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County Board of Health

REPORT

Medical Officer of Health

for the year 1900

Presented to the County Board of Health

at a meeting held on the 10th day of January 1901

at the County Hall, Drogheda

by the Medical Officer of Health

W. J. M. M.

HEALTH COMMITTEE

1901





County Palatine of Chester.

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REPORT

OF THE

*Medical Officer of Health*

FOR THE YEAR 1894.

WITH STATISTICAL INFORMATION AND  
SUMMARY OF REPORTS OF DISTRICT  
MEDICAL OFFICERS OF HEALTH.

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PRESENTED TO THE  
PUBLIC HEALTH COMMITTEE  
OF THE COUNTY COUNCIL,

*July 12th, 1895.*

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REPORT  
OF THE  
Medical Officer of Health

*For the Year ending Dec. 31st, 1894.*

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*To the Public Health Committee of the County Council  
of the County Palatine of Chester  
and to the Members of the County Council.*

REPORT

Medical Officer of Health

for the Year ending 31st Dec 1911

I have the honor to acknowledge the receipt of the report of the Medical Officer of Health for the year ending 31st Dec 1911, and to inform you that the same has been forwarded to the Board of Health for their consideration.

I am, Sir, very respectfully,  
Your obedient servant,  
The Medical Officer of Health

# Report of the Medical Officer of Health

For the Year ending December 31st, 1894.

**Area and Population.**—The Geographical County of Chester has an area of 657,068 acres, and the population at the taking of the Census in 1891 was 730,058, *i.e.*, just over one (1.11) person to an acre.

The differences between the area and Census population of the Geographical County and those of the Administrative County, together with the County Boroughs of Birkenhead, Chester and Stockport are shown as follows:—

|   | Area in Acres. | Population Census, 1891. |
|---|----------------|--------------------------|
| Geographical County ... ..  | 657068         | 730058                   |
| Add   |                |                          |
| Part of Stockport County Borough in the Geographical County of Lancaster ... ..             | 480            | 16368                    |
| Part of Stalybridge Urban Sanitary District in the Geographical County of Lancaster ... ..  | 685            | 7278                     |
|   | <hr/>          | <hr/>                    |
|   | 658233         | 753704                   |
| Deduct  |                |                          |
| Part of Mossley Urban Sanitary District in the Administrative County of Lancaster ... ..    | 2702           | 2887                     |
| Part of New Mills Urban Sanitary District in the Administrative County of Derby ... ..      | 127            | 1163                     |
| Part of Warrington Urban Sanitary District in the Administrative County of Lancaster ... .. | 368            | 5785                     |
|   | <hr/>          | <hr/>                    |
| Administrative County and 3 County Boroughs ... ..  | 655036         | 743869                   |

From the area and population thus obtained must be deducted the area and population of the 3 County Boroughs,

and the result will be the area and population of the Administrative County. This is done below.

|   | Area in Acres. | Population Census, 1891. |
|---|----------------|--------------------------|
| Administrative County and 3 County Boroughs ... | 655036         | 743869                   |
| Deduct  |                |                          |
| County Borough of Birkenhead ...                | 3849           | 99857                    |
| County Borough of Chester ...                   | 2960           | 37105                    |
| County Borough of Stockport                     | 2200           | 70263                    |
| Administrative County ...                       | 646027         | 536644                   |

The Census population of the Administrative County was thus less than one (0·83) person to an acre.

The Registration County has an area of 643,791 acres and a Census population of 707,978, its boundaries differing from those of the Geographical County as well as those of the Administrative County and 3 County Boroughs. The Registration County is indeed simply a group of 10 Registration Districts, generally co-extensive with Poor Law Unions, and covering nearly the same area as the Geographical County, but less in extent by about 13,000 acres.

These 10 Registration Districts suggest a convenient way of sub-dividing the Administrative County. There is, however, no advantage in making two districts out of the Hundred of Wirral. With this exception the Registration Districts may be adopted, and all that requires to be done is to make them co-extensive with Sanitary Districts or parts of Sanitary Districts in the County. The 9 Districts thus formed naturally fall into 3 groups—Wirral, Chester and Runcorn being the 3 Western Districts; Altrincham, Northwich and Nantwich, the 3 Central Districts; and Stockport, Macclesfield and Congleton, the 3 Eastern Districts.

