | 7 |
| | 29 30-36 | 60 | 60 | 56 | 76 | 65 | 55 | 73 | 92 | 57 | 61 | 56 | 2.41 | 6 | 7 |
| August | 5 29-82 | 58 | 58 | 54 | 76 | 64 | 52 | 69 | 90 | 49 | 58 | 57 | 1.82 | 5 | 9 |
| | 12 30-27 | 56 | 56 | 53 | 81 | 61 | 50 | 68 | 88 | 45 | 56 | 55 | 1.25 | 7 | 8 |
| | 19 30-17 | 59 | 59 | 55 | 76 | 66 | 53 | 72 | 93 | 47 | 57 | 55 | 1.63 | 2 | 5 |
| | 26 29-88 | 58 | 58 | 53 | 71 | 62 | 51 | 71 | 95 | 48 | 56 | 54 | 3.59 | 5 | 7 |
| Septem. | 2 29-89 | 57 | 57 | 53 | 75 | 61 | 51 | 69 | 89 | 58 | 56 | 55 | 1.21 | 5 | 7 |
| | 9 29-83 | 57 | 57 | 55 | 85 | 60 | 52 | 64 | 77 | 49 | 55 | 55 | 1.79 | 7 | 8 |
| | 16 30-18 | 51 | 51 | 49 | 86 | 59 | 45 | 65 | 88 | 34 | 51 | 54 | 2.05 | 6 | 6 |
| | 23 30-25 | 53 | 53 | 49 | 74 | 52 | 46 | 65 | 86 | * | 50 | 53 | | ... | 7 |
| | 30 29-95 | 51 | 51 | 47 | 74 | 55 | 46 | 62 | 82 | * | 48 | 52 | .46 | 4 | 7 |
| October | 7 29-92 | 49 | 49 | 44 | 67 | 51 | 40 | 58 | 76 | * | 46 | 51 | 1.98 | 4 | 7 |
| | 14 30-39 | 47 | 47 | 45 | 86 | 54 | 45 | 54 | 62 | * | 47 | 51 | .39 | 3 | 10 |
| | 21 30-10 | 40 | 40 | 37 | 77 | 45 | 34 | 50 | 73 | * | 41 | 49 | 2.15 | 5 | 4 |
| | 28 29-40 | 44 | 44 | 43 | 92 | 48 | 40 | 52 | 63 | * | 41 | 46 | 1.30 | 7 | 7 |
| Novem. | 4 30-21 | 42 | 42 | 40 | 85 | 48 | 35 | 53 | 67 | * | 38 | 48 | .64 | 1 | 7 |
| | 11 29-70 | 44 | 44 | 43 | 92 | 48 | 39 | 50 | 60 | * | 40 | 46 | 1.60 | 6 | 6 |
| | 18 29-77 | 38 | 38 | 36 | 83 | 42 | 34 | 45 | 53 | * | 38 | 45 | .73 | 5 | 7 |
| | 25 29-89 | 38 | 38 | 37 | 91 | 41 | 34 | 43 | 51 | * | 35 | 44 | 1.15 | 4 | 9 |
| Decem. | 2 29-76 | 42 | 42 | 41 | 92 | 45 | 36 | 44 | 54 | 33 | 37 | 43 | 2.55 | 7 | 8 |
| | 9 30-05 | 44 | 44 | 43 | 92 | 48 | 40 | 48 | 54 | 37 | 40 | 43 | .48 | 4 | 8 |
| | 16 30-50 | 41 | 41 | 39 | 85 | 43 | 37 | 45 | 50 | 35 | 37 | 43 | .06 | 2 | 8 |
| | 23 30-23 | 42 | 42 | 41 | 92 | 45 | 39 | 45 | 47 | 37 | 39 | 43 | 1.18 | 4 | 9 |
| | 30 29-92 | 37 | 37 | 36 | 91 | 42 | 33 | 43 | 48 | 28 | 35 | 42 | .25 | 2 | 5 |
| Means | 29-98 | 48 | 48 | 45 | 79 | 52 | 42 | 58 | 74 | 39 | 44 | 47 | 57.85 | Tot als. 213 | 6 |

* Instrument out of Order.

TABLE No. 13.

Prices of Coal, Bread, Flour, Butchers' Meat, and Potatoes, and the number of Paupers relieved in Oldham, 1885-1905.

| | 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 $\frac{1}{4}$ | 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 |
| 1901 | 12 7 | ... | 21 4 $\frac{1}{2}$ | 4 $\frac{3}{8}$ | 9 0 $\frac{1}{2}$ | 1,198 |
| 1902 | 10 9 $\frac{1}{4}$ | ... | 21 9 $\frac{3}{4}$ | 4 $\frac{7}{8}$ | 7 0 $\frac{1}{2}$ | 1,175 |
| 1903 | 9 5 | ... | 22 6 | 4 $\frac{3}{4}$ | 10 7 $\frac{1}{2}$ | 1,213 |
| 1904 | 9 2 | ... | 24 0 | 4 $\frac{1}{4}$ | 9 1 $\frac{1}{2}$ | 1,361 |
| 1905 | 9 0 | ... | 24 0 | 4 $\frac{1}{16}$ | 6 3 $\frac{1}{2}$ | 1,318 |

TABLE No. 14.

Return of Inquests held in Oldham, touching the cause of death of any person, for the year ended 30th December, 1905.

| INQUESTS. | Males | Females. |
|--|--------|----------|
| Infants (Legitimate), under 1 year | 14 | 8 |
| „ 1 year and under 7 years | 7 | 4 |
| Infants (Illegitimate or unknown) under 1 year | 1 | ... |
| „ 1 year and under 7 years | ... | ... |
| Children, 7 years and under 16 | 2 | |
| Youths, 16 years and under 25 | 4 | 3 |
| Adults, 25 years and under 60 | 57 | 23 |
| Aged, 60 years and above | 22 | 22 |
| Total | 107 | 60 |
| VERDICTS. | Males. | Females. |
| Murder | ... | ... |
| Manslaughter | ... | . |
| Suicide, while Insane | 11 | 3 |
| Accidental Death | 44 | 16 |
| Open Verdicts | 7 | 2 |
| Excessive Drinking | 2 | 1 |
| Natural Causes | 43 | 38 |
| Found Drowned | ... | ... |
| Stillborn | ... | ... |
| Disease aggravated by neglect | ... | ... |
| Total | 107 | 60 |

Total Fees and Costs, £309 19s. 4d.

TABLE

COUNTY BOROUGH

Deaths Registered at Several Groups of Ages from Different Causes

| CAUSE OF DEATH. | AGES. | | | | | | | | | | | | | TOTALS. |
|--|--------|--------|---------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------------|---------|
| | 0 to 1 | 1 to 5 | Total under 5 years | 5 to 15 | 15 to 25 | 25 to 35 | 35 to 45 | 45 to 55 | 55 to 60 | 60 to 65 | 65 to 75 | 75 to 85 | 85 and upwards | |
| <i>Classes.</i> | | | | | | | | | | | | | | |
| I.—SPECIFIC FEBRILE, OR ZYMOTIC DISEASES ... | 128 | 147 | 275 | 52 | 50 | 63 | 56 | 47 | 21 | 22 | 16 | 7 | 2 | 611 |
| II.—PARASITIC DISEASES ... | 4 | ... | 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 |
| III.—DIETETIC DISEASES ... | ... | ... | ... | ... | ... | 1 | ... | 4 | .. | ... | ... | ... | ... | 5 |
| IV.—CONSTITUTIONAL DISEASES... | 3 | 2 | 5 | 6 | 5 | 11 | 29 | 36 | 32 | 15 | 29 | 4 | ... | 172 |
| V.—DEVELOPMENTAL DISEASES... | 74 | ... | 74 | ... | ... | ... | ... | ... | ... | 1 | 26 | 43 | 3 | 147 |
| VI.—LOCAL DISEASES ... | 188 | 148 | 336 | 57 | 52 | 68 | 106 | 188 | 109 | 134 | 223 | 82 | 12 | 1367 |
| VII.—DEATHS FROM VIOLENCE | 6 | 3 | 9 | 2 | 3 | 6 | 14 | 10 | 7 | 5 | 7 | 2 | 1 | 66 |
| VIII.—DEATHS FROM ILL-DEFINED AND NOT SPECIFIED CAUSES ... | 105 | 3 | 108 | 1 | 3 | 5 | 5 | 7 | 11 | 5 | 10 | 3 | ... | 158 |
| TOTALS | 508 | 303 | 811 | 118 | 113 | 154 | 210 | 292 | 180 | 182 | 311 | 141 | 18 | 2530 |
| <i>I.—SPECIFIC FEBRILE, OR ZYMOTIC DISEASES.</i> | | | | | | | | | | | | | | |
| <i>1. Miasmatic Diseases.</i> | | | | | | | | | | | | | | |
| Smallpox | ... | ... | ... | ... | 1 | 1 | 1 | 1 | 1 | ... | ... | ... | ... | 5 |
| Measles..... | 19 | 43 | 62 | 3 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 65 |
| Scarlet Fever .. | ... | 24 | 24 | 17 | 4 | ... | ... | ... | ... | ... | ... | ... | ... | 45 |
| Typhus | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Whooping Cough | 23 | 33 | 56 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 57 |
| Diphtheria | ... | 8 | 8 | 3 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 11 |
| Simple Continued and Ill-defined Fever | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Enteric or Typhoid Fever ... | ... | 1 | 1 | 3 | 1 | 3 | 3 | 1 | ... | ... | ... | ... | ... | 12 |
| Tabes Mesenterica | 2 | 2 | 4 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 5 |
| Tubercular Meningitis, Hydrocephalus | 3 | 12 | 15 | 7 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 23 |
| Phthisis | 2 | 1 | 3 | 9 | 34 | 47 | 40 | 33 | 16 | 12 | 10 | 1 | 1 | 206 |
| Other Forms of Tuberculosis, Scrofula | 3 | 5 | 8 | 5 | 5 | 2 | 5 | 2 | 2 | ... | 1 | ... | ... | 30 |
| Other Miasmatic Diseases | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | 1 |
| Influenza | 2 | 1 | 3 | 2 | 1 | 2 | 1 | 6 | 1 | 2 | 3 | 3 | ... | 24 |
| <i>2. Diarrhœal Diseases.</i> | | | | | | | | | | | | | | |
| Simple Cholera | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Diarrhœa, Dysentery | 68 | 17 | 85 | 1 | ... | 2 | ... | 1 | ... | 6 | ... | 2 | 1 | 98 |

No. 15.

OF OLDHAM.

during 52 Weeks ending December 30th, 1905.

| 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 | Total Deaths in Public Institutions. |
| 64 | 42 | 36 | 53 | 43 | 62 | 57 | 44 | 66 | 49 | 42 | 53 | 105 |
| ... | ... | ... | 2 | ... | ... | 1 | 1 | ... | ... | ... | ... | ... |
| ... | ... | 1 | ... | 1 | ... | 2 | ... | ... | 1 | ... | ... | 4 |
| 13 | 13 | 13 | 16 | 15 | 11 | 13 | 16 | 14 | 18 | 14 | 16 | 38 |
| 12 | 12 | 10 | 8 | 18 | 4 | 13 | 14 | 20 | 8 | 13 | 15 | 5 |
| 111 | 85 | 113 | 139 | 118 | 116 | 142 | 86 | 119 | 99 | 99 | 140 | 261 |
| 4 | 6 | 5 | 4 | 6 | 3 | 6 | 4 | 5 | 4 | 13 | 6 | 42 |
| 13 | 14 | 7 | 19 | 16 | 8 | 11 | 21 | 18 | 10 | 10 | 11 | 14 |
| 217 | 172 | 185 | 241 | 217 | 204 | 245 | 186 | 242 | 189 | 191 | 241 | 469 |
| ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 1 | 1 | 1 | 5 |
| 7 | 12 | ... | 7 | ... | 7 | 7 | 3 | 13 | 5 | 2 | 2 | ... |
| 5 | 2 | 2 | 2 | 4 | 4 | 3 | 5 | 8 | 3 | 5 | 2 | 20 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 10 | 2 | 3 | 8 | 5 | 5 | 2 | 7 | 1 | 5 | 4 | 5 | 1 |
| 2 | 1 | 1 | ... | ... | 1 | 2 | 2 | 2 | ... | ... | ... | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1 | ... | ... | 1 | 1 | 1 | ... | 2 | 3 | ... | 2 | 1 | 7 |
| ... | ... | 2 | ... | ... | ... | 1 | 1 | 1 | ... | ... | ... | 1 |
| ... | 1 | 2 | 4 | 2 | 3 | 1 | 3 | 1 | ... | 1 | 5 | 2 |
| 16 | 11 | 14 | 18 | 23 | 22 | 24 | 7 | 16 | 18 | 16 | 21 | 49 |
| 2 | ... | 3 | 3 | 3 | 4 | 1 | ... | 5 | 4 | 2 | 3 | 7 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... |
| 2 | 2 | 1 | 2 | 1 | ... | 4 | 2 | 3 | 2 | 2 | 3 | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 18 | 11 | 6 | 7 | 3 | 13 | 6 | 7 | 8 | 9 | 6 | 4 | 1 |

TABLE No. 15—

[illegible]

TABLE No. 15—

| CAUSE OF DEATH. | AGES. | | | | | | | | | | | | | Totals. |
|--|--------|--------|---------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------------|---------|
| | 0 to 1 | 1 to 5 | Total under 5 years | 5 to 15 | 15 to 25 | 25 to 35 | 35 to 45 | 45 to 55 | 55 to 60 | 60 to 65 | 65 to 75 | 75 to 85 | 85 and upwards | |
| V.—DEVELOPMENTAL DISEASES. | | | | | | | | | | | | | | |
| Premature Birth..... | 67 | ... | 67 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 67 |
| Atelectasis | 7 | ... | 7 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 7 |
| Congenital Malformations... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Old Age | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 26 | 43 | 3 | 73 |
| VI.—LOCAL DISEASES. | | | | | | | | | | | | | | |
| 1. Diseases of Nervous System. | | | | | | | | | | | | | | |
| Inflammation of Brain or Membranes | 14 | 23 | 37 | 10 | 2 | ... | 1 | 2 | ... | ... | ... | ... | ... | 52 |
| Apoplexy, Softening of Brain, Hemiplegia, Brain Paralysis. | 1 | 1 | 2 | 1 | 1 | 2 | 6 | 18 | 16 | 22 | 48 | 14 | 1 | 131 |
| Insanity, General Paralysis of the Insane | ... | ... | ... | ... | ... | 3 | 6 | 5 | 1 | 1 | 3 | 2 | 1 | 22 |
| Epilepsy | ... | ... | ... | ... | 1 | 2 | 4 | 2 | ... | 1 | 2 | 1 | ... | 13 |
| Convulsions | 28 | 7 | 35 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 36 |
| Laryngismus Stridulus (Spasm of Glottis) | 2 | 2 | 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 |
| Disease of Spinal Cord, Paraplegia, Paralysis Agitans... | 2 | ... | 2 | 2 | ... | 1 | 2 | 3 | ... | 1 | 2 | 1 | ... | 14 |
| Other Diseases of Nervous System | ... | ... | ... | 4 | ... | ... | ... | 3 | ... | 1 | 1 | ... | ... | 9 |
| 2. Diseases of Organs of Special Sense. | | | | | | | | | | | | | | |
| Of Ear, Eye, Nose | 2 | 2 | 4 | 3 | 1 | 2 | ... | 3 | ... | ... | ... | ... | ... | 13 |
| 3. Diseases of Circulatory System. | | | | | | | | | | | | | | |
| Pericarditis | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | 1 |
| Acute Endocarditis..... | ... | ... | ... | 1 | 1 | 2 | 1 | ... | 2 | ... | 1 | ... | ... | 8 |
| Valvular Diseases of Heart ... | ... | ... | ... | 2 | 4 | 4 | 5 | 11 | 5 | 7 | 9 | 2 | ... | 49 |
| Other Diseases of Heart | 10 | 2 | 12 | 8 | 7 | 10 | 13 | 40 | 27 | 26 | 45 | 18 | 4 | 210 |
| Aneurism | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | ... | ... | 2 |
| Embolism, Thrombosis | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 |
| Other Diseases of Blood Vessels | 1 | ... | 1 | ... | ... | 1 | ... | 3 | 2 | 4 | 9 | 4 | 1 | 25 |
| 4. Diseases of Respiratory System. | | | | | | | | | | | | | | |
| Laryngitis | ... | 3 | 3 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 4 |
| Croup | 2 | 5 | 7 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 8 |
| Emphysema, Asthma | ... | ... | ... | ... | ... | ... | 1 | 1 | 1 | 1 | 1 | 1 | ... | 6 |
| Bronchitis | 55 | 23 | 78 | ... | 2 | 4 | 14 | 29 | 19 | 30 | 59 | 25 | 4 | 264 |
| Pneumonia | 28 | 63 | 91 | 15 | 8 | 16 | 20 | 18 | 13 | 16 | 17 | 6 | ... | 220 |
| Pleurisy | ... | 1 | 1 | ... | 2 | 1 | ... | 2 | ... | 2 | 1 | ... | ... | 9 |
| Other Diseases of Respiratory System | 1 | ... | 1 | ... | 2 | 1 | 1 | 1 | ... | ... | ... | ... | ... | 6 |

Continued.

| WARDS. | | | | | | | | | | | | Total Deaths in Public Institu- tions. |
|---------------|----------------|---------|---------------|---------------|----------------|---------------|-----------------|------------------|-------|---------------|----------------|--|
| 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 | |
| 6 | 4 | 6 | 1 | 10 | 1 | 6 | 8 | 9 | 3 | 8 | 5 | 1 |
| 1 | ... | ... | 1 | ... | ... | ... | 1 | 2 | 1 | 1 | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 5 | 8 | 4 | 6 | 8 | 3 | 7 | 5 | 9 | 4 | 4 | 10 | 3 |
| 4 | 3 | 2 | 6 | 6 | 1 | 5 | 2 | 9 | 3 | 3 | 8 | 4 |
| 13 | 8 | 10 | 14 | 10 | 11 | 13 | 6 | 12 | 9 | 13 | 12 | 51 |
| 1 | 2 | 1 | 5 | 2 | 5 | 4 | 1 | ... | 1 | ... | ... | 8 |
| 2 | 3 | 2 | ... | 2 | 1 | ... | ... | 2 | ... | 1 | ... | 11 |
| 2 | 2 | 1 | 4 | 3 | 3 | 2 | 2 | 3 | 5 | 4 | 5 | ... |
| ... | ... | ... | ... | ... | ... | 2 | 1 | 1 | ... | ... | ... | ... |
| 2 | 1 | 1 | 1 | 1 | 1 | 2 | ... | 1 | ... | 1 | 3 | 6 |
| ... | ... | ... | 2 | 2 | ... | ... | 2 | ... | 1 | ... | 2 | 2 |
| 1 | 1 | ... | 1 | 1 | 1 | ... | ... | 4 | 1 | 2 | 1 | 6 |
| ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| 1 | 1 | 2 | ... | 1 | ... | 2 | ... | ... | 1 | ... | ... | ... |
| 3 | 4 | 9 | 3 | 1 | 2 | 5 | 4 | 5 | 4 | 5 | 4 | 3 |
| 13 | 10 | 15 | 24 | 21 | 24 | 16 | 23 | 12 | 10 | 18 | 24 | 43 |
| 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | 2 | 2 | 3 | 1 | 6 | 1 | 2 | 1 | 3 | 2 | 2 | 30 |
| 1 | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 |
| 1 | ... | ... | 1 | 1 | 1 | ... | 2 | ... | ... | ... | 2 | ... |
| ... | ... | 1 | ... | 1 | 1 | 2 | ... | ... | ... | ... | 1 | 4 |
| 25 | 15 | 20 | 41 | 25 | 14 | 32 | 13 | 21 | 19 | 18 | 21 | 22 |
| 20 | 10 | 18 | 12 | 18 | 22 | 21 | 12 | 23 | 21 | 14 | 29 | 20 |
| 1 | ... | 2 | ... | ... | 1 | 1 | ... | ... | 1 | ... | 3 | ... |
| 1 | ... | ... | 1 | ... | ... | ... | 1 | 1 | 2 | ... | ... | 1 |

TABLE No. 15—

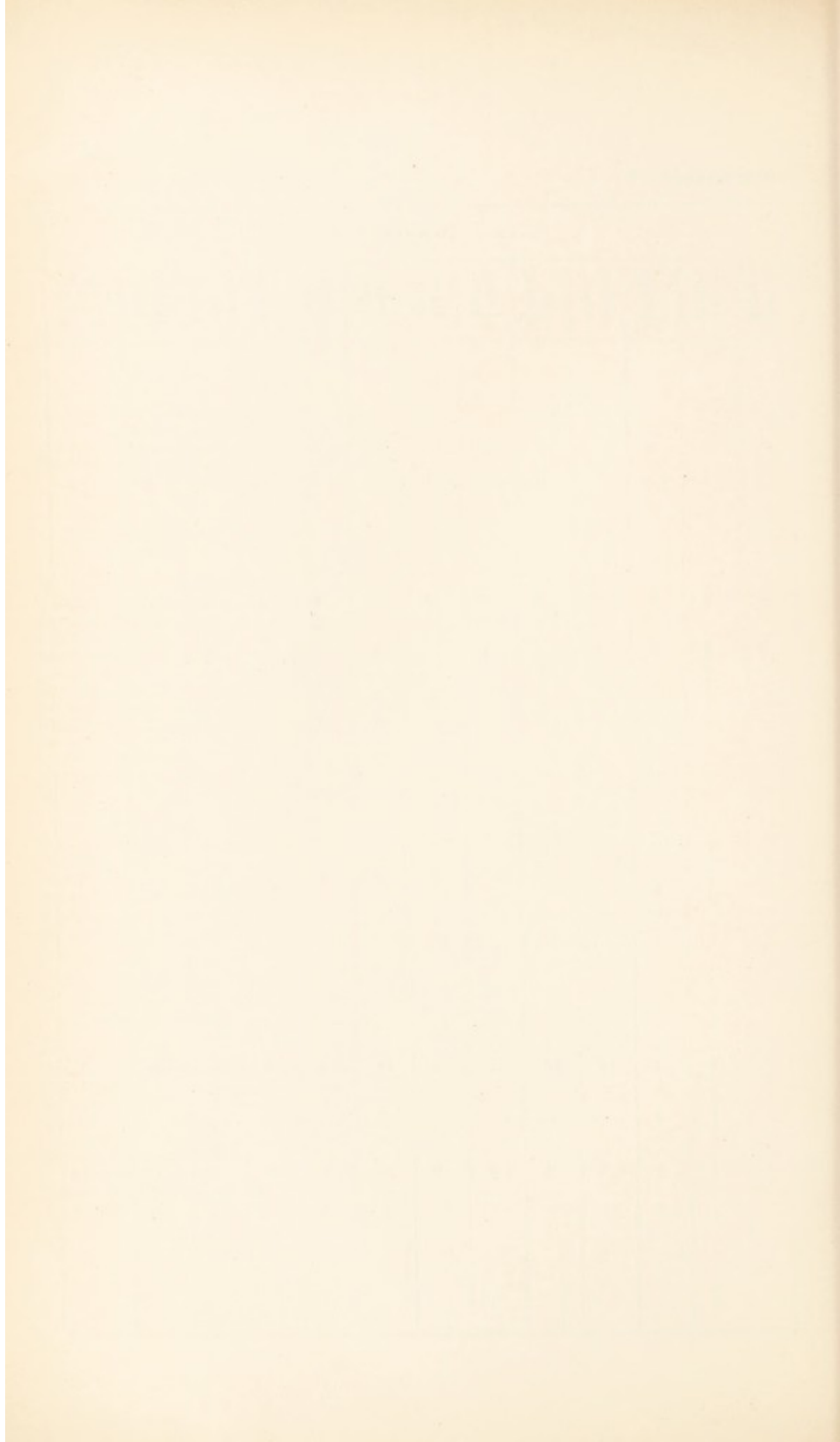
| CAUSE OF DEATH. | AGES. | | | | | | | | | | | | | TOTALS. |
|--|--------|--------|---------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------------|---------|
| | 0 to 1 | 1 to 5 | Total under 5 years | 5 to 15 | 15 to 25 | 25 to 35 | 35 to 45 | 45 to 55 | 55 to 60 | 60 to 65 | 65 to 75 | 75 to 85 | 85 and upwards | |
| <i>5. Diseases of Digestive System.</i> | | | | | | | | | | | | | | |
| Dentition | 7 | 9 | 16 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 16 |
| Sore Throat, Quinsy | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 1 |
| Diseases of Stomach | 12 | 1 | 13 | ... | 3 | 2 | 2 | 5 | 1 | 3 | 3 | 1 | ... | 33 |
| Enteritis | 7 | 1 | 8 | 1 | 1 | ... | 1 | 3 | ... | ... | ... | ... | ... | 14 |
| Obstructive Diseases of Intestines | 5 | 1 | 6 | 1 | 2 | 4 | 2 | 3 | 2 | ... | 1 | 1 | 1 | 23 |
| Hernia | ... | 1 | 1 | ... | 1 | ... | ... | 1 | 1 | 1 | 2 | 1 | ... | 8 |
| Peritonitis | ... | 1 | 1 | 3 | 3 | 1 | 2 | 1 | 1 | ... | 2 | ... | ... | 14 |
| Ascites | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Cirrhosis of Liver | ... | ... | ... | ... | ... | ... | 4 | 12 | 3 | 4 | 3 | ... | ... | 26 |
| Jaundice and other Diseases of Liver | 4 | ... | 4 | ... | 1 | ... | ... | 1 | 1 | 3 | ... | 1 | ... | 11 |
| Other Diseases of Digestive System | 3 | ... | 3 | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | ... | 5 |
| <i>6. Diseases of Lymphatic System.</i> | | | | | | | | | | | | | | |
| Of Lymphatics and of Spleen | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| <i>7. Diseases of Glandlike Organs of Uncertain Use.</i> | | | | | | | | | | | | | | |
| Bronchocele, Addison's Disease | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| <i>8. Diseases of Urinary System.</i> | | | | | | | | | | | | | | |
| Nephritis | ... | ... | ... | 2 | 4 | 1 | 3 | 7 | 8 | 3 | 2 | ... | ... | 30 |
| Bright's Disease, Albuminuria | ... | ... | ... | 2 | ... | 1 | 6 | 7 | 4 | 4 | 4 | ... | ... | 28 |
| Disease of Bladder or of Prostate | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 2 | 3 | 4 | ... | 10 |
| Other Diseases of the Urinary System | ... | ... | ... | ... | ... | ... | 4 | 1 | ... | 1 | 2 | ... | ... | 8 |
| <i>9. Diseases of Reproductive System.</i> | | | | | | | | | | | | | | |
| <i>A. Of Organs of Generation.</i> | | | | | | | | | | | | | | |
| Male Organs | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Female Organs | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| <i>B. Of Parturition.</i> | | | | | | | | | | | | | | |
| Abortion, Miscarriage | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Puerperal Convulsions | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | 2 |
| Placenta prævia, Flooding | ... | ... | ... | ... | 1 | 1 | 1 | ... | ... | ... | ... | ... | ... | 3 |
| Other Accidents of Childbirth | ... | ... | ... | ... | 1 | 4 | 4 | 1 | ... | ... | ... | ... | ... | 10 |
| <i>10. Diseases of Bones and Joints.</i> | | | | | | | | | | | | | | |
| Caries, Necrosis | ... | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | ... | ... | ... | 9 |
| Arthritis, Ostitis, Periostitis | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Other Diseases of Bones and Joints | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | ... | ... | 2 |

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 | Total Deaths in Public Institutions |
| 1 | ... | ... | 3 | ... | 2 | 3 | 1 | ... | 1 | 3 | 2 | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... |
| 1 | 5 | 2 | 2 | 2 | 3 | 7 | 2 | 2 | 2 | ... | 5 | 3 |
| 1 | 1 | 3 | 1 | 2 | 1 | ... | 2 | 1 | 2 | ... | ... | 1 |
| 2 | 3 | 3 | ... | 1 | ... | 3 | ... | 3 | 2 | 2 | 4 | 10 |
| 2 | ... | 1 | ... | 1 | 1 | 1 | 1 | 1 | ... | ... | ... | 6 |
| 2 | ... | ... | 1 | ... | 3 | 3 | 1 | 1 | 1 | 2 | ... | 4 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | 1 | 4 | ... | 6 | 4 | 5 | 1 | 2 | 1 | 2 | ... | 2 |
| 1 | ... | 3 | 2 | 1 | ... | 1 | ... | 2 | 1 | ... | ... | ... |
| ... | ... | 3 | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 |
| 2 | 2 | 2 | 4 | 3 | ... | 3 | 3 | 5 | 1 | 2 | 3 | 1 |
| 1 | 5 | 2 | 3 | 1 | 2 | 2 | 1 | 2 | 2 | 5 | 2 | 6 |
| 1 | 1 | ... | ... | ... | 2 | 1 | 1 | 2 | ... | ... | 2 | 5 |
| ... | 1 | 1 | ... | ... | 1 | ... | ... | 1 | 3 | ... | 1 | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1 | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | ... | ... | ... |
| 1 | 1 | ... | 1 | 1 | 1 | 1 | 1 | ... | ... | 1 | 2 | 1 |
| 2 | 1 | 1 | 2 | ... | 2 | ... | ... | ... | ... | 1 | ... | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | 1 |

Continued.

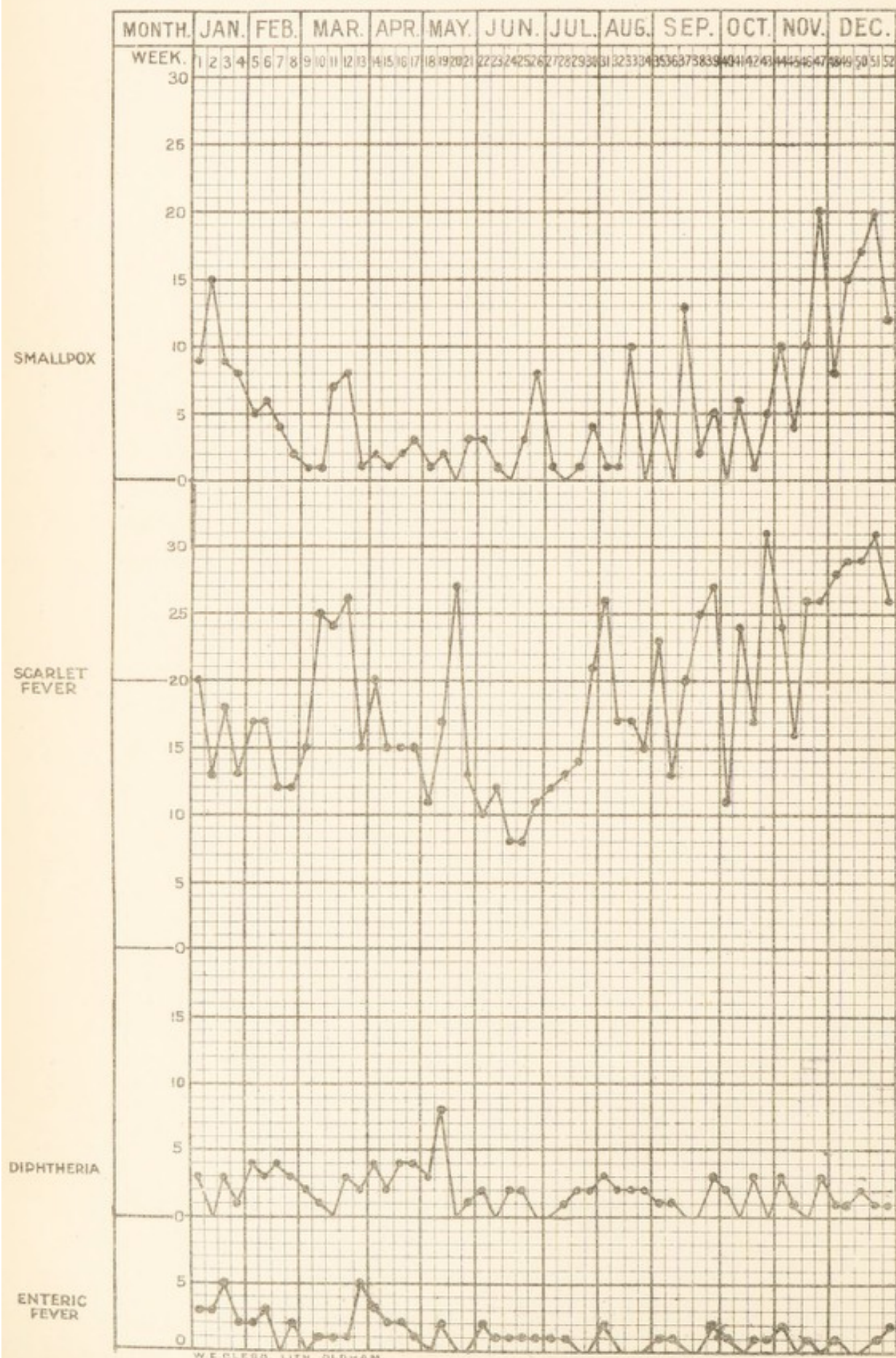
| WARDS. | | | | | | | | | | | | Total Deaths in Public Institu- tions. |
|---------------|----------------|---------|---------------|---------------|----------------|---------------|-----------------|------------------|-------|---------------|----------------|--|
| St. Mary's | St. Peter's | Werneth | West- wood | St. Paul's | Cold- hurst | Hart- ford | Hollin- wood | Clarks- field | Mumps | St. James' | Water- head | |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | 1 | ... | ... | 1 | ... | 1 | ... | 1 | 2 | .. | 1 | 4 |
| 2 | 2 | 3 | 2 | 2 | 2 | 3 | ... | 1 | 3 | 7 | 4 | 26 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... |
| 2 | 2 | 1 | 1 | ... | 1 | ... | 1 | 1 | 1 | 2 | ... | 10 |
| ... | 2 | ... | ... | 1 | ... | ... | ... | 1 | ... | ... | ... | ... |
| ... | ... | ... | ... | 1 | ... | ... | ... | 1 | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | 2 | ... | ... | 1 | 1 | ... | 1 | ... | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | 1 | 1 | 1 | ... | ... | ... | 2 |
| ... | ... | 1 | ... | ... | ... | ... | 1 | ... | ... | 3 | 2 | 1 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 7 | 4 | 2 | 13 | 1 | 5 | 5 | 11 | 13 | 5 | 4 | 6 | 1 |
| 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 |
| 1 | 2 | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | 1 | 3 |
| ... | 1 | 1 | ... | ... | ... | ... | 2 | ... | ... | ... | ... | 2 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 4 | 7 | 4 | 6 | 2 | 3 | 6 | 8 | 3 | 5 | 4 | 4 | 7 |
| ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... |



BOROUGH OF OLDHAM.

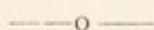
CASES OF INFECTIOUS DISEASE

Notified during the Year 1905.



PART II.

INFECTIOUS DISEASES.



The total number of Infectious Diseases notified during the year 1905, was 2,101. This number is a large increase over the previous year, but it includes 576 cases of Chicken Pox which were not notifiable in that year. Owing to the prevalence of Smallpox, this disease was made notifiable in the month of January. There was also an increase in the number of Scarlet Fever cases, and of cases of Erysipelas, but a decrease in the number of Diphtheria, Enteric and Puerperal Fever cases. The number of notified cases of each disease are—Scarlet Fever 969, Smallpox 281, Erysipelas 100, Diphtheria 98, Enteric Fever 62 and Puerperal Fever 15.

The total number of deaths from the principal Zymotic Diseases are as follows :—Diarrhœa 98, Measles 65, Whooping Cough 57, Scarlet Fever 45, Enteric Fever 12, Diphtheria 11, Puerperal Fever 9, Erysipelas 6, and Smallpox 5. Compared with the previous year, there is a decrease in the number of deaths from all Zymotic Diseases, except Scarlet Fever and Whooping Cough.

The total deaths from the seven principal Zymotics was 293, which is equal to a rate of 2·1 per 1,000 living population. In the year 1904, the number of deaths was 316, and the rate 2·3 per 1,000.

The average Zymotic rate for the whole of England during the year was 1·52; for the 76 large towns 1·88, and for the large Lancashire towns as follows:—Preston 3·15, Liverpool 2·59, Salford 2·57, Burnley 2·33, Manchester 2·25, Oldham 2·10, Blackburn 2·01, and Bolton 1·94.

As regards the various Wards, St. Mary's has a Zymotic rate of 4·0, and Coldhurst and Hollinwood each 3·0, while in Werneth and St Paul's the rate is only 1·0. Diarrhœa and Whooping Cough were the diseases which were the principal causes of the variation in the Ward rate.

SCARLET FEVER.

There were reported during the year 969 cases of the above disease, and of these 42 proved fatal, giving a percentage death-rate of 4·3. There were also three other deaths from this disease registered, which belonged to cases reported in the previous year.

The total death-rate from Scarlet Fever for the year was 0·32. Towards the close of the year the disease showed a tendency to increase, but in a very mild type. In the month of April and May many of the cases were of a very severe type, and five deaths occurred in persons approaching adult life. The disease was most prevalent in Clarksfield and St. Mary's Wards.

Of the total number, 426 or 44 per cent. of the cases were removed to Westhulme Hospital for isolation, and 31 cases were also received from the surrounding townships.

Both in Scarlet Fever and Diphtheria the great majority of cases were in school children.

The Scarlet Fever Death-rate for the whole of England was 0·11 per 1,000.

DIPHThERIA.

The total number of cases of Diphtheria reported during the year was only 98, compared with 158 and 201 in the previous two years, and among these the deaths numbered 14, compared with 33 and 54 in the same years.

The Death-rate for Oldham from this disease is 0·09, while for England it is 0·16. Oldham has a lower death-rate from this disease than any of the eight Lancashire towns.

There has been no outbreak in connection with any of the Schools, nor have any of the Milk supplies been specially implicated.

The disease has been somewhat more prevalent in Clarksfield Ward, but the cases were distributed throughout the whole year and not associated.

ENTERIC OR TYPHOID FEVER.

Sixty-two cases have been notified during the year, and 12 of them died, giving a percentage mortality of 19·3. In 1904 the deaths were 22 per cent. of the total

Twenty-five of the patients were removed to Westhulme, and 9 other cases were received from outside districts. The percentage of deaths in the Hospital cases was 20.

Several cases were kept at home until almost unmanageable, and were practically hopeless from admission.

The Death-rate for the Borough from Typhoid Fever was 0·08 per 1,000, that for the whole of England, 0·09, and Oldham has the lowest rate from this disease of any of the eight large Lancashire towns.

The cases were distributed over the whole year, and we had not the usual run of cases after the Wakes holiday. Clarksfield, Waterhead and St. James's Wards had the largest proportion of cases, and St. Mary's, Werneth and Westwood the smallest.

Two or three cases which are included in the list of those reported were afterwards found not to be cases of this disease, and two persons contracted the disease when visiting other districts.

Five of the patients obtained their milk from one farmer, but these cases were distributed over a period of six months.

In a few cases mussels had formed an article of diet two or three weeks previous to the outset of the illness.

In one of these cases the shell-fish were eaten about March 15th, and the first case was notified on the 29th, and between that date and April 8th four new cases were notified in the same family, and a secondary case on May 8th. In two the illness had a fatal termination.

In one instance four cases, and in another three cases occurred in one house, and were due probably in each house to a slight attack in another member of the family, the nature of whose illness had not been recognised until the secondary cases occurred.

In three other houses there was one secondary case.

A specimen of the blood is taken for Widdall's test in all the Oldham cases before removal to Hospital.

SMALLPOX.

The outbreak of this disease, which commenced at the latter end of August, 1904, in Copster Hill Road, continued into the year 1905, and the following extracts from the Report, furnished at the request of the Local Government Board, give a history of its prevalence during the year :—

“ In January of this year, cases were still occurring in connection with the schools, viz.:—The Freehold Council Schools, and Christ Church Schools, Chadderton, and sporadic cases continued to arise in connection with the former school until the month of June, when the school was closed for a period by the Educational Committee on the advice of their Medical Officer.

In July there were very few cases, and the Smallpox Hospital became empty on two occasions. In the middle of August a case was reported, and on enquiry, three families, all related, were found to be affected, several of the members of these families being at their work with the disease, and others were found who had evidently had it and recovered. About this date, a child, probably connected with these families, but in another district, was found at school with the eruption out.

The parents of every child in the same class were warned as to the possibility of the appearance of the disease in their family, but as the incubation period terminated in the Wakes Week (the annual holiday), the usual control and supervision could not be exercised owing to the absence of the families at the seaside or in the country.

Two of these contacts actually had the disease while away on their holiday, but in such a slight form that it

was not recognised until their return to Oldham, and the appearance of the eruption in other members of these families or their relations.

Two other contacts from this class contracted the disease, and infected also, other members of their families. One of the children who had the disease at the seaside infected a child during the journey home, and possibly others also, judging from the date of the appearance of the eruption in other cases.

In October and November cases began to occur among the scholars in the North Moor Council School and St. Mary's Parish Church Schools

In the latter school the disease was undoubtedly spread, (1) by a concealed case who had returned to school after recovery, and (2) by the children of another family, who attended school during the illness of one child which was supposed to be suffering from Chicken Pox.

In the North Moor Council School the actual source of the cases could not be found, but there had in all probability been a mild unrecognised case in the school. Both these schools were closed in December until the New Year.

Doubtless, the proper procedure would have been to close all the above-mentioned schools as soon as the disease appeared among the scholars, but the nature of the disease was of such a mild character, and the actual school cases so few in number, while the number of children attending the schools, whose education would have been affected, was very large.

In my last Annual Report I remarked on the mild character of the school cases, and during the present year

the disease has been even milder, and only one person who was connected with this series of cases had the disease in a serious form. This man was an Innkeeper.

In April there were three or four cases in another part of the town, without any apparent connection with the above series, and of a serious and altogether different type of disease. No origin for these cases could be found. In June a tramp, who had just come from Staffordshire, and had the eruption out when he reached the town, was the cause of a small series of cases also of a somewhat serious type of disease.

DEATHS — Five deaths have been ascribed to Smallpox during the year, but really only three were actually due to the disease, as in two cases the attack was a very mild one, and death occurred from other causes, in one case from Pneumonia, and in the other from Tubercular Meningitis.

The actual number of cases reported indicate that the disease was much more prevalent than it actually has been, a considerable portion being secondary cases in houses where the inmates refused to undergo vaccination. In several instances almost the entire household were removed to Hospital.

With the exception of one or two doubtful cases, and a few in which the person affected was convalescent when discovered, all cases have been removed to Hospital."

The mild character of the disease rendered it exceedingly difficult to exercise control over the spread of the disease. In many cases it was genuinely mistaken for Chicken-pox by the householder, and in other cases intentionally so. Three cases were brought before the magistrates, and one was fined the nominal fine of 5s., and the other cases

dismissed. The magistrates decided that a householder could not be fined for not reporting Smallpox, if he said he did not know it was Smallpox or thought it was Chicken-pox, and though Chicken-pox was notifiable he could not be prosecuted for not notifying a case if it happened to be Smallpox because it was *not* Chicken-pox. After the above decision it was quite useless taking cases into Court. The fine of 5s. hardly seems an adequate punishment for spreading Smallpox through a school and ultimately necessitating its closure.

In several instances on visiting cases, and examining other members of the families, children were found showing evidence of a recent attack, although the parents had not noticed any illness at all, so mild were the attacks.

The most successful method which was adopted in the current year of preventing the spread of the disease, was that of appointing two nurses, who had had experience of Smallpox, to visit the schools affected, examine the children, and afterwards visit and examine all the absentees from the school and, if no medical man was in attendance, revisit them at intervals of two or three days until they were able to resume school. By this means several cases were discovered, which would never have been reported. The youngest person showing any evidence of vaccination, who contracted the disease, was 17 years of age, while one other, said to be vaccinated, but with no marks, was 15 years old. Not only was the disease exceedingly mild, but a very slight vaccinal condition seemed to protect.

Particulars of the fatal cases and the vaccinal condition of those admitted to Strinesdale Hospital are given in the following tables:—

PARTICULARS OF FATAL CASES.

| Age. | Vaccinated. | Marks. | Remarks. |
|-------|-------------|---------|---------------------------|
| 39 | No | — | Confluent |
| 54 | No | — | Confluent |
| 24 | No | — | Confluent and Hæmorrhagic |
| * 5 | No | — | Mild Case |
| ** 30 | In Infancy | 2 Marks | Mild Case |

* Died of Tubercular Meningitis.

** Died of Pneumonia.

TOTAL CASES AND DEATHS IN VARIOUS AGE PERIODS
IN 1905.

| Ages. | | Under 5 years | 5 and under 10 | 10 and under 15 | 15 and under 20 | 20 and under 40 | 40 and upwds | Total |
|---------------------------|------------------|---------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------|-------|
| Vaccinated in Infancy. | Cases | 0 | 0 | 1 * | 1 | 24 | 26 | 52 |
| | Deaths | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| | Percentage | ... | ... | ... | ... | 4% | ... | 2% |
| Not Vaccinated. | Cases | 19 | 78 | 65 | 29 | 16 | 7 | 214 |
| | Deaths | 0 | 1 ** | 0 | 0 | 2 | 1 | 4 |
| | Percentage | ... | ... | ... | ... | 12.5% | 14.3% | 1.8% |

* Stated to be Vaccinated, but no marks.

** Died from Tubercular Meningitis.

TOTAL CASES AND DEATHS AT VARIOUS AGE PERIODS
DURING THE YEARS 1902-3-4-5.

| Ages. | | Under 5 years | 5 and under 10 | 10 and under 15 | 15 and under 20 | 20 and under 40 | 40 and upwds | Total |
|---|------------------|---------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------|-------|
| Vaccinated in Infancy. | Cases | 0 | 0 | 3 | 17 | 271 | 220 | 511 |
| | Deaths | 0 | 0 | 0 | 0 | 4 | 24 | 28 |
| | Percentage | ... | ... | ... | ... | 1·4% | 10·9% | 5·4% |
| Not Vaccinated before the Disease was contracted. | Cases | 53 | 169 | 146 | 57 | 46 | 17 | 488 |
| | Deaths | 5 | 5 | 1 | 1 | 4 | 6 | 22 |
| | Percentage | 9·4% | 3% | 0·6% | 1·8% | 9% | 35·% | 4·9% |

PUERPERAL FEVER.

Fifteen cases of Puerperal Fever have been reported during the year, and nine of these were fatal.

One case was reported in Waterhead Ward, two in each of the following :—Westwood, St. Paul's, Hartford, Hollinwood and St. James's, and four in Clarksfield Ward.

In only one instance was the same midwife in attendance at two different cases, and there was a very considerable interval between the occurrence of the two attacks.

ERYSIPELAS.

Exactly 100 cases of Erysipelas were notified during the year, but only six of these terminated fatally. A great number of the cases were very mild, partaking more of the

nature of Erythema than of real Erysipelas. Five cases, with one death, occurred in Infants under the age of one year, and the other five fatal cases were in persons of the respective ages of 40, 54, 57, 64 and 71 years.

The child who died from this disease was seven weeks old, and had not been vaccinated.

MEASLES.

This disease was during the year the cause of 65 deaths, 62 of which were in children under the age of five years.

The largest number of deaths were in Clarksfield and St. Peter's Wards, and the schools which were principally affected were Roundthorn and Waterloo Council Schools and St. Mark's Church School. Most of the teachers report cases of Measles which come to their knowledge among their scholars, and the houses are then visited by the Female Inspectors, who give instruction as to isolation, and leave a certificate when the patient or contacts may return to school. This method is of considerable benefit in limiting the spread of the minor diseases, but as there are only two Inspectors, their time is greatly taken up by this work, instead of the more important duty of visiting the houses where births occur, and giving instruction in connection with these. I consider the School Attendance Officers could easily carry out this duty, and with greater promptness, as the first knowledge of the disease most frequently comes to them.

From the Inspectors' Reports, the parents will not yet realise that Measles is a dangerous disease, and there is the greatest difficulty in getting them to use ordinary means of isolation.

CHICKEN POX.

In consequence of several cases of Smallpox being mistaken for this disease, Chicken Pox was made a notifiable disease in the month of January, and with the exception of about five or six cases, every case coming to our knowledge was visited and examined, either by myself or Dr. Buckley. This entailed a considerable amount of work, as over 600 cases in all were in one way or another reported. Several of these were found to be Smallpox and not Chicken Pox, showing the necessity of making this disease notifiable, though at considerable expense. No deaths occurred from this disease.

WHOOPING COUGH.

This disease is dealt with in the same way as measles and most of my remarks under that head also refer to Whooping Cough.

Fifty-seven deaths were ascribed to Whooping Cough, 56 of which were in children under the age of 5 years. Two hundred and forty cases came to our knowledge, and were visited by the Female Inspectors.

CANCER.

The number of deaths ascribed to Cancer is one less than in 1904—viz., 111. The majority of deaths were of persons over the age of 45 years.

SKIN DISEASE.

The Female Inspectors visited 143 cases of Skin Disease of various kinds reported from the schools. A great majority of these were due to a want of cleanliness.

The following table gives the number of cases of those Infectious Diseases which are likely to be conveyed by school contact, which have come to our knowledge in the various schools :—

| NAME OF SCHOOL | Small Pox | Scarlet Fever | Diphtheria | Measles | Whooping Cough | Chicken Pox | Skin Diseases |
|--------------------------------|-----------|---------------|------------|---------|----------------|-------------|---------------|
| Beever Street Council | 6 | 66 | 1 | 77 | 10 | 7 | ... |
| Christ Church, Glodwick ... | ... | 11 | ... | 31 | ... | 13 | 2 |
| Coldhurst Church... .. | 5 | 15 | ... | 20 | 12 | 35 | ... |
| Chaucer Street | 1 | 1 | ... | ... | ... | 1 | ... |
| Derker Council | ... | 36 | 5 | 58 | 6 | 38 | 24 |
| Dunbar Street R. C. | ... | 7 | 2 | 7 | ... | 2 | ... |
| Freehold Council | 12 | 48 | 3 | 6 | 4 | 34 | 15 |
| Glodwick " | 1 | 31 | 4 | 53 | ... | 14 | 10 |
| Greenacres " | ... | 6 | 1 | ... | 2 | 48 | 1 |
| Do. Wesleyans | 1 | 8 | 3 | ... | 1 | 12 | ... |
| Gower Street | 1 | ... | ... | ... | ... | 1 | ... |
| Higginshaw Council... .. | 1 | 12 | ... | 31 | 18 | 5 | 10 |
| Hathershaw " | 1 | 24 | 2 | 48 | ... | 11 | 4 |
| Hollinwood " | 1 | 33 | 1 | 20 | 26 | 38 | 7 |
| Hollins Wesleyans | ... | 16 | 2 | 2 | 18 | 2 | 1 |
| Moorside Church | ... | 3 | 1 | ... | ... | 20 | ... |
| Northmoor Council | 32 | 28 | 1 | 41 | 16 | 12 | 5 |
| Do. Church | 4 | 19 | ... | 3 | 1 | 14 | ... |
| Do. Wesleyan | 1 | 6 | 1 | 18 | 1 | 2 | ... |
| Roundthorn Council | 1 | 33 | 4 | 131 | 2 | 57 | 1 |
| Scottfield " | ... | 18 | ... | 14 | ... | 15 | ... |
| Smith Street " | ... | 8 | 3 | 12 | 10 | 48 | 2 |
| Salem " | ... | 19 | ... | 6 | ... | 4 | ... |
| St. Annes' R. C. | ... | 13 | ... | 10 | 7 | 9 | ... |
| St. Mary's R. C. | 2 | 27 | ... | 14 | 23 | 12 | ... |
| St. Patrick's R. C. | 2 | 7 | 2 | 31 | 7 | 1 | 9 |
| St. Mary's Church | 40 | 47 | 3 | 66 | 21 | 16 | 9 |
| St. Mark's " | ... | 33 | ... | 75 | ... | 4 | 1 |
| St. Peter's " | ... | 11 | 1 | 18 | ... | 1 | 4 |
| St. Stephen's " | ... | 19 | ... | ... | 12 | ... | 1 |
| St. Thomas' " | ... | 13 | ... | 11 | ... | 10 | ... |
| St. Paul's " | ... | 25 | ... | 6 | 2 | 13 | 5 |
| St. Andrew's " | ... | 8 | ... | ... | ... | 1 | ... |
| St. Domingo Street Wesleyan... | ... | 11 | 1 | 12 | 10 | 3 | 13 |
| Waterloo Council | 2 | 39 | 3 | 197 | 3 | 29 | 8 |
| Waterhead Church | ... | 1 | ... | 19 | 4 | 1 | 1 |
| Do. Council | ... | ... | ... | 11 | ... | ... | ... |
| Watersheddings Council | ... | 8 | ... | 42 | 16 | 13 | 4 |
| Wellington Street " | ... | 9 | ... | 3 | ... | 2 | ... |
| Westwood " | 6 | 25 | 2 | 15 | 2 | 2 | ... |
| Werneth " | 8 | 47 | 2 | 15 | 6 | 52 | 6 |
| Totals | 128 | 791 | 48 | 1123 | 240 | 598 | 143 |

MEASURES ADOPTED TO PREVENT THE SPREAD OF INFECTIOUS DISEASE.