The Urban and Rural Sanitary Districts in each of the nine Sub-divisions of the County are as follows:—

| No. | Sub-division of County. | Urban Sanitary Districts.   | Rural Sanitary Districts. |
|-----|-------------------------|---|---------------------------|
| 1   | Wirral ...              | Wallasey, Higher and Lower Bebington, Bromborough, Hoyle and West Kirby, Neston and Parkgate. | Wirral, Birkenhead.       |

| No. | Sub-division of County. | Urban Sanitary Districts.   | Rural Sanitary Districts.                             |
|-----|-------------------------|---|---|
| 2   | Chester ...             | Hoole, Tarporley.   | Chester, Tarvin, part of Whitchurch, part of Wrexham. |
| 3   | Runcorn ...             | Runcorn.  | Runcorn, part of Warrington                           |
| 4   | Altrincham ...          | Altrincham, Bowdon, Lymm, Sale, Wilmslow.   | Altrincham.   |
| 5   | Northwich ...           | Northwich, Middlewich, Winsford.  | Northwich.  |
| 6   | Nantwich ...            | Crewe, Nantwich.  | Nantwich, part of Drayton.                            |
| 7   | Stockport ...           | Hyde, Stalybridge, Dukinfield, Bredbury and Romiley, Cheadle and Gatley, Hollingworth, Marple, Mottram. | Stockport, part of Ashton-under-Lyne.                 |
| 8   | Macclesfield ...        | Macclesfield, Bollington, Chorley, Yeardley-cum-Whaley.   | Macclesfield, part of Hayfield.                       |
| 9   | Congleton ...           | Congleton, Buglawton, Sandbach.   | Congleton.  |

The year 1894 is the last in which these Districts will be known as Sanitary Districts. The following changes have also been effected during the year:—

1. The Rural Sanitary District of Birkenhead now forms part of the Rural District of Wirral.
2. The part of Whitechurch Rural Sanitary District in Cheshire is now the Rural District of Malpas.
3. The part of Warrington Rural Sanitary District in Cheshire is now part of Runcorn Rural District.
4. Altrincham Rural Sanitary District is now Bucklow Rural District.
5. The part of Ashton-under-Lyne Rural Sanitary District in Cheshire is now the Rural District of Tintwistle.
6. Chorley Urban Sanitary District is now Alderley Edge Urban District.
7. The part of Hayfield Rural Sanitary District in Cheshire is now the Rural District of Disley.
8. Alsager has been separated from the Rural District of Congleton and formed into an Urban District.

The areas of the Sub-divisions of the Administrative County, the Census population, and persons per acre are as follows:—

| Sub-divisions of County. | Area<br>in Acres. | Population<br>Census, 1891. | Persons<br>per Acres. |
|--------------------------|-------------------|-----------------------------|-----------------------|
| Western Sub-division—    |                   |                             |                       |
| Wirral ... ..            | 50664             | 70357                       | 1.38                  |
| Chester ... ..           | 120087            | 34605                       | 0.28                  |
| Runcorn ... ..           | 50499             | 44711                       | 0.88                  |
| Central Sub-division—    |                   |                             |                       |
| Altrincham ... ..        | 75303             | 65460                       | 0.86                  |
| Northwich ... ..         | 62564             | 50278                       | 0.80                  |
| Nantwich ... ..          | 101935            | 63132                       | 0.61                  |
| Eastern Sub-division—    |                   |                             |                       |
| Stockport ... ..         | 45933             | 112678                      | 2.45                  |
| Macclesfield ... ..      | 88469             | 63016                       | 0.71                  |
| Congleton ... ..         | 50573             | 32367                       | 0.64                  |

This differs from the tabular statement as regards Sub-divisions presented in the Annual Report for 1892, as the four Townships of Tiverton, Tilstone Fearnall, Beeston, and Burwardsley were in that year taken from the Nantwich Rural Sanitary District and added to the Tarvin Rural Sanitary District. Thus 5617 acres and 1401 population have been transferred from the Nantwich Sub-division to the Chester Sub-division.