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

WESTHULME HOSPITAL —During the year 426 cases of Scarlet Fever, 25 cases of Typhoid, one case of Diphtheria, and 7 cases of Measles were removed from the Borough to this Hospital for isolation and treatment, and in addition 31 cases of Scarlet Fever, nine of Typhoid and one of Diphtheria have been received from the surrounding Townships. The benefits of the Hospital are becoming more and more appreciated, and in several cases application for the admission of children was made, where they could be just as well isolated at home.

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

The nominal accommodation at the Hospital is —

Scarlet Fever block (4 wards) 40 beds.

Typhoid block (4 wards) 48 beds.

Isolation block (4 wards) 10 beds.

STRINESDALE HOSPITAL.—267 cases, including one from an out-district have been removed to this Hospital during the year.

The old Hospital consists of two Wards, one of which has a small Ward partitioned off for use when only three or four patients are in Hospital.

The new portion consists of four Wards, three of six beds and one of eight beds, and another room which has been reserved for a Nurse's room, with baths, lavatories, &c.

The nominal accomodation is in the old Hospital 40 beds, and in the new portion 26 beds, making a total of 66 beds. An iron corridor connects the two buildings.

The small Wards in the new building have been very useful for isolating special cases or for families, and have been used several times for this purpose.

DISINFECTION.—During the year 1,207 houses (or 3,709 rooms) have been disinfected, and 38 entirely stripped and cleaned.

Disinfection of the rooms after infectious disease is generally carried out by burning sulphur. This is probably not quite as effective as some other methods, but it has the advantage of compelling the householders to thoroughly clean and ventilate the rooms before they can be used again.

After Smallpox the walls, &c., of the rooms are all sprayed with a solution of formalin before fumigation.

Bedding, clothing, &c., are removed and disinfected by steam at the Central Depot, and over 15,000 articles have been either disinfected or destroyed during the year.

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

The excreta of Typhoid patients, where no water-closet exists, are received into special receptacles and burnt.

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

During the year the Head Teachers of many of the schools reported regularly, week by week, suspected cases of Measles, Whooping Cough, Chicken Pox, &c., and these were subsequently visited by the Female Inspectors.

A supply of Antitoxin has been kept for urgent or night cases of Diphtheria, and it is also stocked by a local firm of chemists.

A supply of Antitetanic Serum is also kept in stock.

TABLE No. 16.
SCARLET FEVER.

| Ages | Cases Reported. | Deaths of such Cases. | |
|-----------------|-----------------|-----------------------|-------------|
| | | Total. | Percentage. |
| Under 5 years | 292 | 20 | 6·8 |
| 5 to 10 | 471 | 14 | 2·9 |
| 10 to 15... .. | 140 | 3 | 2·1 |
| 15 to 25... .. | 49 | 5 | 10·2 |
| 25 to 35 | 15 | ... | ... |
| 35 to 45 | 1 | ... | ... |
| 45 to 55 | 1 | ... | ... |
| Over 55 | ... | ... | ... |
| Total | 969 | 42 | 4·3 |

TABLE No. 17.

DIPHThERIA.

| Ages. | Cases Reported. | Deaths of such Cases. | |
|-------------------|-----------------|-----------------------|-------------|
| | | Total. | Percentage. |
| Under 5 years ... | 38 | 8 | 21·0 |
| 5 to 10... .. | 26 | 5 | 19·2 |
| 10 to 15... .. | 16 | 1 | 6·2 |
| 15 to 25... .. | 9 | ... | ... |
| 25 to 35... .. | 5 | .. | ... |
| 35 to 45... .. | 1 | ... | ... |
| 45 to 55... .. | 3 | ... | ... |
| Over 55... .. | .. | ... | ... |
| Total | 98 | 14 | 14·2 |

TABLE No. 18.

TYPHOID OR ENTERIC FEVER.

| Ages. | Cases Reported. | Deaths of such Cases. | |
|-------------------|-----------------|-----------------------|------------|
| | | Total. | Percentage |
| Under 5 years ... | 5 | 1 | 20·0 |
| 5 to 10... .. | 10 | 2 | 20·0 |
| 10 to 15 | 8 | 1 | 12·5 |
| 15 to 25... .. | 16 | 2 | 12·5 |
| 25 to 35 | 11 | 2 | 18·1 |
| 35 to 45... .. | 9 | 3 | 33·3 |
| 45 to 55... .. | 1 | 1 | 100·0 |
| Over 55... .. | 2 | ... | ... |
| Total | 62 | 12 | 19·3 |

TABLE No. 19.

Showing the number of Cases of Sickness and the Deaths Registered during the several months of the year 1905 in Oldham.

| MONTHS. | SMALLPOX. | | SCARLET FEVER. | | DIPH- THERIA. | | TYPHOID FEVER. | | PUER- PERAL FEVER. | | TYPHUS FEVER. | | ERYSIPELAS | | MEM- BRANOUS GROUP. | | 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 ... | 41 | 2 | 75 | 1 | 9 | 1 | 13 | 3 | 1 | ... | ... | ... | 6 | ... | ... | ... | ... | ... | ... | ... |
| February .. | 17 | 1 | 54 | 2 | 13 | 2 | 7 | 1 | ... | ... | ... | ... | 9 | 1 | ... | ... | ... | ... | ... | ... |
| March | 18 | ... | 97 | 3 | 7 | 1 | 8 | 1 | 1 | ... | ... | ... | 15 | 2 | ... | ... | ... | ... | ... | ... |
| April | 18 | 1 | 66 | 7 | 14 | ... | 8 | 2 | 4 | ... | ... | ... | 9 | 1 | ... | ... | ... | ... | ... | ... |
| May | 7 | 1 | 71 | 6 | 13 | 2 | 3 | 1 | ... | ... | ... | ... | 5 | ... | ... | ... | ... | ... | ... | ... |
| June | 14 | ... | 45 | 4 | 5 | ... | 5 | 1 | 1 | ... | ... | ... | 7 | ... | ... | ... | ... | ... | ... | ... |
| July | 6 | ... | 65 | 4 | 6 | ... | 2 | ... | 3 | ... | ... | ... | 7 | 1 | ... | ... | ... | ... | ... | ... |
| August ... | 15 | ... | 89 | 1 | 9 | 2 | 3 | ... | 1 | ... | ... | ... | 4 | ... | ... | ... | ... | ... | ... | ... |
| September. | 22 | ... | 90 | 4 | 4 | ... | 3 | 1 | 1 | ... | ... | ... | 8 | ... | ... | ... | ... | ... | ... | ... |
| October ... | 14 | ... | 91 | 1 | 7 | ... | 4 | ... | 2 | ... | ... | ... | 11 | ... | ... | ... | ... | ... | ... | ... |
| November.. | 50 | ... | 107 | 7 | 6 | 3 | 3 | 1 | ... | ... | ... | ... | 11 | ... | ... | ... | ... | ... | ... | ... |
| December.. | 69 | ... | 119 | 5 | 5 | ... | 3 | 1 | 1 | ... | ... | ... | 8 | 1 | ... | ... | ... | ... | ... | ... |
| Totals ... | 281 | 5 | 969 | 45 | 98 | 11 | 62 | 12 | 15 | 9 | ... | ... | 100 | 6 | ... | ... | ... | ... | ... | ... |

TABLE No. 20.

Cases of Infectious Disease notified during the Year 1905.

| 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 | 281 | 1 | 21 | 153 | 43 | 63 | ... |
| Cholera | ... | ... | ... | ... | ... | ... | ... |
| Diphtheria | 98 | ... | 38 | 42 | 9 | 9 | ... |
| Membranous Croup | ... | ... | ... | ... | ... | ... | ... |
| Erysipelas | 100 | 5 | 5 | 5 | 15 | 63 | 7 |
| Scarlet Fever .. | 969 | 13 | 279 | 611 | 49 | 17 | ... |
| Typhus Fever ... | ... | ... | ... | ... | ... | ... | ... |
| Enteric Fever | 62 | ... | 5 | 18 | 16 | 23 | ... |
| Relapsing Fever .. | ... | ... | ... | ... | ... | ... | ... |
| Continued Fever .. | ... | ... | ... | ... | ... | ... | ... |
| Puerperal Fever ... | 15 | ... | ... | ... | 3 | 12 | ... |
| Plague | ... | ... | ... | ... | ... | ... | ... |
| Chicken-pox | 576 | ... | ... | ... | ... | ... | ... |
| Totals .. | 1525* | 19 | 348 | 829 | 135 | 187 | 7 |

* Does not include Chicken Pox.

TABLE No 20—Continued.

Cases of Infectious Disease notified during the Year, 1905.

| NOTIFIABLE DISEASE. | TOTAL CASES NOTIFIED IN EACH LOCALITY. | | | | | | | | | | | |
|------------------------|--|---------------------|-----------------|------------------|--------------------|-------------------|------------------|--------------------|---------------------|---------------|--------------------|-------------------|
| | St. Mary's Ward | St. Peter's Ward | Werneth Ward | Westwood Ward | St. Paul's Ward | Goldhurst Ward | Hartford Ward | Hollinwood Ward | Clarksfield Ward | Mumps Ward | St James's Ward | Waterhead Ward |
| Small-pox | 33 | 3 | 17 | 48 | 4 | 83 | 48 | 12 | 14 | 9 | 6 | 4 |
| Cholera | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | .. | ... |
| Diphtheria... | 10 | 8 | 13 | 8 | 2 | 8 | 8 | 7 | 21 | 3 | 5 | 5 |
| Membranous Croup .. | ... | ... | ... | .. | ... | ... | .. | ... | ... | .. | ... | ... |
| Erysipelas... | 10 | 2 | 12 | 9 | 9 | 8 | 7 | 6 | 14 | 5 | 10 | 8 |
| Scarlet Fev'r | 110 | 71 | 72 | 84 | 108 | 72 | 78 | 73 | 146 | 61 | 59 | 35 |
| Typhus .. | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... |
| Enteric .. | 1 | 6 | 2 | 2 | 4 | 3 | 3 | 5 | 13 | 3 | 8 | 12 |
| Relapsing .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Continu'd .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Puerperal .. | ... | ... | ... | 2 | 2 | ... | 2 | 2 | 4 | ... | 2 | 1 |
| Plague | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Totals ... | 164 | 90 | 116 | 153 | 219 | 174 | 146 | 105 | 212 | 81 | 90 | 65 |

TABLE No. 20—Continued.

| NOTIFIABLE DISEASE. | No. OF CASES REMOVED TO HOSPITAL FROM EACH LOCALITY | | | | | | | | | | | |
|-------------------------|---|---------------------|-----------------|------------------|--------------------|-------------------|------------------|--------------------|---------------------|---------------|---------------------|-------------------|
| | St. Mary's Ward | St. Peter's Ward | Werneth Ward | Westwood Ward | St. Paul's Ward | Coldhurst Ward | Hartford Ward | Hollinwood Ward | Clarksfield Ward | Mumps Ward | St. James's Ward | Waterhead Ward |
| Small-pox ... | 32 | 3 | 14 | 47 | 4 | 75 | 48 | 11 | 13 | 9 | 6 | 4 |
| Cholera ... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Diphtheria... | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| Membranous Croup ... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Erysipelas... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Scarlet Fev'r | 58 | 28 | 27 | 42 | 48 | 22 | 20 | 36 | 65 | 43 | 21 | 16 |
| Typhus .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Enteric .. | .. | 2 | 1 | .. | 2 | 1 | 1 | 4 | 4 | 1 | 3 | 6 |
| Relapsing .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Continu'd .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Puerperal .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Plague ... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Totals ... | 90 | 33 | 42 | 90 | 54 | 98 | 69 | 51 | 82 | 53 | 30 | 26 |

TAB

SUMMARY OF CASES ADMITTED INTO WESTHURST

| | 1880 | | 1881 | | 1882 | | 1883 | | 1884 | | 1885 | | 1886 | | 1887 | | 1888 | | 1889 | | 1890 | | 1891 |
|-----------------------------|----------|------|----------|------|----------|------|----------|------|----------|------|----------|------|----------|------|----------|------|----------|------|----------|------|----------|------|----------|
| | Admitted | Died | Admitted | Died | Admitted | Died | Admitted | Died | Admitted | Died | Admitted | Died | Admitted | Died | Admitted | Died | Admitted | Died | Admitted | Died | Admitted | Died | Admitted |
| Smallpox .. | 5 | | 39 | 9 | 18 | 2 | 6 | | 2 | ... | 5 | ... | 5 | ... | 3 | ... | 123 | 16 | 1 | ... | ... | ... | ... |
| Measles . . . | 2 | | ... | ... | 2 | ... | 1 | ... | 5 | | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | 3 | ... | ... |
| Scarlet Fever | 73 | 12 | 60 | 15 | 30 | 2 | 91 | 3 | 111 | 10 | 90 | 8 | 205 | 10 | 571 | 27 | 203 | 8 | 222 | 13 | 134 | 7 | 8 |
| Diphtheria . | ... | ... | 2 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Typhus | ... | ... | 1 | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | 12 | 4 | 2 | 1 | ... | ... | ... | ... | 1 | ... | ... |
| Typhoid Fever. | 28 | 5 | 56 | 8 | 29 | 4 | 32 | 7 | 36 | 4 | 31 | 7 | 52 | 8 | 40 | 6 | 23 | 7 | 12 | 5 | 28 | 5 | 4 |
| 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 | ... | 1 | ... | ... | ... | ... |
| | 110 | 17 | 162 | 35 | 81 | 8 | 135 | 11 | 165 | 16 | 132 | 18 | 277 | 23 | 619 | 36 | 354 | 31 | 236 | 18 | 166 | 12 | 12 |

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 1905.

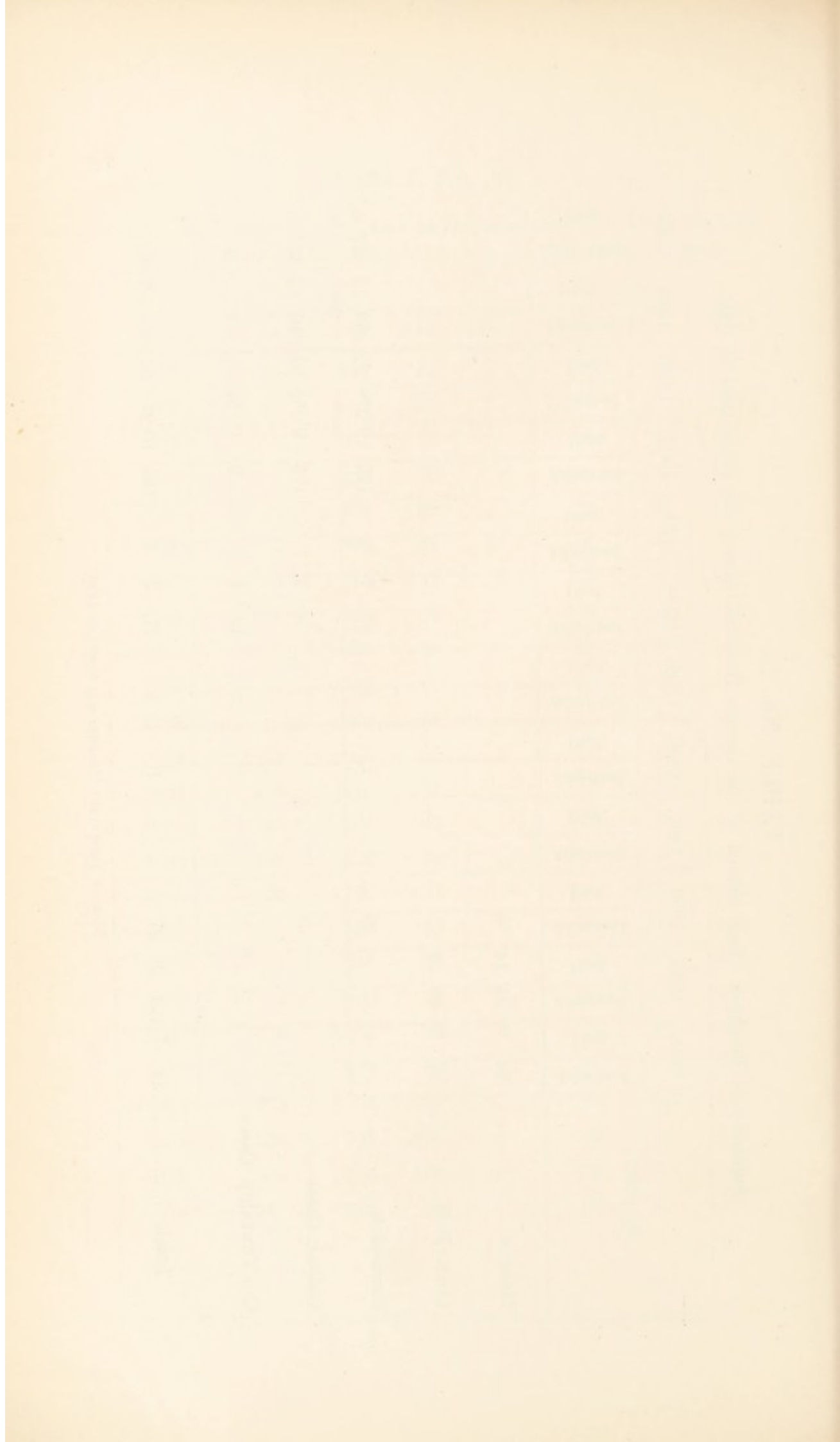
| Year. | Small-pox. | Scarlet Fever. | Diphtheria | Typhus Fever. | Typhoid Fever. | Puer-peral Fever. | Total Cases. |
|-------|------------|----------------|------------|---------------|----------------|-------------------|--------------|
| 1881 | 15 | 434 | 20 | ... | 131 | 3 | 603 |
| 1882 | 13 | 465 | 27 | ... | 117 | 3 | 625 |
| 1883 | 6 | 301 | 15 | ... | 96 | 3 | 421 |
| 1884 | 2 | 289 | 20 | 1 | 100 | ... | 412 |
| 1885 | 4 | 229 | 28 | ... | 58 | 2 | 321 |
| 1886 | 5 | 391 | 44 | 12 | 100 | 7 | 559 |
| 1887 | 3 | 1,775 | 127 | 2 | 119 | 5 | 2,031 |
| 1888 | 104 | 985 | 86 | ... | 106 | 3 | 1,284 |
| 1889 | 1 | 680 | 39 | ... | 56 | 5 | 781 |
| 1890 | ... | 320 | 11 | 2 | 63 | 7 | 403 |
| 1891 | ... | 238 | 29 | ... | 112 | 4 | 383 |
| 1892 | 75 | 667 | 27 | ... | 83 | 9 | 861 |
| 1893 | 416 | 442 | 25 | ... | 70 | 9 | 962 |
| 1894 | 165 | 264 | 67 | ... | 69 | 9 | 574 |
| 1895 | 137 | 216 | 70 | ... | 109 | 5 | 537 |
| 1896 | 27 | 785 | 61 | 8 | 114 | 17 | 1,012 |
| 1897 | ... | 332 | 38 | 2 | 86 | 10 | 468 |
| 1898 | 1 | 346 | 39 | ... | 68 | 20 | 474 |
| 1899 | 2 | 822 | 71 | ... | 92 | 11 | 998 |
| 1900 | 8 | 1065 | 94 | ... | 72 | 21 | 1260 |
| 1901 | 2 | 679 | 56 | ... | 40 | 18 | 795 |
| 1902 | 178 | 704 | 187 | ... | 63 | 15 | 1147 |
| 1903 | 256 | 507 | 201 | ... | 52 | 9 | 1025 |
| 1904 | 255 | 638 | 158 | ... | 76 | 19 | 1146 |
| 1905 | 281 | 969 | 98 | ... | 62 | 15 | 1425 |

TABLE No. 23.

Summary of Smallpox Cases treated in the various Hospitals during the years 1894 to 1905.

| Hospitals. | 1894. | | 1895. | | 1896. | | 1897. | | 1898. | | 1899. | | 1900. | | 1901. | | 1902. | | 1903. | | 1904. | | 1905. | |
|--------------------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|
| | Admitted. | Died. | Admitted. | Died. | Admitted. | Died. | Admitted. | Died. | Admitted. | Died. | Admitted. | Died. | Admitted. | Died. | Admitted. | Died. | Admitted. | Died. | Admitted. | Died. | Admitted. | Died. | Admitted. | Died. |
| Moscow | 74 | 9 | 94 | 14 | 8 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Cinder Hill | 57 | 8 | 30 | 8 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 9 | 1 | 1 | ... | ... | ... | ... | ... |
| Strinesdale | ... | ... | ... | ... | 19 | ... | ... | ... | 1 | ... | 2 | ... | 27 | 7 | 2 | ... | 175 | 9 | 278 | 22 | 269 | 13 | 267 | 5 |
| Oldham Cases | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 8 | 3 | ... | ... | 175 | 9 | 255 | 21 | 246 | 13 | 266 | 5 |
| Out-Township Cases | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 19 | 4 | ... | ... | 9 | 1 | 24 | 1 | 23 | ... | 1 | ... |
| Totals | 131 | 17 | 124 | 22 | 27 | ... | ... | ... | 1 | ... | 2 | ... | 27 | 7 | 2 | ... | 184 | 10 | 279 | 22 | 269 | 13 | 267 | 5 |

Moscow Temporary Hospital was closed in 1896.



PART III.

Work of the Health Department,

1905.

STAFF.

Owing to the great amount of extra work caused by the compulsory Notification of Chicken-pox, and the necessity of visiting each case that was reported, the prevalence of Smallpox, and also in connection with the administration of the Midwives Act, a considerable amount of extra medical assistance was necessary, and in March Dr. Granville Buckley was appointed Pupil Assistant. The duties delegated to him were most zealously performed, and at the close of the year, when the medical work of the Education Committee was placed in the hands of the Medical Officer of Health, he was appointed Assistant Medical Officer of Health.

At the end of October it was decided to appoint a Smoke Inspector, and Inspector Taylor resumed his old position. W. Clarke, who for some years had been a Disinfector, and holds the Certificate of the Royal Sanitary Institute, was appointed District Inspector in his place. T. Davis was appointed a Disinfector. The staff now is as follows :--

Chief Inspector of Nuisances—

THOMAS RUSHWORTH.

Meat Inspector and Inspector of Nuisances—

†*GEORGE WINTERBOTTOM.

Sanitary Inspectors and their Districts—

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

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

JAMES BURNETT—Hartford, Westwood, and Coldhurst Wards.

*WILLIAM CLARKE—St. Mary's, Mumps, and St. James's Wards.

Smoke Inspector—

*WILLIAM TAYLOR.

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

*WM. G. WRIGHT.

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

§†*MISS SMITH.

||*MISS ROTHWELL.

Chief Clerk—

JOHN WHIPP.

Assistant Clerks—

E. JACKSON, L. WHIPP, and J. H. WRIGHT.

Disinfectors—

T. DAVIES.

N. SCHOFIELD.

Matron Westhulme Hospital—

MISS WHITEHEAD.

Assistant Medical Officer of Health—

G. GRANVILLE BUCKLEY, M.D., Ch. B., D.P.H.

Medical Officer of Health—

JAMES B. WILKINSON, M.D., C.M., D.P.H., F.C.S.

* Sanitary Inspector's Certificate of the Royal Sanitary Institute.

† Meat Inspector's " " " "

|| Certificate of Hygiene of School Life " " "

‡ Certificate of the Sanitary Inspectors' Conjoint Board, London.

§ Certificate of Sanitary Science Vict. and Liverpool Univ.

Towards the close of the year plans were passed for the alteration of the offices, and the staff have to thank the Health Committee for the much-needed alteration. The accommodation, so far as present needs are concerned, is fairly satisfactory, and there is room for the addition of two or three extra members should they be required. The rooms are small, but they are healthy and well ventilated, and the insanitary conditions which previously existed have been removed.

In making the alterations the mouth of a large disused culvert was found immediately under the building. There is now proper lavatory accommodation and a small laboratory.

LADY INSPECTORS.

In Table 24 a summary of the visits made by the two Lady Inspectors will be found.

Their time has been chiefly occupied by the visits to houses when births occur, and in visiting the cases of minor infectious disease which have been reported from the various schools. In all 2,690 visits have been paid to the former and 2,320 to the latter cases. In addition to these, 487 visits have been paid and inquiries made in connection with the deaths of children under the age of one year, and 247 visits have been paid to the female workshops. I have elsewhere adverted to the diminution of the infantile death-rate which has taken place since their appointment, and in connection with the schools a further extension of their number would be very beneficial.

In their own time several Evening Lectures have been given by them to various assemblies of women and girls.

Miss Smith reports :—

“ My visits still continue to be received in a kindly manner. The recommendations I give in connection with the Feeding and Clothing of Infants are usually carried out, and many people now provide a separate bed for the infants. When this is not done I always recommend it. In the cases of Infantile Deaths from Diarrhoea I found in most cases the children had been fed on condensed milk, which had been kept in the open tin without even covering up, and that the long feeding tube had been in use. I have persuaded several persons to allow the elder children to sleep in the second bedroom, with much benefit to their health, instead of all the family being crowded into one room. Many of these persons were under the impression the children would take cold if they slept in a room where there were only one or two people. I am sorry to say my recommendations as to the isolation of children suffering from the minor Infectious Diseases are not always carried out, with the result that the disease is spread to other families, causing unnecessary trouble, sickness, expense, and in some cases death.

“ In the case of Measles the mothers frequently allow their children, as soon as the rash has disappeared, to go out of doors and associate with other children ; and in the case of Chicken-pox, Whooping Cough and Mumps often no isolation is attempted, and the elder children are sent to school in order to gain their attendances ”

Miss Rothwell reports :—

“ For the year 1905 I have a similar statement to make as in the previous year, viz., that, owing to the number of school notifications, the births could not be visited as they ought.

“ Out of 3,123 visits, in addition to 277 re-inspections, made in my district only 961 of these visits and 56 re-inspections were paid to births. Thus only one-third of my time was devoted to the special work of ‘endeavouring to decrease infant mortality.’

“ In visiting the births up to Easter I found very few infants artificially fed, but after that time and until the end of the year the numbers somewhat increased. This may be accounted for by the improvement in trade, and some mothers going out to work either as mill-hands or char-women. With regard to the mothers who worked in the mills, there were very few who worked ‘regularly.’ Many of them worked for ‘sick,’ and would not take any regular work, but would work only for a few weeks at a time. Only in a few instances did I find a mother going to the mill who had more than one child. This is certainly, on the mothers’ parts a step in the right direction, and it is to be hoped that the number of ‘working mothers’ will further decrease.

“ With regard to deaths under one year, out of the total number of 508 for the borough 153 of these died under the age of one month, and 90 out of these did not reach the age of one week. However much time had been at the disposal of the Women Inspectors, the 153 infants dying under the age of one month could not have been visited and instruction given on account of the period allowed for the registration of births.

“ The School Notifications include all scholars who are suffering from some minor Infectious disease, viz., Measles, Whooping Cough, Chicken-pox, Ringworm, &c. Although there has not been in my district any epidemic, yet nearly

two-thirds of my time has been spent in visiting the homes infected with the foregoing diseases. It is with regret that I have to state that the amount of time spent with these cases instead of with the births is due, to a great extent, to parents literally exposing their children to infection

“The workshops still maintain, on the whole, a satisfactory condition, and it is with pleasure that I report that the employees are becoming more educated in the ‘necessity for fresh air,’ and have shown it by making practical use of open windows and ventilators.”

FACTORIES AND WORKSHOPS ACTS.

FACTORIES.—Attention is given to these premises in several ways. The Mill Reservoirs are kept under observation by the District Inspector. Smoke Observations are taken by the Smoke Inspector, and the Sanitary Conveniences and Fire Escapes are looked after by the special Inspector detailed for this duty. The Reservoirs in some instances have been in anything but a desirable condition. Certain of the mills have been allowed to take the water from the sewers, chiefly where these sewers have been old watercourses, for the reservoirs, and as the pail closets are being gradually converted into waste-water closets, the sewage, except perhaps at night, is very foul, and easily putrifies in the reservoir. By taking the water only at night, and by putting down filter beds, the sewage can to some extent be purified; but as long as sewage is used for this purpose, in hot and dry weather complaints are sure to arise. The advent of the gas engine in connection with the mills would render nuisances from smoke and putrid mill reservoirs obsolete.

WORKSHOPS.—There are on the register 507 workshops, an increase of 31 from the previous year, 17 having lapsed

and 48 fresh ones being put on the register. The workshops where females are employed are visited by the Female Inspectors. The following is a list of these premises which are registered in the borough .—

| | | | |
|-----------------------------|-----|-----------------------------|----|
| Bakers..... | 6 | Ice Cream Manufacturers .. | 1 |
| Blacksmiths | 6 | Joiners | 8 |
| Blind Manufacturers .. | 2 | Laundries | 1 |
| Bookbinders | 1 | Machine Brokers .. | 4 |
| Bottlers (Beer) | 2 | Mackintosh Manufacturers | 1 |
| Brush Makers | 2 | Mantle Makers... .. | 4 |
| Cabinet Makers | 5 | Marine Stores | 2 |
| Cane Workers | 1 | Milliners | 63 |
| Carriage Builders | 3 | Mineral Water Manufacturers | 2 |
| Cart Sheet Manufacturers | 1 | Paper Bag Makers | 1 |
| Cloggers | 55 | Plumbers | 4 |
| Coffin Makers | 2 | Roller Coverers | 1 |
| Confectioners | 40 | Saddlers | 3 |
| Cotton Waste Dealers ... | 14 | Shoe Makers | 58 |
| Curriers | 3 | Skip Makers | 5 |
| Cycle Makers | 3 | Straw Workers | 1 |
| Drapers (Underwear and | | Tailors | 45 |
| Skirts) | 3 | Tinsmiths | 10 |
| Dress Makers | 113 | Upholsterers | 2 |
| Dyers | 2 | Watch Makers | 4 |
| Drysalters (Chemists) ... | 5 | Wheelwrights | 5 |
| Electro-Platers | 1 | Wringing Machine Manufac- | |
| French Polishers | 1 | turers | 1 |
| Heating Apparatus Manufac- | | Wood Carvers | 1 |
| turers | 1 | | |
| Hosiery & Stocking Knitters | 8 | | |

In Table 25 are details of the various defects for which notices have been issued in connection with both the Factories and Workshops, together with the number of visits paid in inspection and re-inspection of the work in progress.

BAKEHOUSES.

Table 26 gives the details of the work carried out during the year in connection with the bakehouses. There are the same number in the Borough as in the previous year, and no less than 1,157 visits have been paid to them. There are 28 cellar bakehouses still in existence, the certificates for which had been issued in the previous year.

RETAIL DAIRIES AND MILKSHOPS.

The number of these premises on the register at the close of the year was 405, being an increase of 41 over the previous year; 958 visits were paid to them, and 7 notices for defective conditions were issued. A list of the defects is given in Table No. 27.

There was no outbreak of infectious disease in connection with any of these premises.

SHOP HOURS AND SHOP SEATS ACTS.

In connection with the Shop Hours Act 449 visits have been made by the Male Inspector, and 25 by the Female Inspectors, and the Female Inspectors have made 15 visits of enquiry in connection with the latter Act. It has not been necessary to take any legal action under either of these Acts.

SMOKE NUISANCES.

In October it was decided to place a special Smoke Inspector on duty, and Inspector Taylor resumed his old position. Partly in consequence of this, nearly three times the number of observations have been taken as in the previous year, and 15 mills (one twice) have been reported as having exceeded the limit of black smoke allowed, compared with nine in the previous year.

Seven prosecutions were ordered, and a conviction was obtained in each case, the fines being : One of 50/-, two of 40/-, two of 20/-, and two of 10/-, and costs.

Four mills were cautioned against a repetition of the nuisance, and in five instances it was the first offence, and the usual notice was served.

Though the number of mills exceeding the limit was larger than in the preceding year, the percentage of the observations exceeding the limit was smaller, being 1·76, compared with 2·4 per cent.

Particulars of the appliances in use are to be found in Tables 30 and 32. At the close of the year a number of observations were taken for the purposes of a Special Report, which will be found at the end of the book.

SALE OF FOOD AND DRUGS ACT.

During the year 244 samples, a larger number than in any previous year, have been purchased under the above Act, and of these 13 articles were found to be not of the quality asked for.

Of Milk 161 samples were purchased, and nine were found to be unsatisfactory. The following are the particulars and the proceedings taken :—

| | |
|--------------------------------|---|
| 1—contained 20% of added water | Cautioned. |
| 2— „ 3½% „ „ „ | } Summoned before the Health Committee and cautioned. |
| 3— „ 4% „ „ „ | |
| 4— „ 8% „ „ „ | |
| 5—deprived of 26% „ fat | |
| 6— „ „ 13% „ „ | |
| 7— „ „ 20% „ „ | } Summoned before magistrates and both cases dismissed. |
| 8— „ „ 16% „ „ | |
| 9— „ „ 20% „ „ | |

Ten samples of Butter were purchased, and one was found to contain 19 per cent. of water, and the vendor was cautioned by letter.

Two others were sold as Margarine, and were, on analysis, found to be, as was expected ordinary margarine. These two samples were the much-advertised articles, "Keeloma" and "Calvo."

One sample of Whisky was found to contain $4\frac{1}{2}$ per cent. excess of water. The vendor had a letter of caution.

The sale of milk which has been deprived of a portion of the fat is not only a fraud on the purchaser, but is a most cruel one; as when the milk is to be used for infants, as it often is, the effect on the child's health is most serious, and the vendor may pocket his extra gains at the price of the baby's life, or of its permanently crippled condition. Though only the selected cases were sent before the Magistrates, it is regrettable that no conviction was obtained.

HOUSE INSPECTION.

In the Inspector's Annual Report will be found a summary of the various visits and inspections which have been carried out under the supervision of the Chief Inspector, together with a list of the various defects found, and the notices issued.

On several occasions the consideration of a small area in the town, which may be classed as insanitary, has occupied the time of the Health Committee, but so far no proceedings have been commenced, and, except for the closing of a few more houses in it, it remains in much the same unsatisfactory condition.

Another block of property, referred to in my last Report, has been reconstructed, and in the place of an insanitary area, the houses are now very high-class ones, and eagerly sought after.

Another block of 10 houses, for which notices had been issued, were sold, I understand, for £10, and has been converted into a workshop and storehouse for an electrician and gasfitter.

COMMON LODGING HOUSES.

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

| | |
|--------------------------------------|---------|
| Number of Registered Lodging Houses. | 16 |
| Total accommodation at Night | 1,228 |
| Number of persons occupying them ... | 277,535 |
| Average occupation per night | 760 |

The largest lodging house has accommodation for 285 persons.

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

With the exception of one tramp, who came into the town with Smallpox, the Lodging Houses did not play any part in the introduction or spread of this disease during the year.

OFFENSIVE TRADES.

With the exception of one or two Tripe-dressing Establishments, a Grease Works, and a Hide Depot, these premises in the Borough are small places. During the year 1,109 visits have been paid by the Inspectors to these places, but it has only been necessary to serve one notice for the removal of nuisances.

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

| | | | | | | | |
|----------------------|-----|-----|-----|-----|-----|-----|----|
| Tripe Boilers | ... | ... | ... | ... | ... | ... | 15 |
| Marine Stores | ... | ... | ... | ... | ... | ... | 9 |
| Grease Works | ... | ... | ... | ... | ... | ... | 5 |
| Gut Scrapers | ... | ... | ... | ... | ... | ... | 2 |
| Fat Sorters | ... | ... | ... | ... | ... | ... | 1 |
| Hide and Skin Depots | ... | ... | ... | ... | ... | ... | 2 |
| Soap Boilers | ... | ... | ... | ... | ... | ... | 1 |
| Total | | | | | | | 35 |

SLAUGHTER HOUSES.

There were 56 Slaughter Houses licensed at the commencement of the year, and two additional licenses were granted during the year, one of these being for premises which had formerly been a slaughter house, but for which the license had for several years been refused on account of its unsuitable condition.

Five slaughter houses, before being recommended for a license, were reported to the Health Committee, who visited them, and decided to grant the licenses, but before they would be granted another year, thorough repairs would be required in the case of three of them.

These premises have all been visited during the year either by myself or Dr. Buckley, and, with the exception of those above mentioned, have been found in a satisfactory condition.

They are all regularly visited by the Food Inspector and the Chief Inspector.

Twenty-three notices have been issued for various defects, and all have been complied with.

Not only have the slaughter houses been regularly visited, but also the market stalls, the butchers' shops, and the fish and fruit shops. The various railway sidings where live cattle are landed are also kept under regular inspection. There is probably very little unsound meat sold in the Borough, and the smart fine of £30 imposed by the Magistrates on a Crompton dealer for bringing into the town the carcase of a calf, which was unfit for human food, will tend to further decrease the trade in unsound meat.

About $14\frac{1}{2}$ tons of diseased or unsound food was destroyed during the year.

Legal proceedings were also taken against a farmer on whose premises four quarters of horseflesh were found, apparently dressed for human consumption, and a conviction obtained. The animal was slaughtered at a farm in a neighbouring township.

FARMS, COWSHEDS, AND DAIRIES.

These premises are specially under the supervision of the Food Inspector, and there are on his register 69 Farms, 2 Cowsheds, and 71 Dairies within the Borough. Seventeen notices have been issued for the removal of various defects, and all but one were complied with at the close of the year.

A considerable proportion of these premises do not contain the cubic capacity imposed by the local bye-laws.

SEWERAGE AND DRAINAGE.

There is a complete system of sewerage in the town, a large proportion of which consists of properly constructed sewers and pipe drains. There are, however, a considerable number of stone drains still in existence. These, when

opportunity allows, are gradually being converted to a more satisfactory type. On two sides of the town there are main intercepting sewers, which convey the sewage of the town to the sewage works. Except in one small portion of the town the sewage finds its way by natural gravitation to the works. From this lower portion the sewage is lifted to a higher level by a Shone's Ejector, the air being automatically compressed by the sewage coming from the higher levels. The combined system of drainage is in vogue.

The works for the purification of the sewage are outside the area of the town.

A considerable number of defective and blocked drains have been dealt with during the year, details of which will be found in the Inspector's report.

No less than 610 waste-water closets have received attention from their defective condition during the year.

REMOVAL OF REFUSE.

The town is gradually being converted from the Pan-Closet System into the Waste-Water System, and during the year there has been an increase of 1,199 waste-water closets, of 102 clean water closets, and a decrease of 1,112 sanitary pans.

The contents of the remaining pans are collected at night by the Corporation's own staff of men and horses, removed to the depot, and then mixed with shoddy dust and sold as manure, for which there is a great demand, and about 14,100 tons were sold during the year.

Offal from Butchers, Fishmongers, &c., is collected at frequent intervals, a small charge being made.

I am glad to say there has been also a decrease of 267 ashpits, and an increase of 446 ashcans, in the Borough during the year.

Most of the ashpit and ashcan refuse is now removed to the destructors and burnt, and the resulting clinker used for bacteria beds at the Sewage Works, or ground up into mortar. At one depot concrete paving flags are made from the clinker.

The ashcans are emptied once or more times a week, and the ashpits as often as required.

WATER SUPPLY.

The water supply is from upland gathering grounds, either owned or under the control of the Corporation. It is of great purity, but in some portions of the gathering area there is a considerable amount of peaty soil, and the water from this area contains acid, and has a tendency to dissolve the lead in the service pipes. To remedy this the water is treated as it enters the reservoir with carbonate of lime.

Several analyses of the water have been made at houses where there has been any suspicion of lead poisoning, but though slight traces of lead have been sometimes found, the quantity has not been sufficient to require any action being taken. There is a great improvement in this respect over the previous year.

The capacity of the various storage reservoirs amounts to about 2,000,000,000 gallons, or a supply for the Borough and supply area of about 30 weeks.

THE MIDWIVES ACT.

The execution of the provisions of this Act has entailed a considerable amount of work.

All the Midwives in the Borough have been visited, their books and bags inspected, and inquiries made as to their knowledge and mode of practice. A few of the older women are very ignorant, and though willing to carry out the requirements, are too uneducated to do so. A few of these have almost ceased to undertake cases. One of the oldest, when asked for her enema syringe, produced a 2oz. male glass syringe.

It was not possible to arrange a course of Lectures last winter, but it is hoped the future will permit this. A list of the Midwives registered to practise in the town is attached to this report.

REPORT OF THE CHIEF INSPECTOR OF
NUISANCES, 1905.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

Seeing that the duties carried out by your staff of Inspectors, who have to look after the health and sanitary conditions of this busy hive of industry, are so fully set forth in the accompanying tables, which deal with the complaints received and insanitary conditions found in the course of our daily inspections, it appears to me unnecessary to offer any extended remarks thereon.

It will be seen that increased efforts have been made to cope with the insanitary conditions in connection with waste-water closets, such as blocked drains in houses and yards, due to the slop-water having its only outlet through the waste-water closet into the back passage sewer, and frequently from misuse and carelessness. These evils, it is hoped, are only of a temporary, though often recurring, character, and will, no doubt, become less as the system of waste-water carriage comes to be better understood and properly used.

Drainage tests have been made to a number of larger houses, where it has been considered advisable to have them overhauled and reconstructed in respect to disconnections and ventilations of waste pipes and water closets.

Increased attention has been given to such places as Farms, Dairies, Cowsheds, Pigsties, Slaughter Houses, Bakehouses, and other such premises where foods are prepared for sale.

A larger number of Food Samples (245) have been taken under the Food and Drugs Act than in any previous year.

The continuous prevalence of infectious diseases, requiring the removal of 767 persons to the Hospitals, has been no light affair, and has required much time and attention on the part of each Inspector to enquire into the history of the cases.

Diligent efforts have been made to secure that the Cattle, Sheep, Pigs, and Calves arriving at the various railway sidings are dealt with without being subjected to unnecessary exposure or cruelty of any kind.

During the year two outside cattle dealers—in the immediate neighbourhood—who were well known as purveyors of suspiciously-prepared carcasses, were fortunately caught with their goods in our district before being able to dispose of them, and, on seizure and prosecutions following, were smartly punished by heavy fines and penalties in the Borough Police Court.

It will be noted that over 14 tons of unsound foods of one kind and another have been destroyed during the past year, and that the greater portion of these foods are seen by the Meat and Foods Inspector, and condemned before being exposed for sale in shop or market.

Two separate cases of Farcy, or Glanders, in horses have occurred, but, fortunately, in neither case did the disease go beyond the animals affected.

In concluding this brief epitome of our work, I may say, on behalf of the staff, that we have always endeavoured to do our utmost in responding to the calls made on us by the public at large, who appear to hold the universal opinion

that Nuisance Inspectors may and ought to regulate and legislate for every conceivable thing on the face of the earth.

To you and others, who know otherwise and understand the difficulties with which we have to contend, we look for guidance, assistance, and support in doing our duties faithfully and well for the public weal, and trust this has been accomplished in whatever has been taken in hand.

I remain,

Your Obedient Servant,

THOMAS RUSHWORTH,

Chief Inspector of Nuisances.

TABLE No. 24.

LADY INSPECTORS' REPORT, 1905.

| | Visits paid. | Re- Inspection. | Notices served. | Notices complied with. |
|--|--------------|--------------------|--------------------|------------------------------|
| Births | 2285 | 405 | ... | ... |
| Deaths of Infants (under 12 months) | 487 | 129 | ... | ... |
| Defective Houses found | 145 | 206 | 145 | 112 |
| Workshops | 247 | 22 | 11 | 11 |
| Shop Hours Act | 25 | 12 | 5 | 5 |
| Enquiries for Shop Seats | 15 | ... | ... | ... |
| Infectious Diseases... | 779 | 55 | 5 | 4 |
| School Notifications | 2320 | 161 | 5 | 5 |
| Special Cases | 243 | 16 | ... | ... |

TABLE No. 25.

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

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

| | | | | |
|--|-----|-----|------|------|
| No. of Workshops on Register December, 1904 | ... | ... | ... | 476 |
| " " Discontinued during 1905 | ... | ... | ... | 17 |
| " " Registered during 1905... | ... | ... | ... | 48 |
| " " on Register December, 1905 | ... | ... | ... | 507 |
| * " Visits Paid { Female Inspectors | ... | ... | 247 | 1744 |
| { Male Inspector | ... | ... | 1497 | |
| " Notices Served (Male Inspector) | ... | ... | ... | 118 |
| " " Complied | ... | ... | ... | 94 |
| * " Visits under Shop Hours Act (Male Inspector) | ... | ... | ... | 449 |
| " Notices Served | ... | ... | ... | 7 |
| " " Complied... | ... | ... | ... | 6 |
| Re-Inspections of Work in Progress or Under Notice | ... | ... | ... | 356 |
| Miscellaneous Visits (to Owners, Agents, &c.) | ... | ... | ... | 215 |

| Nature of Defects. | Notices Served. | Notices complied. |
|---|-----------------|-------------------|
| Workshops Repaired | 10 | 10 |
| Dirty Workrooms | 9 | 9 |
| Damp, Defective Roof, &c. | 3 | 3 |
| Defective Ventilation | 31 | 31 |
| Defective Water Supply | 1 | 1 |
| Defective Cellars | 3 | 2 |
| Overcrowding | 2 | 2 |
| Insufficient or no Closet Accommodation | 50 | 12 |
| Defective Closets | 4 | 4 |
| Privy Nuisances | 268 | 99 |
| Untrapped Drains | 5 | 5 |
| Defective Drains | 8 | 7 |
| Defective or Short Slop Pipes | 5 | 4 |
| Directly connected with Sewer | 6 | 6 |
| Fire Escapes | 15 | 9 |
| Defective Chimneys... | 4 | 1 |
| Accumulations | 2 | 2 |

5 Gully Traps have been fixed and 80 Yards of Channel Tiles and Drain Pipes laid or re-laid.

TABLE No. 26.
SHOWING THE NUMBER OF BAKEHOUSES REGISTERED,
VISITS MADE, AND DEFECTS REMOVED.

| | | | | |
|--|-----|-----|-----|------|
| No. of Bakehouses on Register, December, 1904 | ... | ... | ... | 363 |
| „ „ discontinued during 1905 | ... | ... | ... | 14 |
| „ „ registered during 1905 | ... | ... | ... | 14 |
| „ „ on Register, December, 1905 | ... | ... | ... | 363 |
| „ Visits paid | ... | ... | ... | 1157 |
| „ Notices served | ... | ... | ... | 25 |
| „ „ complied | ... | ... | ... | 17 |
| Re-inspections of work in progress or under notice | ... | ... | ... | 94 |
| Miscellaneous Visits (to Owners, Agents, etc.) | ... | ... | ... | 50 |

| Nature of Defects. | Notices Served | Notices Complied |
|-------------------------------|----------------|------------------|
| Bakehouses Repaired | 6 | 6 |
| Dirty Bakehouses | 5 | 5 |
| Damp, Defective Roof, etc. | 3 | 3 |
| Defective Ventilation | 1 | 1 |
| Accumulations | 4 | 4 |
| Defective Cellars | 5 | 3 |
| Directly connected with Sewer | 4 | 4 |
| Defective Closets | ... | ... |
| Untrapped Drains | 6 | 6 |
| Defective Drains | 11 | 10 |
| Defective or Short Slop Pipe | 4 | 3 |

6 Gulley Traps have been fixed, and 36 yards of Channel Tiles and Drainage Pipes laid or re-laid.

| District | No. on Register | Where Baking is Done. | | | | | | Kind of Oven Used. | | | | |
|----------|-----------------|-----------------------|-------------------------|-------------|--------|-----------|--|--------------------|--------------|-----|-------|-------|
| | | Living Room | Living Room and Kitchen | Out Kitchen | Cellar | Bakehouse | | Ordinary | Special Iron | Gas | Brick | Stove |
| No. 1 | 83 | 31 | 12 | 14 | 8 | 18 | | 28 | 50 | 10 | 7 | 1 |
| „ 2 | 76 | 27 | 8 | 13 | 9 | 18 | | 28 | 42 | 7 | 2 | 2 |
| „ 3 | 86 | 20 | 23 | 23 | 5 | 15 | | 17 | 53 | 17 | 4 | 1 |
| „ 4 | 48 | 17 | 4 | 14 | 4 | 9 | | 15 | 28 | 7 | 5 | 1 |
| „ 5 | 70 | 26 | 18 | 9 | 2 | 15 | | 29 | 39 | 16 | 1 | 1 |
| Totals | 363 | 121 | 65 | 73 | 28 | 75 | | 117 | 212 | 57 | 19 | 6 |

TABLE No. 27.

RETAIL MILK SHOPS.

| | | | | |
|--|-----|-----|-----|-----|
| No. of Milk Shops on Register, December, 1904... | ... | ... | ... | 364 |
| „ „ Discontinued during 1905 | ... | ... | ... | 6 |
| „ „ Registered „ „ | ... | ... | ... | 47 |
| „ „ on Register, December, 1905 | ... | ... | ... | 405 |
| No. of Visits Paid | .. | ... | ... | 958 |
| No. of Notices Served | ... | ... | ... | 7 |
| No. of „ Complied | ... | ... | ... | 5 |
| Re-inspections of work in progress or under notice | ... | ... | ... | 86 |
| Miscellaneous Visits (to Owners or Agents, etc.) | ... | ... | ... | 24 |

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

7 Gulley traps have been fixed and 40 yards of Channel tiles and drain pipes laid or re-laid.

TABLE No. 28.

Showing the number of Smoke Observations taken and Inspections of
Mill Lodges and Slaughter-Houses made during the
years 1904-1905.

| Fortnight ending | | SMOKE OBSERVATIONS. | | MILL LODGES INSPECTIONS. | | SLAUGHTER-HOUSES INSPECTIONS. | |
|------------------|------------|------------------------|-------|-----------------------------|-------|----------------------------------|-------|
| 1904. | 1905. | 1904. | 1905. | 1904. | 1905. | 1904. | 1905. |
| Jan. 16 | Jan. 14... | 3 | 14 | 200 | 17 | 155 | ... |
| „ 30 | „ 28.. | 16 | 31 | 300 | 259 | 136 | 43 |
| Feb. 13 | Feb. 11... | 6 | 25 | 278 | 214 | 126 | 124 |
| „ 27 | „ 25.. | 24 | 25 | 264 | 237 | 143 | 89 |
| Mar. 12 | Mar. 11... | 22 | 22 | 269 | 272 | 139 | 120 |
| „ 26 | „ 25... | 25 | 48 | 157 | 330 | 69 | 118 |
| Apr. 9 | Apr. 8... | .. | 63 | 91 | 189 | 61 | 108 |
| „ 23 | „ 22... | 20 | 39 | 216 | 294 | 124 | 98 |
| May 7 | May 6... | 18 | 34 | 299 | 359 | 144 | 125 |
| „ 21 | „ 20... | 28 | 48 | 350 | 261 | 149 | 120 |
| June 4 | June 3... | 13 | 46 | 235 | 375 | 124 | 151 |
| „ 18 | „ 17 | 18 | 40 | 312 | 273 | 129 | 133 |
| July 2 | July 1... | 31 | 41 | 337 | 381 | 158 | 141 |
| „ 16 | „ 15... | 23 | 41 | 270 | 272 | 143 | 157 |
| „ 30 | „ 29... | 21 | 27 | 364 | 411 | 126 | 132 |
| Aug. 13 | Aug. 12... | 17 | 37 | 170 | 225 | 64 | 121 |
| „ 27 | „ 26... | 14 | 48 | 300 | 430 | 108 | 137 |
| Sep. 10 | Sep. 9... | ... | 11 | 195 | 156 | 111 | 78 |
| „ 24 | „ 23... | 11 | 19 | 286 | 305 | 113 | 132 |
| Oct. 8 | Oct. 7... | 4 | 33 | 234 | 355 | 114 | 117 |
| „ 22 | „ 21... | 9 | 43 | 165 | 337 | 86 | 142 |
| Nov. 5 | Nov. 4... | 11 | 41 | 331 | 256 | 99 | 110 |
| „ 19 | „ 18... | ... | 56 | 251 | 255 | 113 | 117 |
| Dec. 3 | Dec. 2... | 14 | 15 | 130 | 273 | ... | 105 |
| „ 17 | „ 16... | 20 | 43 | 122 | 242 | ... | 109 |
| „ 31 | „ 30... | ... | 19 | 136 | 175 | ... | 65 |
| Totals | | 368 | 909 | 6262 | 7153 | 2734 | 2892 |

TABLE No. 29.

HALF-HOURLY SMOKE OBSERVATIONS,
taken from December 31st, 1904, to December 30th, 1905.

| Total Observations taken. | No Black Smoke. | Under 1 Minute. | Under 2 Minutes. | Under 3 Minutes. | 3 and 4, both inclusive. | Over 4 Minutes. |
|---------------------------------|--------------------|-----------------------|------------------------|------------------------|--------------------------------|-----------------------|
| 909 | 180 | 199 | 215 | 144 | 155 | 16 |
| Percentage ... | 19·80 | 21·89 | 23·65 | 15·84 | 17·05 | 1·76 |

TABLE No. 30.
LIST OF FIRMS REPORTED TO HEALTH COMMITTEE DURING THE YEAR 1905.

| 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 |
|--------------------|---------------------|---------------|-------------------|---------------------|-------------------------|------------------------|-----------------------------------|------------------------|
| Werneth | Manchester Road.. | 3 | ft. 30 | ft. in. 8 0 | T. pr. B'ler 33 | 2 | No Appliances..... | Notice Served |
| Brook (old) | Mill Brook | 3 | 30 | 7 6 | 20 | 3 | do. | do. do. |
| Willowbank | Granville Street .. | 4 | 30 | 8 0 | 20 | 3 | do. | do. do. * |
| Featherstall | Featherstall Road.. | 3 | 30 | 7 0 | 25 | 2 | do. | Fined 40/- and Costs |
| Highfield | Chadwick Street... | 4 | 30 | 8 0 | 17 | 3 | do. | Fined 20/- and Costs |
| Tay | Windsor Street .. | 5 | 30 | 8 0 | 23 | 5 | do. | Fined 10/- and Costs |
| Hargreaves Works. | Coldhurst Street.. | 2 | 30 | 8 0 | 16 | 2 | do. | Fined 10/- and Costs |
| Chamber | Heron Street | 2 | 30 | 8 0 | 20 | 2 | Whitehead's Seating Blocks | Notice Served |
| Copster | Hathershaw | 4 | 30 | 7 6 | 22 | 3 | do. | do. do. |
| Olive | Quebec Street | 5 | 30 | 7 6 | 23 | 3 | Procter's Sprinkling Stokers..... | Cautioned by Committee |
| Olive | " | 5 | 30 | 7 6 | 23 | 3 | do. | Fined 20/- and Costs |
| Woodstock | nr. Royton Junction | 4 | 30 | 8 0 | 23 | 3 | Broadbent's Louvre Doors.. .. | Cautioned by Committee |
| Alexandra | Acre Lane | 6 | 30 | 8 0 | 25 | 6 | do. | do. do. |
| Ruby | Vincent Street..... | 4 | 30 | 8 0 | 23 | 3 | Yates' and Thom's Bars..... | do do. |
| Pine | Sherwood Street .. | 5 | 30 | 8 0 | 24 | 4 | Caddy's Bars, Induced Draught ... | Fined 50/- and Costs |
| Pearl..... | Netherhey Street... | 5 | 30 | 8 0 | 34 | 4 | Wilton's Forced Draught Furnace.. | Fined 20/- and Costs |

TABLE No. 31.

SMOKE PROSECUTIONS DURING 1905.

| No. of Firms Fined. | Amount of Fine. | No. of times previously prosecuted. |
|------------------------|-----------------|--|
| 1 | 50/- and Costs | 3 |
| 1 | 40/- „ | 12 |
| 1 | 40/- „ | 0 |
| 1 | 20/- „ | 3 |
| 1 | 20/- „ | 2 |
| 1 | 10/- „ | 2 |
| 1 | 10/- „ | 0 |

TABLE No. 32.

NATURE OF SMOKE APPLIANCES IN USE IN THE
BOROUGH OF OLDHAM, 1905.

| Name of Appliances. | No. of Mills. | No. of Boilers. |
|--|---------------|-----------------|
| Cass's Coking Machines | 2 | 7 |
| Dyson & Williamson's Coking Machines... | 1 | 3 |
| Williamson's Auto-Coking do. ... | 5 | 10 |
| McDougall's do. ... | 1 | 1 |
| Bennis's Sprinkling Stokers | 1 | 1 |
| Proctor's do. | 7 | 18 |
| Meldrum Bros.' Forced Draught Furnace | 4 | 4 |
| Granger's do. do. ... | 1 | 1 |
| Wilton's do. do. ... | 1 | 5 |
| Broadbent's Louvre Air Regulators... .. | 13 | 45 |
| †Broadbent's Steam Pokers | 1 | 4 |
| Caddy's Induced Draught Furnace... .. | 3 | 11 |
| Caddy's Tubular Bars | 7 | 26 |
| Yates & Thom's Rocking Bars | 5 | 13 |
| Butterworth's Sectional Bars | 8 | 34 |
| Holden's Hollow Bars and Dead Plates | 1 | 2 |
| Hollow or Split Bridge Walls | 6 | 12 |
| †Whittle's Steam Injectors | 2 | 7 |
| Martin's Swing Doors | 3 | 18 |
| Sanger and Webster's Patent Air Regulators | 2 | 3 |
| Whitehead's Seating Blocks | 5 | 10 |
| | 79 | 235 |

Where no Appliances are fixed—102 Mills ; 236 Boilers. There
are also about 70 Workshop Chimneys not on books.

†Not used at present.

TABLE No. 33.

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

| Year. | Total. | | Milk. | | Butter. | | Bread and Flour. | | Other Groceries. | | Wines, Spirits and Beer. | | Sundries. | |
|-------|----------------|------------------------|----------------|------------------------|----------------|------------------------|------------------|------------------------|------------------|------------------------|--------------------------|------------------------|----------------|------------------------|
| | No. of Samples | Percentage Adulterated | No. of Samples | Percentage Adulterated | No. of Samples | Percentage Adulterated | No. of Samples | Percentage Adulterated | No. of Samples | Percentage Adulterated | No. of Samples | Percentage Adulterated | No. of Samples | Percentage Adulterated |
| 1876 | 74 | 27.0 | 38 | 42.1 | 7 | ... | 6 | ... | 23 | 17.4 | ... | ... | ... | ... |
| 1877 | 81 | 23.4 | 34 | 26.5 | ... | ... | 21 | ... | ... | ... | 20 | 50.0 | 6 | ... |
| 1878 | 74 | 25.7 | 55 | 21.8 | ... | ... | ... | ... | 12 | 8.3 | 6 | 100.0 | 1 | ... |
| 1879 | 77 | 14.3 | 54 | 20.4 | ... | ... | 12 | ... | 6 | ... | 3 | ... | 2 | ... |
| 1880 | 87 | 21.8 | 43 | 27.9 | 8 | 12.5 | 8 | ... | 22 | 18.2 | 6 | 33.3 | ... | ... |
| 1881 | 100 | 10.0 | 67 | 10.4 | 13 | ... | ... | ... | 10 | 10.0 | 7 | 28.6 | 3 | ... |
| 1882 | 100 | 19.0 | 44 | 22.7 | 15 | 33.3 | 4 | ... | 17 | ... | 13 | 30.8 | 7 | ... |
| 1883 | 101 | 12.9 | 43 | 16.3 | 8 | 37.5 | 2 | ... | 20 | ... | 18 | 16.6 | 10 | ... |
| 1884 | 85 | 8.2 | 47 | 2.1 | 11 | 18.2 | ... | ... | 8 | 37.5 | 8 | 12.5 | 11 | ... |
| 1885 | 63 | 15.9 | 43 | 18.6 | 17 | 11.7 | ... | ... | 3 | ... | ... | ... | ... | ... |
| 1886 | 62 | 9.7 | 40 | 5.0 | 9 | 1.1 | ... | ... | 13 | 23.1 | ... | ... | ... | ... |
| 1887 | 75 | 8.0 | 57 | 8.8 | 4 | ... | 4 | ... | 6 | 16.6 | 4 | ... | ... | ... |
| 1888 | 90 | 8.9 | 70 | 8.6 | 4 | 25.0 | ... | ... | 4 | 25.0 | 8 | ... | 4 | ... |
| 1889 | 98 | 6.1 | 80 | 6.2 | 5 | 20.0 | ... | ... | 4 | ... | 6 | ... | 3 | ... |
| 1890 | 98 | 6.1 | 75 | 6.6 | 7 | ... | ... | ... | 6 | 16.6 | 4 | ... | 6 | ... |
| 1891 | 119 | 5.9 | 75 | 4.0 | 13 | 23.1 | ... | ... | 27 | ... | 4 | 25.0 | ... | ... |
| 1892 | 90 | 1.1 | 68 | 1.5 | 3 | ... | ... | ... | 7 | ... | 4 | ... | 8 | ... |
| 1893 | 106 | 10.4 | 84 | 8.3 | 7 | 42.8 | ... | ... | 6 | ... | 3 | 33.3 | 6 | ... |
| 1894 | 139 | 2.1 | 83 | 3.6 | 18 | ... | 6 | ... | 26 | ... | 3 | ... | 3 | ... |
| 1895 | 147 | 6.1 | 120 | 5.0 | 11 | ... | ... | ... | 1 | ... | 6 | ... | 9 | 33.3 |
| 1896 | 154 | 6.5 | 138 | 6.5 | 9 | ... | ... | ... | 1 | ... | 6 | 16.6 | ... | ... |
| 1897 | 169 | 3.0 | 150 | 2.0 | 8 | 25.0 | ... | ... | 7 | ... | ... | ... | 4 | ... |
| 1898 | 75 | 4.0 | 61 | ... | 14 | 21.4 | ... | ... | ... | ... | ... | ... | ... | ... |
| 1899 | 86 | 4.6 | 59 | 1.7 | 27 | 11.1 | ... | ... | ... | ... | ... | ... | ... | ... |
| 1900 | 127 | 12.6 | 72 | 8.3 | 29 | *24.1 | ... | ... | 8 | ... | 18 | 16.6 | ... | ... |
| 1901 | 155 | 7.1 | 109 | 6.9 | 34 | 11.8 | ... | ... | 8 | ... | ... | ... | 4 | ... |
| 1902 | 174 | 2.3 | 118 | 1.7 | 26 | 3.8 | ... | ... | 23 | 4.3 | 5 | ... | 2 | ... |
| 1903 | 201 | 7.0 | 149 | 2.7 | 20 | 30.0 | ... | ... | 23 | 8.7 | 9 | 22.2 | ... | ... |
| 1904 | 237 | 9.7 | 161 | 5.0 | 13 | 61.5 | ... | ... | 41 | 12.2 | 22 | 9.1 | ... | ... |
| 1905 | 244 | 5.3 | 161 | 5.6 | 10 | 30.0 | ... | ... | x53 | ... | 20 | 5.0 | ... | ... |

* Excess Water.

x Two of these samples were not taken under the Food and Drugs Act.

TABLE No. 34.

MAGISTERIAL PROCEEDINGS, 1905.

| No. of Cases. | Particulars of Complaint. | How Disposed of. | Penalties. | | |
|---------------|---|---|------------|-----|-----|
| | | | £ | s. | d. |
| 7 | Smoke Nuisance | One fined 50/- and costs, Two „ 40/- „ Two „ 20/- „ Two „ 10s. „ | 9 | 10 | 0 |
| 4 | Failing to Notify Small-pox | Two dismissed, one dismissed with caution, one fined 5s. and costs.. | 0 | 5 | 0 |
| 2 | Milk Adulteration | Two dismissed | ... | ... | ... |
| 1 | Being in Possession of Unsound Meat | Fined £30 and costs ... | 30 | 0 | 0 |
| 1 | Keeping for Sale Horse-flesh on Unlicensed Premises | Fined £5 and costs | 5 | 0 | 0 |
| 15 | | | £ 44 | 15 | 0 |

FOOD INSPECTOR'S REPORT.

| | | | | | | |
|----------------------------------|-----|-----|-----|-----|-----|-------|
| Visits to Markets ... | ... | ... | ... | ... | ... | 703 |
| Do. Cattle Wharves .. | ... | ... | ... | ... | ... | 890 |
| Do. Meat Shops ... | ... | ... | ... | ... | ... | 4,747 |
| Do. Fish Shops ... | ... | ... | ... | ... | ... | 653 |
| Do. Fruit and Vegetable Shops .. | ... | ... | ... | ... | ... | 1,646 |

SLAUGHTER HOUSES.

VISITS MADE AND DEFECTS REMEDIED.

| | | | | | |
|------------------------------------|-----|-----|-----|-----|----|
| No. on Register, December, 1904 | ... | ... | ... | ... | 56 |
| No. lapsed during 1905 | ... | ... | ... | ... | 0 |
| No. newly licensed during 1905 | ... | ... | ... | ... | 2 |
| No. on Register, December, 1905 .. | ... | ... | ... | ... | 58 |

| Nature of Defects. | | | | | Notices Served. | Notices Complied. |
|------------------------|-----|-----|-----|-----|-----------------|-------------------|
| Accumulation of Manure | ... | ... | ... | ... | 1 | 1 |
| Without Name Plate | ... | ... | ... | ... | 8 | 8 |
| Do. Copies of Bye-Laws | ... | ... | ... | ... | 2 | 2 |
| Defective Lighting | ... | ... | ... | ... | 1 | 1 |
| Do. Floor | ... | ... | ... | ... | 3 | 3 |
| Dirty | ... | ... | ... | ... | 8 | 8 |

FARMS, COWSHEDS, AND DAIRIES.

VISITS MADE AND DEFECTS REMEDIED.

| | | | | | |
|--|-----|-----|-----|-----|----|
| No. of Farms on Register, December, 1905 | ... | ... | ... | ... | 69 |
| No. of Cowsheds | „ | „ | „ | ... | 2 |
| No. of Dairies | „ | „ | „ | ... | 71 |

| Nature of Defects. | | | | | Notices Served. | Notices Complied. |
|------------------------|-----|-----|-----|-----|-----------------|-------------------|
| Dirty Shippon | ... | ... | ... | ... | 1 | 1 |
| Overcrowded Do. | ... | ... | ... | ... | 2 | 2 |
| Blocked Drains... | ... | ... | ... | ... | 1 | 1 |
| Defective Floors | ... | ... | ... | ... | 3 | 2 |
| Do. Water Supply | ... | ... | ... | ... | 1 | 1 |
| Do. Ventilation | ... | ... | ... | ... | 1 | 1 |
| Do. Drain | ... | ... | ... | ... | 3 | 3 |
| Do. Lighting | ... | ... | ... | ... | 1 | 1 |
| Untrapped Drain | ... | ... | ... | ... | 1 | 1 |
| Slopwater in Dairy | ... | ... | ... | ... | 1 | 1 |
| Accumulation of Manure | ... | ... | ... | ... | 1 | 1 |
| Cowshed unfit for use | ... | ... | ... | ... | 1 | 1 |

The number of the Shippons in connection with the Farms and Cowsheds, and the amount of cubic space per head :—

Total number of Shippons, 137.

| | | | | | | No. of Shippons. |
|--|-----|-----|-----|-----|-----|------------------|
| 200 cubic feet and under 300 cubic feet per head | ... | ... | ... | ... | ... | 9 |
| 300 " " 400 " " | ... | ... | ... | ... | ... | 37 |
| 400 " " 500 " " | ... | ... | ... | ... | ... | 46 |
| 500 " " 600 " " | ... | ... | ... | ... | ... | 20 |
| 600 " " 700 " " | ... | ... | ... | ... | ... | 9 |
| 700 " " 800 " " | ... | ... | ... | ... | ... | 4 |
| 800 " " 900 " " | ... | ... | ... | ... | ... | 2 |
| 900 " " 1000 " " | ... | ... | ... | ... | ... | 3 |
| 1000 " " 1100 " " | ... | ... | ... | ... | ... | 2 |
| | | | | | | 132 |
| Number not yet measured | ... | ... | ... | ... | ... | 5 |
| Total | | | | | | 137 |

SUMMARY.

| | | | | | Visits paid. | Notices served. | Notices complied with. |
|-----------------|-----|-----|-----|-----|--------------|-----------------|------------------------|
| Slaughterhouses | ... | ... | ... | ... | 2632 | 23 | 23 |
| Farms | ... | ... | ... | ... | 213 | 13 | 12 |
| Dairies | ... | ... | ... | ... | 213 | 4 | 4 |

DISEASED OR UNSOUND FOOD DESTROYED.

| | | | | | Tons. | Cwts. | Qrs. | Lbs. |
|-------------|-----|-----|-----|-----|-------|-------|------|------|
| 3 Horses | ... | ... | ... | ... | 1 | 8 | 0 | 0 |
| 6 Oxen | ... | ... | ... | ... | 1 | 6 | 2 | 18 |
| 7 Sheep | ... | ... | ... | ... | 0 | 4 | 2 | 4 |
| 11 Pigs | ... | ... | ... | ... | 0 | 19 | 0 | 17 |
| 10 Calves | ... | ... | ... | ... | 0 | 5 | 1 | 3 |
| 11 Rabbits | ... | ... | ... | ... | 0 | 0 | 1 | 3 |
| 130 Poultry | ... | ... | ... | ... | 0 | 10 | 0 | 22 |
| Meat | ... | ... | ... | ... | 2 | 13 | 1 | 15 |
| Offal | ... | ... | ... | ... | 2 | 12 | 0 | 11 |
| Fish | ... | ... | ... | ... | 3 | 1 | 0 | 20 |
| Fruit | ... | ... | ... | ... | 1 | 8 | 3 | 12 |
| Total | ... | ... | ... | ... | 14 | 9 | 2 | 13 |

The following is a summary of diseased, etc., animals reported to or found by the Meat Inspector during the year :—

| Diseased Conditions. | | | | No. Reported. | No. Found by Inspector. | Total. |
|----------------------|-----|-----|-----|---------------|-------------------------|--------|
| Tuberculosis | ... | ... | ... | 50 | 39 | 89 |
| Hydatids | ... | ... | ... | 1 | 8 | 9 |
| Pleuritis | ... | ... | ... | 3 | 5 | 8 |
| Injured in transit | ... | ... | ... | 4 | 4 | 8 |
| Smothered | ... | ... | ... | 4 | 4 | 8 |
| Overkept Foods | ... | ... | ... | 55 | 99 | 154 |
| Liver flukes | ... | ... | ... | 1 | 7 | 8 |
| Garget | ... | ... | ... | 0 | 1 | 1 |
| Actinomycosis | ... | ... | ... | 0 | 1 | 1 |
| Starved | ... | ... | ... | 7 | 5 | 12 |
| Farcy | ... | ... | ... | 2 | 0 | 2 |
| Jaundice | ... | ... | ... | 2 | 0 | 2 |
| Strangled | ... | ... | ... | 1 | 0 | 1 |
| Dropsy | ... | ... | ... | 1 | 0 | 1 |

INSPECTORS' ANNUAL REPORT, 1905.

| | |
|--|------|
| Total Number of Reports of Nuisances and Notices Served | 2105 |
| Total Number of Notices complied with | 1467 |
| Total Number of Notices complied with Order of Committee in 1905 | 440 |
| Number of Complaints Received and Visited | 866 |
| Re-Inspection of Nuisances under Notice | 6491 |
| Number of Cases dealt with by Health Committee in 1905 ... | 500 |
| Number of Cases remaining unabated | 60 |
| Number of Cases dealt with by the Magistrates in 1905 | 15 |

| | |
|---|-----|
| House-to-House Inspection | 74 |
| Total Number of Houses Inspected on Complaint | 437 |
| Houses Repaired | 55 |

| | Notices Served. | Notices Complied with |
|----------------------------------|--------------------|-----------------------------|
| Dirty Houses | 49 | 52 |
| Damp, Defective Roof, &c.... .. | 575 | 523 |
| Defective Ventilation | 85 | 75 |
| Defective Cellars | 57 | 43 |
| Privy Nuisances | 806 | 649 |
| Ashpits | 96 | 45 |
| Defective Water Supply | 147 | 160 |
| Overcrowding | 4 | 3 |
| Unfit for Habitation | ... | ... |

DRAINAGE DEFECTS.

| | Notices Served. | Notices Complied with |
|---|--------------------|-----------------------------|
| Blocked Drains | 553 | 500 |
| Defective Drains... .. | 196 | 144 |
| Gully Traps improperly laid | 5 | 5 |
| Drain inlets untrapped or defectively trapped... .. | 104 | 119 |
| Waste Pipes and Sloppipes directly connected with drain | 35 | 27 |
| Waste Pipes improperly trapped | 1 | 1 |
| Slop Pipe, defective or improperly ventilated... .. | 207 | 152 |
| Defective Water Closets | 27 | 27 |
| Defective Waste Water Closets... .. | 610 | 612 |
| New Water Closets Provided | 45 | 19 |

No. of Smoke or other Tests, 104. No. of Houses Tested, 77.
 No. of Defects found, 45. 889 yards of Channel Tiles and Drainage
 Pipes have been laid or re-laid during the year.
 Traps fixed, 119. Ventilating Grids, 7.
 Houses connected with Main Sewer, 43.

| | Visits Paid. | Notices Served. | Notices Complied with |
|--------------------------------|-----------------|--------------------|-----------------------------|
| Bakehouses | 1157 | 25 | 17 |
| Dairies and Cowsheds | 958 | 7 | 5 |
| Farms | 114 | ... | ... |
| Pigsties | 991 | 2 | ... |
| Slaughter Houses | 2892 | . | ... |
| Offensive Trades | 1109 | 1 | 1 |
| Mill Lodges | 7153 | 10 | 11 |
| Factories and Workshops | 1497 | 118 | 94 |
| Shop Hours Act | 453 | 6 | 6 |

| | |
|---|------|
| Inspections under Contagious Diseases (Animals) Act | 12 |
| Samples taken under Food and Drugs Act | 245 |
| Letters written to Property Owners or Agents, &c. | 53 |
| Miscellaneous Visits, &c | 2478 |
| Privies inspected | 7008 |
| New Privies built | 7 |
| Ashpits built, or new Ashcans provided | 36 |

| | |
|--|-----|
| Yards and Passages Repaired and Flagged | 76 |
| Erections in Yards reported | 8 |
| Defective Urinals | 9 |
| Accumulation of Offensive Matter | 166 |
| Carcases of Animals in Water | 5 |
| Stagnant Water | 14 |
| Manure Heaps | 28 |
| Manure Pits built | 3 |
| Poultry in Houses | 6 |
| Dust and Fly from Mills | 1 |
| Low or Defective Chimneys | 14 |
| Dangerous Places reported... .. . | 79 |
| Coal Gas Nuisances and Escapes reported | 4 |
| Dead Bodies removed to Mortuary | 23 |
| Fire Escapes | 12 |

| | |
|---|------|
| Visits to Cases of Infectious Diseases | 2736 |
| Visits to Cases of Phthisis | 4 |
| Cases removed to Hospitals | 767 |
| Houses Stripped or Cleansed after Infectious Disease | 38 |

HOUSES AND CLOTHING DISINFECTED, 1904.

| | |
|---------------------------------------|-------|
| Number of Houses Disinfected | 1207 |
| Number of Rooms do. | 3709 |
| Number of lots of Clothing | 1265 |
| Number of Articles do. | 14271 |
| Number of Articles destroyed | 270 |

CLOTHING, &c., 1904-1905.

| Articles. | Disinfected. | | Destroyed. | | Totals. | |
|---------------------|--------------|-------|------------|------|---------|-------|
| | 1904. | 1905. | 1904. | 1905 | 1904. | 1905. |
| Blankets | 1601 | 1876 | 1 | 15 | 1602 | 1891 |
| Sheets | 1224 | 1152 | 5 | 2 | 1229 | 1154 |
| Pillows | 2393 | 1990 | 15 | 28 | 2408 | 2018 |
| Bolsters | 1141 | 1019 | 5 | 4 | 1146 | 1023 |
| Quilts... .. | 2075 | 1733 | 2 | 7 | 2077 | 1740 |
| Mattresses | 105 | 55 | 35 | 35 | 140 | 90 |
| Beds | 1592 | 1279 | 52 | 56 | 1644 | 1335 |
| Carpets | 40 | 38 | 2 | 3 | 42 | 41 |
| Rugs | 157 | 144 | 2 | ... | 159 | 144 |
| Curtains... .. | 190 | 114 | ... | ... | 190 | 114 |
| Clothes | 5554 | 4428 | 56 | 71 | 5610 | 4499 |
| Sundry Articles ... | 823 | 443 | 6 | 49 | 829 | 492 |
| Total | 16895 | 14271 | 181 | 270 | 17076 | 14541 |

SANITARY DEPARTMENT, 1905.

RHODES BANK.

| | | | | | | |
|--|-----|-----|-----|-----|-----|-------|
| Number of Sanitary Pans in the Borough | ... | ... | ... | ... | ... | 13412 |
| Do. Cesspools, &c., in the Borough | ... | ... | ... | ... | ... | 25 |
| Do. Water Closets | do. | ... | ... | ... | ... | 2872 |
| Do. Waste-water Closets | do. | ... | ... | ... | ... | 13012 |
| Do. Latrines | do. | ... | ... | ... | ... | 1486 |
| Do. Ashpits | do. | ... | ... | ... | ... | 9246 |
| Do. Ash Cans, &c. | do. | ... | ... | ... | ... | 7167 |
| Do. Houses represented | ... | ... | ... | ... | ... | 34394 |
| Do. Mills, Workshops, &c. | do. | ... | ... | ... | ... | 555 |
| Do. Churches, Schools, &c. | do. | ... | ... | ... | ... | 206 |

NIGHTSOIL DEPARTMENT.

| | | | | | | |
|---|-----|-----|-----|-----|-----|--------|
| Number of Sanitary Pans Emptied during the night | ... | ... | ... | ... | ... | 745420 |
| Do. Cesspools, &c., do. do. | ... | ... | ... | ... | ... | 12 |
| Do. Collections of Butchers' Offal during the night | ... | ... | ... | ... | ... | 4325 |
| Do. do. Fish Offal do. | ... | ... | ... | ... | ... | 12178 |
| Do. Loads of Excreta collected | ... | ... | ... | ... | ... | 7794 |
| Do. do. Butchers' Offal collected | ... | ... | ... | ... | ... | 605 |
| Do. do. Fish Offal collected | ... | ... | ... | ... | ... | 768 |
| Do. do. Shoddy Dirt collected | ... | ... | ... | ... | ... | 3819 |
| Do. Tons of Manure sent out from Higginshaw | ... | ... | ... | ... | ... | 16016 |

ASHES DEPARTMENT.

| | | | | | | |
|--|-----|-----|-----|-----|-----|--------|
| Number of Ashpits Emptied during the day | ... | ... | ... | ... | ... | 39638 |
| Do. Ash Cans do. do. | ... | ... | ... | ... | ... | 361115 |
| Do. Loads of Ashes taken to Destructors | ... | ... | ... | ... | ... | 26286 |
| Do. do. do. Corporation Tips | ... | ... | ... | ... | ... | 4829 |
| Do. do. do. Other Tips | ... | ... | ... | ... | ... | 1600 |
| Do. do. Clinker removed | ... | ... | ... | ... | ... | 4697 |
| Total No. of Loads removed | ... | ... | ... | ... | ... | 37412 |

DESTRUCTORS.

| | | | | | | | |
|---|-----|-----|-----|-----|-----|-------|------|
| Quantity of Ashes, Fish Offal and Garbage consumed :— | | | | | | Tons | Cwt |
| Rhodes Bank Destructor | ... | ... | ... | ... | ... | 15782 | 14 |
| Robin Hill | .. | ... | ... | ... | ... | 8231 | 8 |
| Hollinwood | .. | ... | ... | ... | ... | 7186 | 3 |
| Total | ... | ... | ... | ... | ... | 31200 | 5 |
| Quantity of Mortar Sold :— | | | | | | Tons | Cwt. |
| Rhodes Bank Destructor | ... | ... | ... | ... | ... | 1591 | 2 |
| Robin Hill | .. | ... | ... | ... | ... | 717 | 10 |
| Hollinwood | .. | ... | ... | ... | ... | 832 | 9 |
| Total | ... | ... | ... | ... | ... | 3141 | 1 |

FLAG MAKING DEPARTMENT.

| | | | | | | |
|------------------------|-----|-----|-----|-----|-----|----------|
| Quantity of Flags made | ... | ... | ... | ... | ... | Sq. Yds. |
| Do. sold | ... | ... | ... | ... | ... | 9870 |
| | ... | ... | ... | ... | ... | 15804 |

LIST OF MIDWIVES Registered to Practise in the
Borough of Oldham, June 1st, 1906.

| Name. | Address. | Number of Certificate | Date of Certificate. |
|------------------------------|-------------------------------------|-----------------------------|----------------------|
| Andrew, Hannah | 43, Limeside Street .. | 484 | Dec. 17/1903 |
| Ashton, Mary Ann... | 476, Manchester Road | 775 | Jan. 28/1904 |
| Barker, Margaret Hannah | 2, Crown Street | 167 | Nov. 26/1903 |
| Bennett, Francis | 21, Lady Street..... | 3818 | April 28/1904 (1) |
| Britland, Mary | 100, Bamford Street, Chadderton | 58 | Oct. 29/1903 (1) |
| Broadbent, Mary | Vineyard Street | 618 | Jan. 28/1904 |
| Brown, Ellen | 9, Cheviot Street | 7100 | Sept. 29/1904 |
| Brownhill, Betsy | 38, Main Road | 482 | Dec. 17/1903 |
| Buckley, Mary | 456, Lees Road | 485 | Dec. 17/1903 |
| Bullows, Hannah | 567, Hollins Road | 894 | Jan. 28/1904 |
| Bunting, Mary Ellen .. | 3, Welbeck Street | 4650 | May 26/1904 |
| Cecil, Elizabeth Ellen ... | 27, Railway Road..... | 1951 | Feb. 25/1904 |
| Challinor, Elizabeth | 26, Dickenson Street ... | 480 | Dec. 17/1903 |
| Chisholme, Mary Elizabeth | Nursing Home, Union Street West | 12797 | Jan. 26/1905 (2) |
| Clarkson, Emily | Nursing Home, Union Street West | 16612 | Mar. 23/1905 (2) |
| Cryer, Hannah Rowbottom | 17, Emily Street | 2305 | Feb. 25/1904 |
| Denton, Jane Ann | 212, Oldham Rd., Royton | 18831 | April 27/1905 |
| Dewhurst, Elizabeth | 4, Werneth Hall Road... | 1161 | Jan. 28/1904 |
| Dixon, Ann | 14, Shaw Road | 60 | Oct. 29/1903 |
| Downs, Ann Elizabeth .. | 2, Back Gladstone Street | 162 | Nov. 26/1903 |
| Dyson, Mary | 12, Spring Street | 164 | Nov. 26/1903 (1) |
| Ford, Ann | 170, Featherstall Rd., S. | 6978 | Sept. 29/1904 |
| Foster, Sarah | 17, Sarah Street | 5758 | June 30/1904 |
| Green, Ann | 207, Greenacres Road ... | 20174 | April 27/1905 (1) |
| Green, Mary Alice | 79, Pitt Street | 61 | Oct. 29/1903 (1) |
| Greenall, Lydia | 690, Chamber Road | | |
| Guest, Alice | 87, Wrigley Street | 75 | Oct. 29/1903 |
| Hamer, Martha Ann | 14, Cornhill Street ... | 62 | Oct. 29/1903 |
| Haslam, Alice | 438, Rochdale Road... | 3941 | April 25/1904 |
| Heywood, Caroline | 406, Hollins Road | 76 | Oct. 29/1903 |
| Heywood, Matilda | 382, Lees Road | 77 | Oct. 29/1903 |
| Hill, Ann Lyndon | 41, Carnarvon Street, Hollinwood | 481 | Dec. 17/1903 |

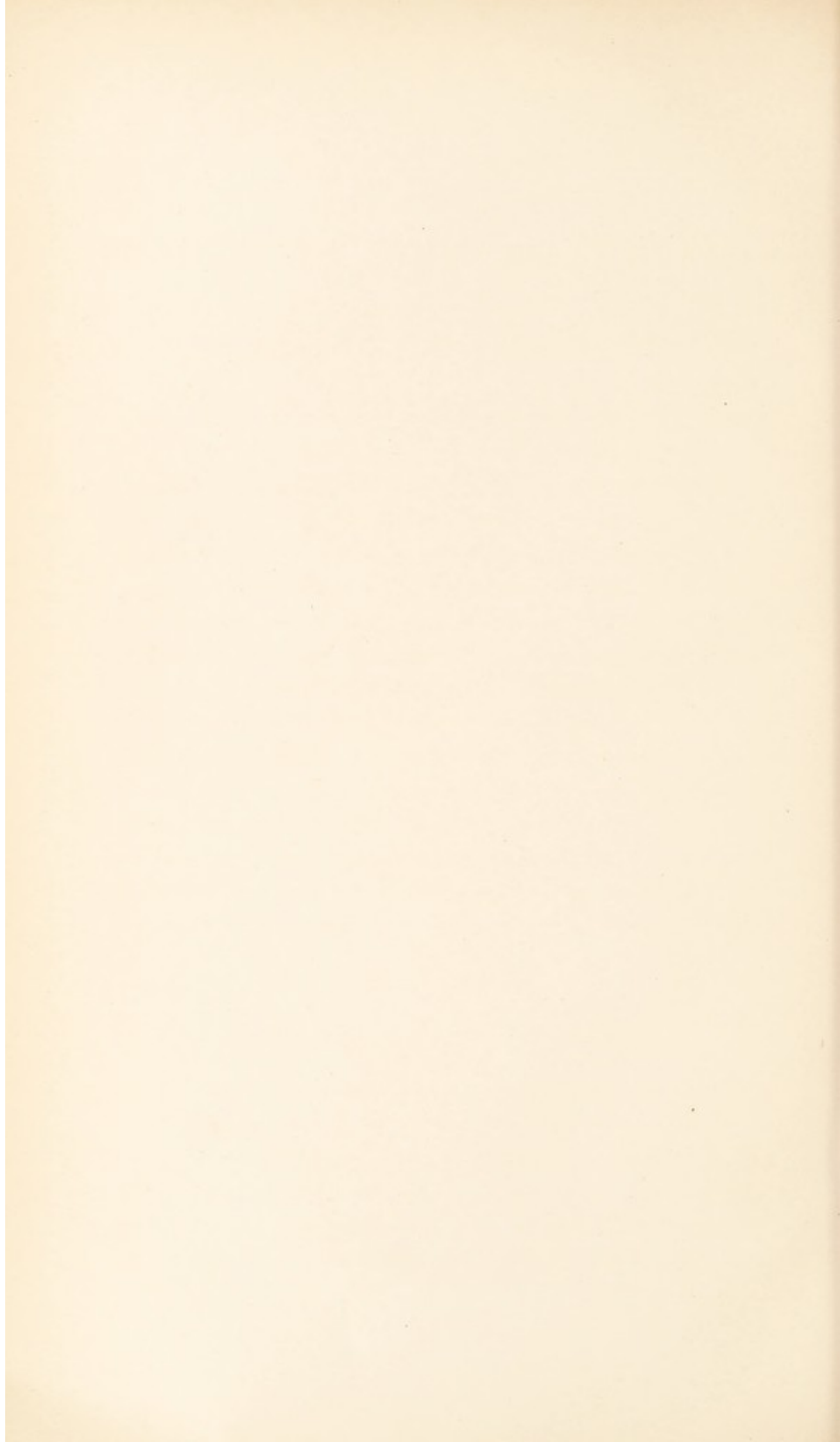
LIST OF MIDWIVES—CONTINUED.

| Name. | Address. | Number of Certificate | Date of Certificate. |
|---------------------------|--|-----------------------------|----------------------|
| Holden, Elizabeth | 105, Greenwood Street... | 165 | Nov. 26/1903 |
| Holden, Polly | Nursing Home, Union Street West | 13650 | Feb. 23/1905 |
| Houghton, Elizabeth .. | 105, Beever Street ... | 14133 | |
| Hutchings, Margaret .. | 1, Belmont Street..... | 11858 | Jan. 26/1905 (2) |
| Hyde, Mary Alice | 228, Greenacres Road ... | | (2) |
| Jackson, Sarah Jane ... | 9, Norman Street | 63 | Oct. 29/1903 (1) |
| Jones, Mary Catherine ... | Nursing Home, Union Street West | 2849 | Mar. 24/1904 |
| Kay, Ellen | 264, Shaw Road | 20386 | April 27/1905 (1) |
| Kershaw, Hannah | 20, Chelmsford Street ... | 1712 | Feb. 25/1904 |
| Kershaw, Sarah Ann... | 106, Rochdale Road... | 3354 | Mar. 24/1904 (1) |
| Lees, Jane | 100, Featherstall Rd., N. | 2582 | Mar. 24/1904 |
| Lisset, Annie | 49, Eldon Street | 9633 | Nov. 24/1904 |
| Longden, Alice | 12, John Booth St., Lees | 306 | Nov. 26/1903 |
| Markwell, Elizabeth Ellen | 5, Southill Street ... | 10733 | Dec. 22/1904 (1) |
| Mayall, Eliza Ann | 11, Hesse Street | 142 | Nov. 26/1903 |
| Meadowcroft, Jane... | 15, Robson Street ... | 5759 | June 30/1904 |
| Mills, Mary Ellen ... | 235, Ashton Road..... | 483 | Dec. 17/1903 |
| Morris, Charlotte ... | Nursing Home, Union Street West | 13654 | Feb. 23/1905 |
| Morris, Mary ... | 53, Block Lane | 2761 | Mar. 24/1904 |
| Nichols, Hannah | 125, Honeywell Lane... | 770 | Jan. 28/1904 |
| Nichols, Rachel | 333, Ashton Road ... | 166 | Nov. 26/1903 |
| Nurse, Maud Alice | Nursing Home, Union Street West | 18698 | April 27/1905 (2) |
| Pearson, Rose Hannah .. | 41a, Rock Street | 159 | Nov. 26/1903 (1) |
| Platt, Ann | 4, Mitchell Street..... | 2763 | Mar. 24/1904 |
| Platt, Susan | 187, Chadderton Road... | 2764 | Mar. 24/1904 |
| Potts, Mary..... | 51, Station Rd., Cheadle Hulme, Stockport | 78 | Oct. 29/1903 (2) |
| Radakin, Catherine | 13, Davies Street | 79 | Oct. 29/1903 |
| Radcliffe, Maria | 378, Chadderton Road... | 17514 | Mar. 23/1905 |
| Rigby, Lucy ... | 72, Chadderton Road ... | 80 | Oct. 29/1903 |
| Roberts, Mary Ann | 4, Flora Street | 591 | Dec. 17/1903 |
| Russell, Mary | 4, Mossley Road, Ashton | 2193 | Feb. 25/1904 |

LIST OF MIDWIVES—CONTINUED.

| Name. | Address. | Number of Certificate | Date of Certificate. |
|---------------------------|------------------------------------|-----------------------|----------------------|
| Schofield, Hannah..... | 7, Bradbury Street ... | 3803 | April 28/1904 |
| Shaw, Mary Ann | 5, Old Lane, Austerlands | 505 | Dec. 17/1903 |
| Shepherd, Elizabeth | 83, Derby Street | 1866 | Feb. 25/1904 |
| Simpson, Hannah Maria. | 81, Acre Lane | 81 | Oct. 29/1903 |
| Smith, Ada | Nursing Home, Union Street West | | |
| Smith, Charlotte... .. | 12, Higginshaw Road ... | 64 | Oct. 29/1903 |
| Taylor, Mary Ann | 3, Canal St., Hollinwood | 2592 | Mar. 24/1904 |
| Whalley, Mary | 86, Greenwood Street ... | 216 | Nov. 26/1903 (3) |
| White, Hannah | 440, Ashton Road | 151 | Nov. 26/1903 |
| Whittaker, Sarah | 12 Harper Street | 609 | Dec. 17/1903 |
| Whyatt, Hannah | 6, Prince Albert Street . | 11065 | Dec. 22/1904 |
| Wright, Ann | 646, Hollins Road | 1216 | Jan. 28/1904 |
| Wright, Kitty | 92, Bolton Street ... | 65 | Oct. 29/1903 |
| Wright, Mary | 782, Huddersfield Road. | 5444 | June 30/1904 |
| Wrigley, Alice | 58, Godson Street | 518 | Dec. 17/1903 |

- (1) Holds the Certificate of St. Mary's Hospital, Manchester.
 (2) Holds the Certificate of the London Obstetric Society.
 (3) Holds the Certificate of the Southern Hospital, Manchester.



REPORT ON THE EMISSION OF BLACK SMOKE.

During the past three months a Special Smoke Inspector has been engaged in taking smoke observations, and the following is a brief report of the results. These statistics hardly show the full amount of black smoke which is being issued, as at my request many of the observations have been taken of the smaller mills, of which frequent complaints are received, but which, though causing considerable nuisance, practically never, owing to the small amount of coal used, exceed the 4 minutes limit. As many of these mills have lower chimneys than the larger mills, the nuisance is proportionately greater. Several observations have been taken also, for purposes of comparison, of mills which are known to emit very small quantities of black smoke, and of which in practice it is unnecessary to take more than casual observations.

MILLS WITH ONE BOILER.

Thirty-one observations were taken at 13 of these mills. Of course none of them exceeded the 4 minutes limit, and only three mills exceeded two minutes in the half-hour, these three burning 34, 26 and 24 tons per week respectively. Another mill burning 34 tons per week gave off no black smoke, and seven others did not exceed 1 minute in the half-hour.

MILLS WITH TWO BOILERS.

Observations were taken of 25 such mills, the total number of observations being 62. As would be expected none of these emitted over 4 minutes black smoke, though they include several of which complaints are frequently received. Only 11 burn more than 20 tons per boiler, and only two of these above 25 tons; one of these two burns 30 tons per boiler, and the black smoke emitted never exceeded in any of the observations 1 minute. The other one burns 28 tons per boiler, and the black smoke emitted averaged at each observation $3\frac{1}{8}$ minutes, a marked difference between the two mills. In 45 observations the black smoke did not exceed 2 minutes in the half-hour. In 17 observations a limit of 2 minutes was exceeded, and the amount of coal per boiler burned in the mills, at which these 17 observations were taken, is as follows:—28, 25, 22, 20, 20, 18, 17, 17, 16, 11 tons. This shows that only three out of the 11 boilers fired the heaviest exceed this limit, while seven out of the 14 more easily fired ones do so.

MILLS WITH THREE BOILERS.

Seventy-three observations were taken in connection with 25 such mills. Only one of these mills is stated to burn above 30 tons per boiler, and the black smoke emitted from its chimney did not exceed $1\frac{1}{4}$ minutes. With 5 exceptions, the other mills burn from 20 to 30 tons per boiler.

In the observations of four mills burning respectively 26, 25, 22 and 19 tons per boiler no black smoke was recorded, and in 12 other mills the amount did not exceed 2 minutes. Only five mills ever exceeded 3 minutes in the half-hour; these five mills burning respectively 30, 23, 23, 20 and 18 tons per boiler. The latter two emitted the largest amount of black smoke of any of the 25 mills, though burning con-

siderably less coal than most of the others. With one exception, therefore, in this class of mills, those burning a very moderate amount of coal, give off the largest amount of black smoke.

MILLS WITH FOUR BOILERS.

Observations were taken of 23 mills with the above number of boilers, and the total observations numbered 68. Only one of these mills is stated to consume over 30 tons of coal per boiler per week ; and the amount of black smoke emitted in the four observations of the chimney were $1\frac{1}{2}$ minutes, 3 minutes, $\frac{1}{2}$ minute and 1 minute. The average amount consumed per boiler at the other mills was from 20 to 23 tons per week. In six observations no black smoke was emitted, and the limit of 4 minutes was only exceeded in four cases, or $5\frac{1}{2}$ per cent.

Out of the above number of mills only seven mills exceeded 3 minutes black smoke in the half-hour.

MILLS WITH MORE THAN FOUR BOILERS.

There were observations taken of 17 such mill chimneys with a total of 62 observations. Out of this number only three, or 5 %, exceeded the 4 minutes limit, and of these three ; two were by no means the largest consumers of coal per boiler. The mill stated to have the largest consumption of coal, viz :—34 tons per boiler per week, did not exceed 1 minute black smoke at each observation. Out of the total number of observations 70 per cent. did not exceed 3 minutes black smoke in the half-hour, and these results appear to show that 4 minutes in the half-hour is by no means a low limit, and can easily be kept within, if the necessary measures be taken.

The perusal of the above brief statistics, and still more of the detailed observations, which it would be unwise to publish, very strongly indicates that even in the large mills with four or more boilers the limit allowed by the Corporation, of 4 minutes black smoke in the half-hour, is a very lenient one, and can be observed without any hardship. When two of the largest and heaviest fired mills never exceeded 1 minute black smoke in the half-hour, it is only reasonable to expect that mills smaller and less heavily fired should have no difficulty in keeping within the 4 minutes limit.

With respect to the smaller mills with 1, 2 or 3 boilers, it has frequently been suggested, and most recently, by the deputation of Engineers who met the Committee, on March 13th, that it was unfair to allow them the same limit as the large mills with four or more boilers, or in other words to allow the same limit to a mill burning from 20 to 60 tons of coal per week, as to one burning from 90 to 120 tons per week, and it has been also pointed out that under these regulations a mill giving off say $3\frac{1}{2}$ minutes black smoke in the half-hour, could by putting up a second chimney emit double the amount of black smoke without exceeding the limit. The result of the observations show distinctly that in proportion to the amount of coal burned, many of the smaller mills give off considerably more black smoke than the larger mills. For example, one mill with three boilers burning 16 tons per boiler, or 48 tons per week, averaged over two minutes black smoke at each observation. Another mill, with two boilers and burning about 56 tons per week, averaged 3 minutes black smoke in each observation, while one of the worst mills, burning about 140 tons per week in six boilers, only averaged $3\frac{1}{4}$ minutes in the half-hour.

The deputation above mentioned, suggested a sliding

scale, but based upon the amount of coal consumed. The following was their suggested time allowance :—

| | | | | | |
|---|---|----------|----------------------|---|---|
| Mills burning up to 30 tons of coal per week, | | | 2 mins. black smoke. | | |
| „ | „ | 60 | „ | 3 | „ |
| „ | „ | 90 | „ | 4 | „ |
| „ | „ | 120 | „ | 5 | „ |
| „ | „ | over 120 | „ | 6 | „ |

The result of this plan if adopted would be briefly to curtail the smoke emitted in some of the smaller mills and allow an increase in the larger mills. The more coal burnt and consequently the lower the quality of the coal used the more black smoke would be allowed. Moreover, the authority would have a basis to work on, which would be changeable and indefinite.

Some five years ago, I suggested to the Health Committee a sliding scale, which I considered would be equitable and could be easily observed, and the result of these observations has confirmed me in this opinion.

This scale is based on the number of boilers at the various mills, and is as follows ; —

Where 1 or 2 boilers, 2 minutes in the half-hour,

| | | | | | |
|---|-----------|---|---|---|---|
| „ | 3 | „ | 3 | „ | „ |
| „ | 4 or more | „ | 4 | „ | „ |

This leaves those mills having four or more boilers the same scale as at present, but reduces the limit for those mills with three or less boilers. This method is in use in Blackburn and Sheffield, but both towns have a lower limit than that suggested above.

I attach to this report a table of the amount of black smoke in other large towns which shows that only three other towns—Wigan, Preston and Burnley,—allow such a large amount to be emitted as in Oldham.

With regard to the taking of observations, I must re-iterate my opinion that the observations are not only taken more frequently but better taken by a special Inspector. The district Inspectors may frequently see a chimney emitting quantities of black smoke, but are unable, being engaged on other business, to stop and take an observation, and when this special business is completed, and they return to take the observation, the circumstances may be entirely changed; whereas a special Inspector, having no other business, can take an observation whenever he sees a chimney giving off a larger quantity of smoke than usual.

In conclusion, I must again draw attention to the nuisances frequently caused in the borough by the black smoke emitted from mill chimneys just outside the borough boundaries. No observations are taken of these by the surrounding authorities, and, being chiefly on a lower level, cause a greater nuisance than the chimneys within the borough, and I suggest that, whenever the direction of the wind causes them to be a nuisance in the borough, observations should be taken and proceedings instituted. This seems to me only fair to the millowners within the borough.

BLACK SMOKE EMISSION IN OTHER TOWNS.

| TOWN. | | | | LIMIT. | | | |
|-----------|-----|-----|-----|--------|---------------------|---|---|
| Leeds | ... | ... | ... | 3 | Minutes in an Hour. | | |
| Bolton | ... | ... | ... | 4 | „ | „ | „ |
| Liverpool | ... | ... | ... | 4 | „ | „ | „ |
| Halifax | ... | ... | ... | 5 | „ | „ | „ |
| Salford | ... | ... | ... | 6 | „ | „ | „ |

| TOWN. | | | | LIMIT. | | | |
|--------------|-----|-----|-----|--------|---------|-------|-------|
| Warrington | ... | ... | ... | 6 | Minutes | in an | Hour. |
| Huddersfield | ... | ... | ... | 6 | " | " | " |
| Wigan | ... | ... | ... | 8 | " | " | " |
| Oldham | ... | ... | ... | 8 | " | " | " |
| Preston | ... | ... | ... | 10 | " | " | " |
| Burnley | ... | ... | ... | 12 | " | " | " |

Manchester allows only $2\frac{1}{2}$ minutes in the hour, but takes proceedings for less if a nuisance is caused.

| | | | | | | | |
|-----------|---|--------------|-----|---|---------|-------|-------|
| Sheffield | — | for 1 Boiler | ... | 2 | Minutes | in an | Hour. |
| | | " 2 | " | 3 | " | " | " |
| | | " 3 | " | 4 | " | " | " |
| | | " 4 or more | ... | 6 | " | " | " |
| Blackburn | — | for 1 Boiler | ... | 4 | " | " | " |
| | | " 2 | " | 5 | " | " | " |
| | | " 3 | " | 6 | " | " | " |
| | | " 4 or more | ... | 7 | " | " | " |

Bradford and Nottingham—No limit is fixed, but proceedings are taken whenever a nuisance is caused.

JAMES B. WILKINSON,

M.D., C.M., D.P.H.,

MEDICAL OFFICER OF HEALTH.

Health Department,
Town Hall, Oldham,
March, 1906.



County Borough of Oldham.

THE
TREATMENT
— OF —
OLDHAM SEWAGE

During the Year 1905.

JAMES B. WILKINSON,

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

MEDICAL OFFICER OF HEALTH.

Town Hall, Oldham.

OLDHAM SEWAGE WORKS.

| | | |
|---------------------------------------|------------|-----------------------------|
| ESTIMATED POPULATION (1905) ... | | 140,225 |
| AREA | | 4,729 acres |
| | | Dec., 1904 Dec., 1905. |
| No. of Waste Water Closets in Borough | 11,846 ... | 13,007 |
| „ Trough „ „ | 1,420 ... | 1,486 |
| „ Clean Water „ „ | 2,797 ... | 2,877 |
| Total Water Closets ... | | 16,063 ... 17,370 |
| „ Sanitary Pans in Borough | 14,497 ... | 13,412 |
| Increase in Number of Water Closets | ... | 1,307 |
| Decrease „ Sanitary Pans | ... | 1,085 |

The system in vogue for treating the Oldham Sewage remains the same as in previous years, and with the exception of an increase in the filtering area, the plant remains the same, and consists of—

(1) Two Detritus Tanks, with coarse and fine screens, each fitted with revolving rakes, chains, and buckets for removing the detritus deposited in these tanks. These tanks are emptied and all the sediment removed once a week.

(2) Twelve Sedimentation Tanks, 128 feet long by 36 feet wide and 6 feet deep, each having a capacity of about 176,000 gallons.

(3) Thirty-five Filters or Bacterial Contact Beds of an area of nearly $10\frac{1}{2}$ acres.

All the Sewage which reaches the works passes through both the Detritus and Sedimentation Tanks, and then through the Contact Beds as far as their capacity will allow, and at present the bare dry weather flow can be treated.

The beds are used as single contact beds, and, as a rule, when in working order, are filled twice daily, except Sundays. No chemicals are used for precipitation, except during periods of hot and continuous dry weather.

During the year two new Filter Beds have been completed—one commencing to work in May, and the other early in November. The area of these beds is about 4,300 square yards, and, like the two previously constructed, are of an average depth of 3 feet, and filled with screened clinker from the Destructors.

This material appears to give satisfactory results, and does not show the same tendency to disintegrate as the mill ashes, of which the older beds were constructed, nor do the weeds grow so readily on the surface.

The total amount of Sewage which reached the works during the year was 1,849,185,000 gallons, equal to an average daily flow of 5,066,000 gallons. Though the total rainfall in 1905 (57·8 inches) was considerably higher than in 1904, there is a tendency for the quantity of sewage to increase above what the increased rainfall will account for. The quantity of organic material contained in the sewage also steadily increases, as the average oxygen test for the

last three years shows:—In 1903 it was 3·54 ; in 1904, 4·24 ; in 1905, 4·37 grains of oxygen in the four hours' test.

The highest day's flow was on November 28th, when 17,636,000 gallons reached the works, and the lowest on June 4th, when only 1,664,000 gallons came down. On one day, May 8th, the oxygen absorption figure reached 22·70 grains per gallon.

The total revenue expenditure during the year was £2,564 10s. 10d., making the cost of treatment £1 7s. 8 $\frac{3}{4}$ d. per million gallons. In the year 1904 the cost was £1 9s. 2d. per million gallons. This cost may be considered a very low one.

Generally, the resulting effluent from the filter beds has been satisfactory, and only in long continued dry weather has it passed the standard of 1 grain of oxygen per gallon consumed in the 4 hours' test, and if judged by the putrefactive test it has been even more satisfactory, as the samples generally keep good in the incubator.

As regards the extension scheme, I have already indicated the lines on which, in my opinion, it should proceed—viz., that a large proportion of the solids in suspension should be removed before the sewage enters the septic tanks; that the storm water tanks should be of sufficient capacity to receive and allow the sedimentation of all the first rush of storm water, and that they should come into use automatically. The Committee should also keep in view the ultimate disposal of the sludge when the valley is occupied, and the necessity for second contact beds if the ordinary contact beds are deepened.

The following report has been prepared by Mr. Valentine :—

The need for an increased tank capacity has again been emphasised during the past twelve months, notwithstanding that, on the whole, the year has been a comparatively dry one. During heavy storm, the tank capacity is far too small, even if all 12 tanks be in use, a thing which in practice never occurs. Inefficient settlement will undoubtedly throw extra work upon the filter beds, of whatever type these may be, and will as a matter of course accelerate the rate of loss of capacity of the beds.

As was pointed out in the 1903 Report, it is advisable to have the present tanks so altered, and any new tanks, whether they be used for storm or dry weather waters, "so constructed that the partial clearance of sludge from a tank can be put into effect without stopping the continuous flow of sewage through the tank in question." It would be possible to conform to this practice in both rectangular and circular tanks.

From long and continued observations and experiments, I feel bound also to state that I am strongly opposed to the introduction of fixed storm overflows. It very often happens, during the early hours of the morning subsequent to heavy rainfall, that the sewage from a purification point of view, easily comes within the limits laid down by the Mersey and Irwell Joint Committee. A comparatively small volume of weak sewage, flowing, say at the rate of 25,000 to 40,000 gallons per hour, may be reinforced by 2 to 4 or 5 times its volume of pure water, mainly of subsoil origin. The mixture contains an extremely small amount of suspended matter, and there could be no detrimental effect in sending such a liquid direct to the natural watercourse. This is particularly noticeable on a dry Sunday after previous heavy rain. Indeed, it is problematical whether the sewage in such a case is not rendered worse by sending it through tanks already containing a fair quantity of sludge.

On the other hand, there are times of heavy flow when I should be very chary in sending any water at all over the storm overflow, even though the rate of flow be fairly well over the "6 times" limit, particularly in the high flow obtained at the beginning of a rainy period after continued dry weather during summer. At such a time the sewage is very foul, not only from suspended organic impurities, but also from the same in solution. It would be advisable to treat such a water to both sedimentation and filtration. This state of affairs is most strikingly

accentuated during the late afternoon and early evening, when the sewage is normally at its strongest.

As to what is 6 times the normal flow, it passeth the wit of man to define. But it is anything between 150,000 gallons to 1,400,000 gallons per hour, according to the time of day. Hence one sees the reasonableness of having a movable storm overflow.

Before leaving this subject, I would strongly recommend that the two main tank effluent carriers should be constructed of concrete or blue brick throughout their *entire* length. Parts of these, and the ground underneath, are in a precarious condition, and they are little bettered by tinkering. A break down during a storm would cause much damage.

As in 1904, the sewage in normal weather is not only increasing in volume, but it is also showing an increase in the amount of organic impurity in suspension and solution. This no doubt is due, to a very great extent, to the conversion of sanitary pans into waste water closets. Thus, although the filtering area has, during the year, been increased by an acre, yet owing to the above fact, and also to the gradual loss in capacity of the filters, we are filtering only a very slightly greater fraction of the entire day's flow. It would not be unwise of the Committee to consider the question of providing some form of clinker washing machinery.

The following table may be of some interest as showing the loss of capacity of the older beds, according to the number of years in use. These figures refer to the beds constructed of mill ashes. Of course, the clinker constructed beds also lose in capacity, but sufficient data is not yet to hand to quote definite figures :—

| Time in Use. | Capacity of Bed.* |
|-----------------------------|-------------------|
| $\frac{3}{4}$ year | 41 per cent. |
| $1\frac{1}{4}$ years | 36 " |
| $1\frac{1}{2}$ " | 35 " |
| $2\frac{1}{4}$ " | 30 " |
| 3 " | 28 " |
| $4\frac{1}{2}$ " | $22\frac{1}{2}$ " |
| 5 " | 20 " |
| $5\frac{1}{2}$ " | 19 " |
| 7 " | 19 " |

The capacity of a bed when first filled is about 56 per cent.

* The total capacity of the bed (100 per cent) is the capacity of the bed before any clinker is added.

During the year, every filter has had two short periods of rest, this method of recuperating being preferable, I think, to one long period. Each bed has been well turned and levelled up, and the black matter near to the shoots taken away. A labourer has been constantly employed during warm weather in weeding the beds. The beds present, superficially at any rate, a good and clean appearance.

The rate of working each filter is shown in the accompanying chart. With regard to the time of contact and other matters of procedure, the same practice has been followed as set out in the Reports for the last 3 years.

The table below shows the amount of pressed sludge (of about 50 per cent. moisture) dealt with at the Works

| | Weight of Pressed Sludge containing Slaked Lime. | | Weight of Quick Lime. | |
|-----------------|---|-------|-----------------------|----------|
| | Tons. | | Tons. | Cwts. |
| January | 606 $\frac{1}{2}$ | ..... | 27 | 15 |
| February | 659 $\frac{1}{4}$ | .... | 33 | 1 |
| March | 818 $\frac{1}{4}$ | ... | 36 | 16 |
| April | 805 | .... | 27 | 10 |
| May | 635 $\frac{1}{4}$ | ..... | 36 | 0 |
| June | 444 $\frac{1}{4}$ | ..... | 18 | 14 |
| July | 476 $\frac{3}{4}$ | ..... | 26 | 16 |
| August | 474 $\frac{1}{4}$ | .... | 11 | 9 |
| September | 484 $\frac{1}{2}$ | ... | 20 | 17 |
| October | 598 | .... | 26 | 1 |
| November | 526 | .... | 18 | 3 |
| December | 539 $\frac{1}{4}$ | .... | 21 | 18 |
| | <u>7,067$\frac{1}{4}$</u> | | <u>305</u> | <u>0</u> |

Thus, whilst the amount of sludge pressed has increased over 1,150 tons on the previous year, the amount of lime used has decreased over 21 tons. This augmentation and decrease are, to a good extent, due to the fact that No. 12 tank—closed septic—was sludged. Here the sludge which filled the tank was in a very solid condition, pressed very easily, and required but little lime. There is little doubt that with better mixing arrangements much better results may still be obtained. It is also probable that by extracting sludge from the tanks whilst they are still working the sludge may be more amenable to efficient pressing.

It should be added that two large tanks (the old lime tanks) full of thin sludge have been dealt with without pressing.

Reference has been made in previous Reports to the question of extracting fat from the dried acidified sludge. Quite distinct from the consideration of a possible profit in any operation of this sort, it must be remembered that the time is not far distant when the valley at the works will not be able to hold any more pressed sludge. More or less of this portion of the works will be required for filtration extensions. In face of this contingency, it would be expedient to consider any feasible method of solving the sludge problem. To my mind, the solution may be found in some form of fat extraction. Roughly speaking, there are two methods of extraction. The one is by the continued action of solvents such as Benzene and Carbon-tetra-chloride, the other by distillation under reduced pressure. Of the two, it is likely that the latter method would prove less troublesome and less costly. Experiments carried out in the laboratory have strengthened me in this opinion. It should be borne in mind that in consequence of the general adoption of waste-water closets in Oldham, the sewage of this borough contains a large amount of soapy matter, either in solution or in fine suspension, probably in a partially dissociated condition. Certain estimations bearing on the percentage of extractible matter (mainly fat in the form of Stearic Acid) in the dried acidified sludge are set forth in the 1903 Report. But it is probable that by slightly acidifying the sewage also before it entered the tank a greater amount of Stearic Acid could be obtained. The market value of pure Stearic Acid is well over £25 per ton. The distilled fat, which is lightish grey in colour, from our sludge would certainly fetch at least half this price.

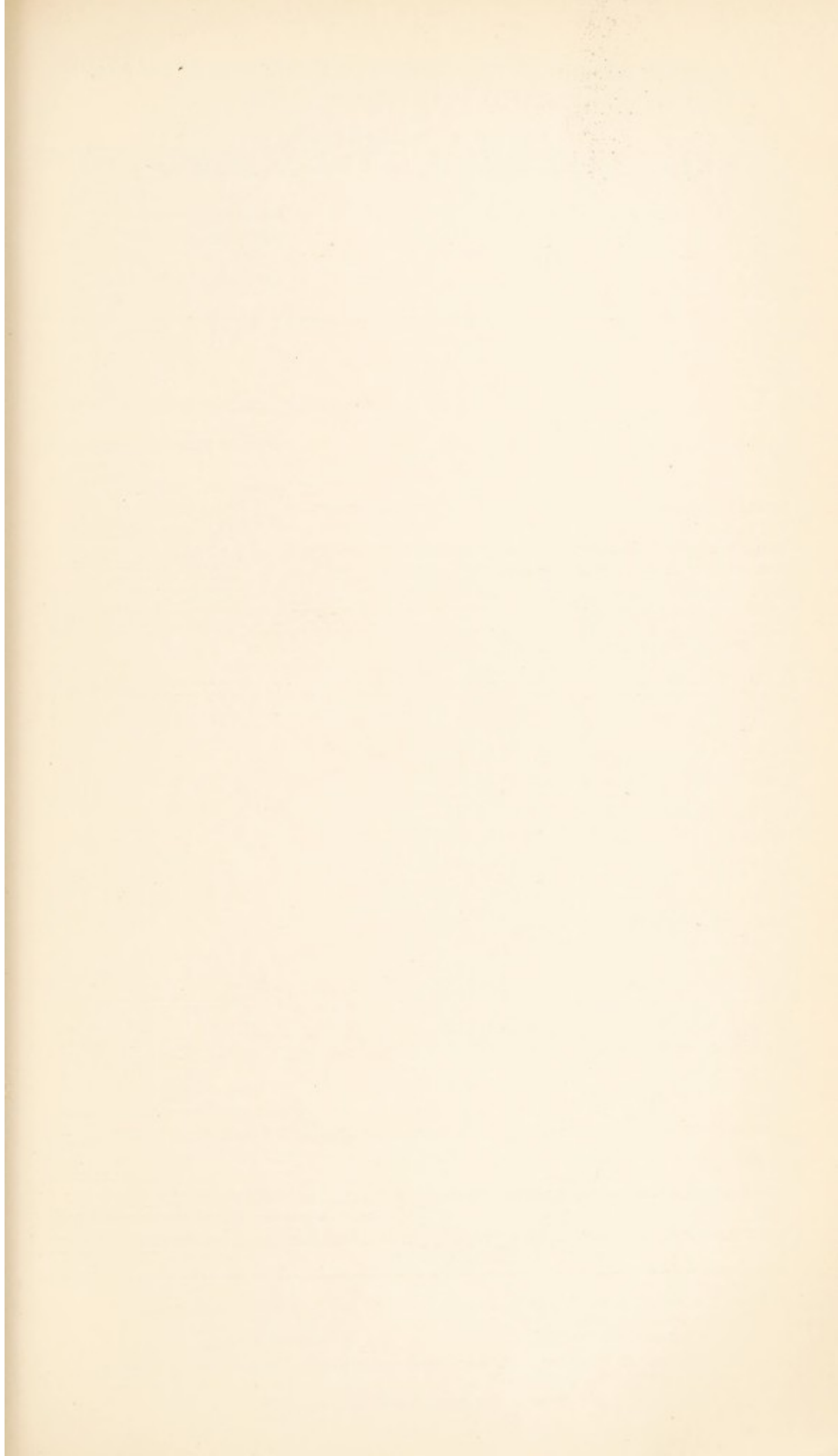
It is also possible that the fat-extracted sludge could be used or even sold as a manure. A few quantitative estimations have been made of the dried fat-extracted (by Benzene) sludge. No estimation has been made of the dried sludge after distillation under reduced pressure, because under the restrictive conditions of experiment in the laboratory it was found impossible to distill over all the fat.

The following is a typical analysis of fat-extracted sludge from which previously about 22 per cent. of its original weight has been extracted by Benzene:—

| | | | |
|----------------------------------|-------|---|-----------|
| Volatile matter = 45 per cent. | | { of which Nitrogen = 2.1 per cent. (and Carbon = 28 per cent. (about)). | |
| Silica (in various forms) | ..... | 40.0 | per cent. |
| Ferric Oxide | ..... | 4.3 | „ |
| Alumina | ..... | .5 | „ |
| Lime | ..... | 4.2 | „ |
| Magnesia | ..... | 1.1 | „ |
| Sulphuric Oxhydride and Alkalies | ..... | Not estimated. | |
| Phosphoric Oxhydride | ..... | 1.4 | per cent. |


Judicious mixing with small quantities of lime (to counteract acidity), and probably of basic slag in order to increase the percentage of phosphates, would enhance the value of this residue as a marketable manure.

It would not be unwise of the Committee to consider the question of erecting a small experimental plant for fat distillation. The cost entailed would be very small, and it would in all probability well pay its way. In connection with this particular point, one must consider that the present-day method of sludge disposal at Slacks Valley entails a dead loss of at least £1,400 per annum. At any rate, some other method than the present dirty and wasteful one will of necessity have to be considered in the near future, and the present moment seems very opportune for gathering the requisite means and gaining the experience necessary for dealing with the matter on a large scale.



Shewing the amount of rest, and rate of working of each filter
— DURING THE YEAR 1905. —

[illegible]

A space marked " " " " " " " " once " "
A space marked  " " " " " " " " rested entirely.

On Aug. 26th filters 1-10 were run continuously 7 hours during a storm.
 " Sept. 6th " 1-20 " " " " 6½ " " " "

Filter 31 began to work on May 23rd
 " 33 " " " " Nov. 13th

No. I. GROUP.

No. 1 Group consists of Filters Nos. 1, 2, 3, 4, with a total area of 5,300 square yards.

No. 1 Filter was filled for the first time in Sep., 1897. Depth of Filter, 2ft. 9in.

No. 2 " " " Oct., 1897. " 2ft. 9in.

No. 3 " " " Oct., 1897. " 2ft. 3in.

No. 4 " " " Oct., 1897. " 2ft. 6in.

Grains of Oxygen absorbed per Gallon in Four Hours' Test

| MONTH..... | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. | Av'ge for Year |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|-----------------|-----------------|-----------------|-----------------|----------------------|
| Sewage | 3.83 | 4.03 | 3.19 | 4.50 | 7.63 | 5.00 | 5.09 | 3.80 | 3.79 | 3.64 | 3.20 | 4.59 | 4.37 |
| Tank Effluent. | 2.43 | 2.77 | 2.21 | 2.30 | 3.04 | 2.91 | 3.06 | 2.34 | 2.20 | 2.04 | 2.06 | 2.75 | 2.51 |
| Filtrate from Group | .59 | .69 | .56 | .71 | 1.10 | .90 | .88 | .61 | .43 | .51 | .43 | .72 | .68 |
| Percentage of Purification from Tank Effluent to Filtrate | $75\frac{3}{4}$ | $75\frac{1}{2}$ | $74\frac{3}{4}$ | 69 | $63\frac{3}{4}$ | $69\frac{1}{3}$ | $71\frac{1}{3}$ | 74 | $80\frac{1}{2}$ | 75 | 77 | $73\frac{3}{5}$ | $73\frac{1}{5}$ |
| Total Percent- age of Puri- fication from Sewage to Filtrate | $84\frac{3}{4}$ | 83 | $82\frac{2}{3}$ | $83\frac{1}{3}$ | $85\frac{3}{5}$ | 82 | $82\frac{1}{2}$ | 84 | $88\frac{2}{3}$ | $86\frac{1}{4}$ | $85\frac{1}{4}$ | $84\frac{1}{2}$ | $84\frac{1}{3}$ |

The average amount of Albuminoid Ammonia present (62 experiments) was .178 grains per gallon.

The average amount of Nitrates, estimated as NH_3 (34 experiments, Aug.--Dec.), was .70 grains per gallon.

470 samples were incubated, of which 16 were doubtful, and 13 became putrid.

No. II. GROUP.

No. II. Group consists of Filters Nos. 5, 6, 7, with a total area of 4,726 square yards.

No. 5 Filter was filled for the first time in Mar., 1898. Depth of Filter, 2ft. 3in.

No. 6 " " " Apr., 1898. " 2ft. 3in.

No. 7 " " " May, 1898. " 2ft. 3in.

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

| MONTH..... | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. | Av'ge for Year |
|--|------|------|------|-------|------|------|------|------|------|------|------|------|----------------------|
| Sewage | 3.83 | 4.03 | 3.19 | 4.50 | 7.63 | 5.00 | 5.09 | 3.80 | 3.79 | 3.64 | 3.20 | 4.59 | 4.37 |
| Tank Effluent. | 2.43 | 2.77 | 2.21 | 2.30 | 3.04 | 2.91 | 3.06 | 2.34 | 2.20 | 2.04 | 2.06 | 2.75 | 2.51 |
| Filtrate from Group | .55 | .61 | .52 | .68 | 1.04 | .75 | .80 | .58 | .39 | .48 | .46 | .70 | .63 |
| Percentage of Purification from Tank Effluent to Filtrate | 77½ | 78 | 76½ | 70⅔ | 65⅔ | 73½ | 74 | 75 | 82½ | 76¼ | 77⅔ | 74⅓ | 75 |
| Total Percent- age of Puri- fication from Sewage to Filtrate | 85⅔ | 84¾ | 83¾ | 83⅔ | 86⅓ | 84½ | 84¼ | 84 | 90 | 86½ | 85⅔ | 84¾ | 85⅓ |

The average amount of Albuminoid Ammonia present (74 experiments) was .178 grains per gallon.

The average amount of Nitrates, estimated as NH_3 (35 experiments, Aug.—Dec. inclusive), was .75 grains per gallon.

465 samples were incubated, of which 15 were doubtful, and 10 became bad.

No. III. GROUP.

No. III. Group consists of Filters Nos. 8, 9, with a total area of 2,951 square yards.

No. 8 Filter was filled for the first time in June, 1898. Depth of Filter, 2ft. 6in.

No. 9 ,, ,, ,, Aug., 1898. ,, 1ft. 9in.

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

| MONTH..... | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. | Average for Year |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------------|
| Sewage | 3.83 | 4.03 | 3.19 | 4.50 | 7.63 | 5.00 | 5.09 | 3.80 | 3.79 | 3.64 | 3.20 | 4.59 | 4.37 |
| Tank Effluent. | 2.43 | 2.77 | 2.21 | 2.30 | 3.04 | 2.91 | 3.06 | 2.34 | 2.20 | 2.04 | 2.06 | 2.75 | 2.51 |
| Filtrate from Group | .55 | .65 | .53 | .68 | 1.04 | .84 | .95 | .64 | .47 | .50 | .46 | .71 | .67 |
| Percentage of Purification from Tank Effluent to Filtrate | $77\frac{1}{2}$ | $76\frac{2}{3}$ | 76 | $70\frac{1}{4}$ | $65\frac{3}{4}$ | $71\frac{1}{4}$ | 69 | $72\frac{1}{2}$ | $78\frac{3}{4}$ | $75\frac{2}{3}$ | $77\frac{1}{2}$ | 74 | $73\frac{2}{3}$ |
| Total Percent- age of Puri- fication from Sewage to Filtrate | $85\frac{3}{4}$ | 84 | $83\frac{1}{3}$ | $83\frac{2}{3}$ | $86\frac{1}{3}$ | $83\frac{1}{4}$ | 81 | 83 | $87\frac{1}{2}$ | $86\frac{1}{4}$ | $85\frac{1}{3}$ | $84\frac{1}{2}$ | $84\frac{1}{2}$ |

The average amount of Albuminoid Ammonia present (69 experiments) was .178 grains per gallon.

The average amount of Nitrates, estimated as NH_3 (33 experiments, Aug.—Dec. inclusive), was .71 grains per gallon.

467 samples were incubated, of which 17 were doubtful, and 10 became bad.

No. IV. GROUP.

No. IV. Group consists of Filters Nos. 10, 11, with a total area of 2,420 square yards.

No. 10 Filter was filled for the first time in Sep., 1898. Depth of Filter, 2ft. 3in.

No. 11 " " " Nov., 1898. " 2ft. 0in.

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

| MONTH..... | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. | Av'ge for Year |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------------|
| Sewage | 3.83 | 4.03 | 3.19 | 4.50 | 7.63 | 5.00 | 5.09 | 3.80 | 3.79 | 3.64 | 3.20 | 4.59 | 4.37 |
| Tank Effluent. | 2.43 | 2.77 | 2.21 | 2.30 | 3.04 | 2.91 | 3.06 | 2.34 | 2.20 | 2.04 | 2.06 | 2.75 | 2.51 |
| Filtrate from Group | .56 | .67 | .54 | .68 | 1.03 | .90 | .93 | .63 | .48 | .51 | .46 | .64 | .67 |
| Percentage of Purification from Tank Effluent to Filtrate | 77 | $75\frac{3}{4}$ | $75\frac{3}{8}$ | $70\frac{1}{4}$ | 66 | $69\frac{2}{3}$ | $69\frac{3}{4}$ | 73 | $78\frac{1}{4}$ | 75 | $77\frac{1}{2}$ | $74\frac{1}{4}$ | $73\frac{3}{8}$ |
| Total Percent- age of Puri- fication from Sewage to Filtrate | $85\frac{1}{2}$ | $83\frac{1}{4}$ | $83\frac{1}{4}$ | $83\frac{2}{3}$ | $86\frac{1}{2}$ | 82 | $81\frac{2}{3}$ | $83\frac{1}{2}$ | $87\frac{1}{3}$ | $85\frac{3}{4}$ | $85\frac{1}{3}$ | $84\frac{3}{4}$ | $84\frac{1}{2}$ |

The average amount of Albuminoid Ammonia present (59 experiments) was .176 grains per gallon.

The average amount of Nitrates, estimated as NH_3 (34 experiments, Aug.—Dec. inclusive), was .72 grains per gallon.

460 samples were incubated, of which 23 were doubtful, and 7 became bad.

No. V. GROUP.

No. V. Group consists of Filters Nos. 12, 13, 14, with a total area of 4,259 square yards.

No. 12 Filter was filled for the first time in July, 1901. Depth of Filter, 3ft.0in.

No. 13 " " " Aug., 1900. " 3ft.0in.

No. 14 " " " Oct., 1900. " 3ft.0in.

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

| MONTH..... | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. | Av'ge for Year |
|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------------|
| Sewage | 3.83 | 4.03 | 3.19 | 4.50 | 7.63 | 5.00 | 5.09 | 3.80 | 3.79 | 3.64 | 3.20 | 4.59 | 4.37 |
| Tank Effluent. | 2.43 | 2.77 | 2.21 | 2.30 | 3.04 | 2.91 | 3.06 | 2.34 | 2.20 | 2.04 | 2.06 | 2.75 | 2.51 |
| Filtrate from } Group | .56 | .65 | .54 | .68 | 1.10 | .88 | .87 | .57 | .39 | .48 | .46 | .71 | .66 |
| Percentage of Purification from Tank Effluent to Filtrate | 77 $\frac{1}{4}$ | 76 $\frac{1}{2}$ | 75 $\frac{2}{3}$ | 70 $\frac{1}{4}$ | 63 $\frac{2}{3}$ | 69 $\frac{3}{4}$ | 71 $\frac{1}{2}$ | 75 $\frac{2}{3}$ | 82 $\frac{1}{4}$ | 76 $\frac{1}{3}$ | 77 $\frac{2}{3}$ | 74 | 74 $\frac{1}{4}$ |
| Total Percent- age of Puri- fication from Sewage to Filtrate | 85 $\frac{2}{3}$ | 83 $\frac{2}{3}$ | 83 $\frac{1}{4}$ | 83 $\frac{2}{3}$ | 85 $\frac{1}{2}$ | 82 $\frac{1}{2}$ | 82 $\frac{1}{2}$ | 85 | 89 $\frac{3}{4}$ | 86 $\frac{3}{4}$ | 85 $\frac{2}{3}$ | 84 $\frac{1}{2}$ | 85 |

The average amount of Albuminoid Ammonia present (71 experiments) was .177 grains per gallon.

The average amount of Nitrates, estimated as NH_3 (34 experiments, Aug.—Dec. inclusive), was .72 grains per gallon.

471 samples were incubated, of which 14 were doubtful, and 14 became bad.

No. VI. GROUP.

No. VI. Group consists of Filters Nos. 15, 16, with a total area of 2,859 square yards.

No. 15 Filter was filled for the first time in Feb., 1901. Depth of Filter, 3ft.0in.

No. 16 " " " May, 1902. " 3ft.0in.

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

| MONTH..... | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. | Av'ge for Year |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------------|
| Sewage | 3.83 | 4.03 | 3.19 | 4.50 | 7.63 | 5.00 | 5.09 | 3.80 | 3.79 | 3.64 | 3.20 | 4.59 | 4.37 |
| Tank Effluent. | 2.43 | 2.77 | 2.21 | 2.30 | 3.04 | 2.91 | 3.06 | 2.34 | 2.20 | 2.04 | 2.06 | 2.75 | 2.51 |
| Filtrate from Group | .54 | .60 | .57 | .69 | 1.11 | .95 | .88 | .64 | .56 | .52 | .45 | .67 | .68 |
| Percentage of Purification from Tank Effluent to Filtrate | $77\frac{3}{4}$ | $78\frac{1}{2}$ | $74\frac{1}{4}$ | 70 | $63\frac{1}{4}$ | $67\frac{3}{4}$ | $71\frac{1}{3}$ | $72\frac{1}{2}$ | $74\frac{3}{4}$ | $74\frac{1}{2}$ | 78 | $75\frac{1}{2}$ | $73\frac{1}{4}$ |
| Total Percent- age of Puri- fication from Sewage to Filtrate | 86 | $85\frac{1}{4}$ | $82\frac{1}{4}$ | $83\frac{1}{3}$ | $85\frac{1}{2}$ | 81 | $82\frac{1}{2}$ | $83\frac{1}{4}$ | 85 | $85\frac{1}{4}$ | $85\frac{3}{4}$ | $85\frac{1}{3}$ | $84\frac{1}{4}$ |

The average amount of Albuminoid Ammonia present (74 experiments) was .173 grains per gallon.

The average amount of Nitrates, estimated as NH_3 (38 experiments, Aug.—Dec. inclusive), was .66 grains per gallon.

463 samples were incubated, of which 20 were doubtful, and 17 became bad.

No. VII. GROUP.

No. VII. Group consists of Filters Nos. 17, 18, with a total area of 2,524 square yards.

No. 17 Filter was filled for the first time in July, 1902. Depth of Filter, 3ft.0in.

No. 18 ,, ,, ,, Sept., 1901. ,, 3ft.0in.

Grains of Oxygen absorbed per Gallon in Four Hours' Test

| MONTH..... | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. | Av'ge for Year |
|--|------|------|------|-------|------|------|------|------|------|------|------|------|----------------------|
| Sewage | 3.83 | 4.03 | 3.19 | 4.50 | 7.63 | 5.00 | 5.09 | 3.80 | 3.79 | 3.64 | 3.20 | 4.59 | 4.37 |
| Tank Effluent. | 2.43 | 2.77 | 2.21 | 2.30 | 3.04 | 2.91 | 3.06 | 2.34 | 2.20 | 2.04 | 2.06 | 2.75 | 2.51 |
| Filtrate from Group | .55 | .57 | .57 | .69 | 1.11 | .95 | 1.00 | .65 | .55 | .51 | .45 | .67 | .69 |
| Percentage of Purification from Tank Effluent to Filtrate | 77½ | 79½ | 74½ | 70 | 63½ | 67¾ | 67¾ | 72½ | 75 | 75 | 77¾ | 75½ | 73 |
| Total Percent- age of Puri- fication from Sewage to Filtrate | 85¾ | 85¾ | 82½ | 83½ | 85½ | 81 | 80 | 83 | 85½ | 86 | 85¾ | 85½ | 84 |

The average amount of Albuminoid Ammonia present (76 experiments) was .173 grains per gallon.

The average amount of Nitrates, estimated as NH_3 (40 experiments, Aug.—Dec. inclusive), was .68 grains per gallon.

467 samples were incubated, of which 23 were doubtful, and 21 became bad.

No. VIII. GROUP.

No. VIII. Group consists of Filters Nos. 19, 20, 21, 22, with a total area of 6,063 square yards.

No. 19 Filter was filled for the first time on May 28th, 1902. Depth of Filter, 3ft. 0in.

No. 20 " " " Dec. 1st, 1902. " 3ft. 0in.

No. 21 " " " Oct. 20th, 1902. " 3ft. 0in.

No. 22 " " " May 1st, 1903. " 3ft. 0in.

Grains of Oxygen absorbed per Gallon in Four Hours' Test

| MONTH..... | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. | Av'ge for Year |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------------|
| Sewage | 3.83 | 4.03 | 3.19 | 4.50 | 7.63 | 5.00 | 5.09 | 3.80 | 3.79 | 3.64 | 3.20 | 4.59 | 4.37 |
| Tank Effluent. | 2.43 | 2.77 | 2.21 | 2.30 | 3.04 | 2.91 | 3.06 | 2.47 | 2.61 | 2.46 | 2.06 | 2.75 | 2.59 |
| Filtrate from } Group | .66 | .77 | .63 | .77 | 1.21 | 1.13 | 1.19 | .77 | .78 | .62 | .54 | .74 | .82 |
| Percentage of Purification from Tank Effluent to Filtrate | $72\frac{2}{3}$ | $72\frac{1}{4}$ | $71\frac{3}{4}$ | $66\frac{1}{4}$ | $60\frac{1}{2}$ | $61\frac{1}{4}$ | 61 | $68\frac{3}{4}$ | 70 | 75 | $73\frac{2}{3}$ | 73 | 69 |
| Total Percent- age of Puri- fication from Sewage to Filtrate | $82\frac{3}{4}$ | 81 | $80\frac{1}{3}$ | $81\frac{1}{3}$ | 84 | $77\frac{1}{2}$ | $75\frac{3}{4}$ | $79\frac{2}{3}$ | $79\frac{1}{3}$ | $83\frac{1}{2}$ | $83\frac{1}{4}$ | $83\frac{3}{4}$ | 81 |

The average amount of Albuminoid Ammonia present (70 experiments) was .20 grains per gallon.

The average amount of Nitrates, estimated as NH_3 (31 experiments, Aug.—Dec. inclusive), was .66 grains per gallon.

453 samples were incubated, of which 31 were doubtful, and 44 became bad.

No. IX. GROUP.

No. IX. Group consists of Filters Nos. 26, 27, with a total area of 2,503 square yards.

No. 26 Filter was filled for the first time on Jan. 26th, 1903. Depth of Filter, 3ft. 0in.

No. 27 " " " April 16th, 1903. " 3ft. 0in.

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

| MONTH..... | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. | Average for Year |
|--|------------------|------------------|------|-------|------------------|------|------------------|------------------|------------------|------------------|------------------|------------------|------------------------|
| Sewage | 3.83 | 4.03 | 3.19 | 4.50 | 7.63 | 5.00 | 5.09 | 3.80 | 3.79 | 3.64 | 3.20 | 4.59 | 4.37 |
| Tank Effluent. | 2.43 | 2.77 | 2.21 | 2.30 | 3.04 | 2.91 | 3.06 | 2.47 | 2.61 | 2.46 | 2.06 | 2.75 | 2.59 |
| Filtrate from Group | .66 | .84 | .65 | .79 | 1.42 | 1.25 | 1.26 | .94 | .83 | .64 | .53 | .77 | .88 |
| Percentage of Purification from Tank Effluent to Filtrate | 73 $\frac{1}{4}$ | 69 $\frac{3}{4}$ | 71 | 66 | 53 $\frac{1}{4}$ | 57 | 59 | 61 $\frac{3}{4}$ | 68 $\frac{3}{4}$ | 74 $\frac{1}{4}$ | 74 $\frac{1}{4}$ | 71 $\frac{2}{3}$ | 66 $\frac{1}{3}$ |
| Total Percent- age of Puri- fication from Sewage to Filtrate | 83 | 79 $\frac{1}{4}$ | 80 | 81 | 81 $\frac{1}{4}$ | 75 | 74 $\frac{2}{3}$ | 75 $\frac{1}{4}$ | 78 $\frac{2}{3}$ | 82 $\frac{1}{2}$ | 83 $\frac{1}{2}$ | 83 $\frac{1}{4}$ | 80 |

The average amount of Albuminoid Ammonia present (56 experiments) was .194 grains per gallon.

The average amount of Nitrates, estimated as NH_3 (26 experiments, Aug.—Dec. inclusive), was .58 grains per gallon.

432 samples were incubated, of which 22 were doubtful, and 55 became bad.

No. X. GROUP.

No. X. Group consists of Filters Nos. 23, 24, 25, with a total area of 2,849 square yards.

No. 23 Filter was filled for the first time on May 19th, 1903. Depth of Filter, 3ft. 0in.

No. 24 " " " July 8th, 1903. " 3ft. 0in.

No. 25 " " " July 29th, 1903. " 3ft. 0in.

Grains of Oxygen absorbed per Gallon in Four Hours' Test

| MONTH..... | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. | Average for Year |
|--|------|------|------|-------|------|------|------|------|------|------|------|------|------------------------|
| Sewage | 3.83 | 4.03 | 3.19 | 4.50 | 7.63 | 5.00 | 5.09 | 3.80 | 3.79 | 3.64 | 3.20 | 4.59 | 4.37 |
| Tank Effluent. | 2.43 | 2.77 | 2.21 | 2.30 | 3.04 | 2.91 | 3.06 | 2.47 | 2.61 | 2.46 | 2.06 | 2.75 | 2.59 |
| Filtrate from Group | .72 | .87 | .68 | .79 | 1.35 | 1.28 | 1.25 | .93 | .92 | .68 | .54 | .79 | .90 |
| Percentage of Purification from Tank Effluent to Filtrate | 70½ | 68½ | 69¼ | 65½ | 55¾ | 56 | 59 | 62½ | 64½ | 72½ | 73½ | 71 | 65¾ |
| Total Percent- age of Puri- fication from Sewage to Filtrate | 81½ | 78½ | 78¾ | 81 | 82¼ | 74½ | 75¼ | 75¾ | 75½ | 81½ | 83 | 82½ | 79 |

The average amount of Albuminoid Ammonia present (65 experiments) was .21 grains per gallon.

The average amount of Nitrates, estimated as NH_3 (27 experiments, Aug.—Dec. inclusive), was .58 grains per gallon.

437 samples were incubated, of which 29 were doubtful, and 76 became bad.

No. XI. GROUP.

This Group consists of Filters Nos. 28, 29, with a total area of 3,256 square yards.

No.28 Filter was filled for the first time on Nov. 13th, 1903. Depth of Filter, 3ft.0in.

No.29 " " " Mar. 21st, 1904. " 3ft.0in.

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

| MONTH..... | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. | Av'ge for Year |
|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------------|
| Sewage | 3.83 | 4.03 | 3.19 | 4.50 | 7.63 | 5.00 | 5.09 | 3.80 | 3.79 | 3.64 | 3.20 | 4.59 | 4.37 |
| Tank Effluent. | 2.43 | 2.77 | 2.21 | 2.30 | 3.04 | 2.91 | 3.06 | 2.47 | 2.61 | 2.53 | 2.06 | 2.75 | 2.60 |
| Filtrate from Group | .81 | .92 | .72 | .84 | 1.41 | 1.28 | 1.36 | 1.05 | .99 | .78 | .61 | .86 | .97 |
| Percentage of Purification from Tank Effluent to Filtrate | 67 | 66 $\frac{2}{3}$ | 67 $\frac{3}{4}$ | 63 $\frac{2}{3}$ | 53 $\frac{2}{3}$ | 55 | 55 $\frac{1}{3}$ | 57 $\frac{1}{4}$ | 61 $\frac{2}{3}$ | 68 $\frac{3}{4}$ | 70 $\frac{1}{4}$ | 68 $\frac{3}{4}$ | 63 |
| Total Percent- age of Puri- fication from Sewage to Filtrate | 79 $\frac{1}{4}$ | 77 $\frac{1}{4}$ | 77 $\frac{3}{4}$ | 80 | 81 $\frac{1}{2}$ | 73 $\frac{3}{4}$ | 72 $\frac{1}{2}$ | 72 $\frac{1}{4}$ | 73 $\frac{1}{2}$ | 78 $\frac{1}{2}$ | 80 $\frac{3}{4}$ | 81 $\frac{1}{4}$ | 77 $\frac{1}{3}$ |

The average amount of Albuminoid Ammonia present (31 experiments) was .241 grains per gallon.

The average amount of Nitrates, estimated as NH_3 (16 experiments, Aug.—Dec. inclusive), was .52 grains per gallon.

364 samples were incubated, of which 31 were doubtful, and 83 became bad.

No. XII. GROUP.

This Group consists of Filters Nos. 30, 31, 32, with a total area of 7,035 square yards.

No.30 Filter was filled for the first time on June 30th, 1904. Depth of Filter, 3ft.0in.
Area, 2,600 square yards.

No.31 Filter was filled for the first time on May 23rd, 1905. Depth of Filter, 3ft.0in.
Area, 2,272 square yards.

No.32 Filter was filled for the first time on Nov. 7th, 1904. Depth of Filter, 3ft.0in.
Area, 2,163 square yards.

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

| MONTH... .. | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. | Av'ge for Year |
|--|------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------------|
| Sewage | 3.83 | 4.03 | 3.19 | 4.50 | 7.63 | 5.00 | 5.09 | 3.80 | 3.56 | 3.64 | 3.20 | 4.59 | 4.35 |
| Tank Effluent. | 2.43 | 2.77 | 2.21 | 2.30 | 3.04 | 3.25 | 3.06 | 2.47 | 2.44 | 2.53 | 2.22 | 2.75 | 2.63 |
| Filtrate from Group | .97 | 1.07 | .85 | .92 | 1.42 | 1.39 | 1.49 | 1.10 | .90 | .88 | .67 | .92 | 1.05 |
| Percentage of Purification from Tank Effluent to Filtrate | 61 | 61 $\frac{1}{4}$ | 61 $\frac{1}{2}$ | 60 | 53 $\frac{1}{4}$ | 57 $\frac{1}{4}$ | 51 $\frac{1}{3}$ | 55 $\frac{1}{4}$ | 63 | 65 $\frac{1}{4}$ | 69 $\frac{2}{3}$ | 66 $\frac{2}{3}$ | 60 $\frac{1}{2}$ |
| Total Percent- age of Puri- fication from Sewage to Filtrate | 75 | 73 $\frac{1}{2}$ | 73 $\frac{1}{2}$ | 78 $\frac{1}{3}$ | 81 $\frac{1}{4}$ | 72 $\frac{1}{2}$ | 70 | 71 | 74 $\frac{2}{3}$ | 75 $\frac{3}{4}$ | 79 | 80 | 75 $\frac{1}{3}$ |

The average amount of Albuminoid Ammonia present (27 experiments) was .223 grains per gallon.

The average amount of Nitrates, estimated as NH_3 (18 experiments, Aug.—Dec. inclusive), was .47 grains per gallon.

328 samples were incubated, of which 40 were doubtful, and 75 became bad.

B AND C FILTERS.

B and C Filters have a total area of 2,982 square yards.

B Filter was filled for the first time on Nov. 29th, 1898. Depth of Filter, 2ft. 6in.

C " " " Nov. 30th, 1898. " 2ft. 6in.

Grains of Oxygen absorbed per Gallon in Four Hours' Test

| MONTH..... | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. | Av'ge for Year |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------------|
| Sewage | 3.83 | 4.03 | 3.19 | 4.50 | 7.63 | 5.00 | 5.09 | 3.80 | 3.79 | 3.64 | 3.20 | 4.59 | 4.37 |
| Tank Effluent. | 2.43 | 2.77 | 2.21 | 2.30 | 3.04 | 2.91 | 3.06 | 2.34 | 2.20 | 2.04 | 2.06 | 2.75 | 2.51 |
| Filtrate from Group | .49 | .61 | .56 | .74 | 1.07 | .73 | .67 | .45 | .41 | .50 | .37 | .50 | .59 |
| Percentage of Purification from Tank Effluent to Filtrate | $79\frac{3}{4}$ | $78\frac{1}{4}$ | $74\frac{3}{4}$ | $67\frac{3}{4}$ | $64\frac{3}{4}$ | 75 | $77\frac{3}{4}$ | $80\frac{1}{3}$ | $81\frac{1}{4}$ | $75\frac{1}{2}$ | $81\frac{3}{4}$ | $81\frac{1}{2}$ | $76\frac{1}{2}$ |
| Total Percent- age of Puri- fication from Sewage to Filtrate | 87 | 85 | $82\frac{1}{2}$ | $82\frac{1}{3}$ | 86 | $85\frac{1}{2}$ | $86\frac{1}{4}$ | $88\frac{1}{4}$ | 89 | $86\frac{1}{4}$ | $88\frac{1}{3}$ | 89 | $86\frac{1}{4}$ |

The average amount of Albuminoid Ammonia present (74 experiments) was .178 grains per gallon.

The average amount of Nitrates, estimated as NH_3 (27 experiments, Aug.—Dec. inclusive), was .78 grains per gallon.

463 samples were incubated, of which 11 were doubtful, and 11 became bad.

A. AND C. FLETCHER.

1. The first series of experiments was made.

2. The second series of experiments was made on Nov. 23, 1881. The results were as follows:

3. The third series of experiments was made on Nov. 24, 1881.

4. The fourth series of experiments was made on Nov. 25, 1881.

5. The fifth series of experiments was made on Nov. 26, 1881.

6. The sixth series of experiments was made on Nov. 27, 1881.

7. The seventh series of experiments was made on Nov. 28, 1881.

8. The eighth series of experiments was made on Nov. 29, 1881.

9. The ninth series of experiments was made on Nov. 30, 1881.

10. The tenth series of experiments was made on Dec. 1, 1881.

11. The eleventh series of experiments was made on Dec. 2, 1881.

12. The twelfth series of experiments was made on Dec. 3, 1881.

13. The thirteenth series of experiments was made on Dec. 4, 1881.

14. The fourteenth series of experiments was made on Dec. 5, 1881.

15. The fifteenth series of experiments was made on Dec. 6, 1881.

16. The sixteenth series of experiments was made on Dec. 7, 1881.

17. The seventeenth series of experiments was made on Dec. 8, 1881.

18. The eighteenth series of experiments was made on Dec. 9, 1881.

19. The nineteenth series of experiments was made on Dec. 10, 1881.

20. The twentieth series of experiments was made on Dec. 11, 1881.

21. The twenty-first series of experiments was made on Dec. 12, 1881.

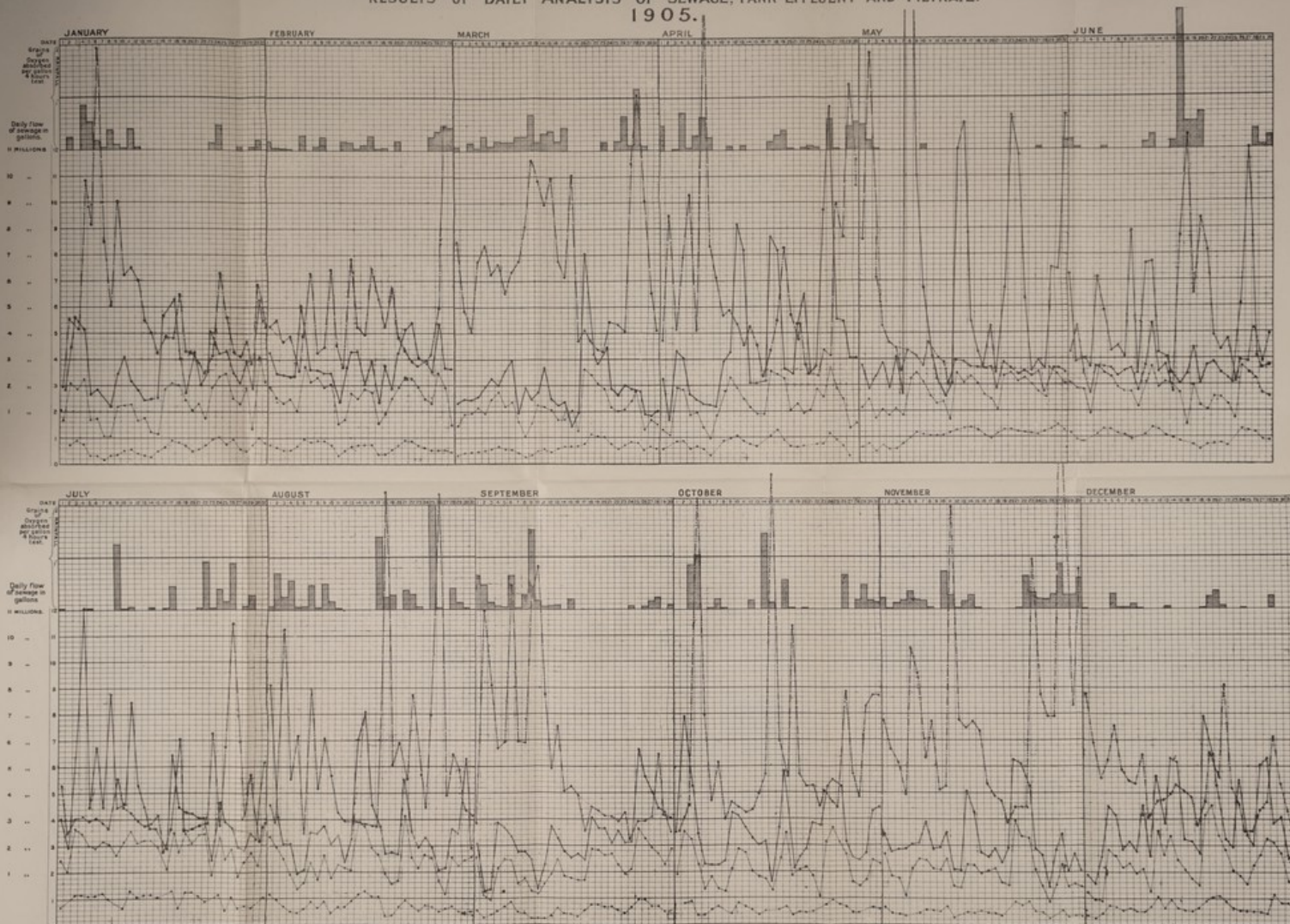
22. The twenty-second series of experiments was made on Dec. 13, 1881.

23. The twenty-third series of experiments was made on Dec. 14, 1881.

24. The twenty-fourth series of experiments was made on Dec. 15, 1881.

25. The twenty-fifth series of experiments was made on Dec. 16, 1881.

OLDHAM CORPORATION SEWAGE WORKS.
RESULTS OF DAILY ANALYSIS OF SEWAGE, TANK EFFLUENT AND FILTRATE.



The Thick Line represents the amount of Oxygen absorbed by the SEWAGE in 4 hours test.
The Thin " " " " " " " " TANK EFFLUENT " " " "
The Dotted " " " " " " " " FILTRATE " " " "
The Daily flow is represented by

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