The number of Urban Districts in the Administrative County (including Alsager, which has been a separate Urban District since April, 1894) is 35—5 Municipal Boroughs and 30 other Urban Districts. There are 16 Rural Districts (omitting Birkenhead Rural District, which is merged in Wirral) wholly or in part within the Administrative County. The area and Census population of the five Municipal Boroughs taken together, of the other Urban Districts, and of the Rural Districts is as follows:—

|   | Area in Acres. | Population at<br>Census. |
|---|----------------|--------------------------|
| 5 Municipal Boroughs ...                                | 14189          | 136989                   |
| 30 other Urban Districts ...                            | 68612          | 210007                   |
| 16 Rural Districts or parts<br>of Rural Districts } ... | 563226         | 189648                   |

This differs from the corresponding tabular statement presented in the Annual Report for 1892, as parts of Coppenthal Church, Shavington-cum-Gresty, and Wistaston were, from November, 1892, taken from the Nantwich Rural District and

added to the Borough of Crewe, transferring 857 acres and 4022 population from the Rural Districts to the Municipal Boroughs. It differs also from the corresponding tabular statement presented in the Annual Report for 1893, as the area (2241 acres) and Census population (1912) of Alsager have been transferred from the Rural Districts to the Urban Districts.

The Census was taken in the first week of April, 1891, and for the Annual Report of 1894 an estimate is required of the population at midsummer, 1894. This estimate has been made for each District by the District Medical Officer of Health. The increase during the 3 years and 3 months is set down at 18,567. Thus, in the middle of the year 1894, the population was 555,211. It was thus distributed:—

|   |     |     |        |
|---|-----|-----|--------|
| 5 Municipal Boroughs                              | ... | ... | 141655 |
| 30 other Urban Districts                          | ... | ... | 220606 |
| 16 Rural Districts or parts of Rural Districts... |     |     | 192950 |

The estimated increase is not excessive, being at the rate of 10·6 per cent. on the decennium. The actual increase of population in the area representing the Administrative County in the ten years 1881-91 was at the rate of 12·5 per cent. It will be noticed, on referring to Table I. in the Appendix, that several Districts, as the Boroughs of Macclesfield and Congleton, are not estimated as having increased. Both these Boroughs decreased in population during the ten years 1881-91. The population of the town of Runcorn is estimated to be 1050 less than at the date of the Census. Again it will be observed that there has been a considerable falling off in the population of the Rural Districts of Chester and Wirral since the Census. This is owing to 1137 persons employed in making the Manchester Ship Canal in the Chester Rural District and 2432 persons similarly employed in the Wirral Rural District having left the County since the completion of the Canal.

The great difference in the density of population in the Sub-divisions of the County has already been noted. In the various districts it is yet more marked. Thus in Altrincham Urban District there are upwards of 19 persons to an acre, in Middlewich nearly 18 persons to an acre, and in Crewe and Runcorn Urban District more than 16 persons to an acre, whilst in two Urban Districts, Buglawton and Tarporley, there are more than two acres to a person. In some Rural Districts there are 4 or 5 acres to a person. The persons to an acre in the 3 groups of Districts, in 1894, were:—

|  |     |     |              |
|--|-----|-----|--------------|
| 5 Municipal Boroughs                           | ... | ... | 9·98 persons |
| 30 other Urban Districts                       | ... | ... | 3·21 „       |
| 16 Rural Districts or parts of Rural Districts |     |     | 0·34 „       |

This is a matter of interest, as, other things being equal, the insalubrity of a place may be expected to increase with the density of population.

**Births.**—The number of births registered in the Administrative County, in 1894, was 16,190. The birth-rate was there-



fore 29·1. In the Report for 1892 no returns as to births were received from four Districts. In the Report for 1893 Runcorn Urban District was the only one not furnishing a return as to births. The birth returns are thus complete for the first time.

The birth-rates per 1000 living were in some few districts high, and in many very low. In Middlewich the birth-rate was upwards of 43 per 1000, and in Neston and Parkgate upwards of 40 per 1000, whereas in Bowdon it was only 12·3 per 1000. The birth-rate in the Municipal Boroughs was 30·3, in the other Urban Districts 30·3, and in the Rural Districts 26·9. In the whole of England and Wales the birth-rate for 1894 was 29·6, the lowest birth-rate ever recorded, and 2 per 1000 below the mean-rate in the ten years 1884-93. The birth-rate in the 33 great towns in England and Wales (representing in the aggregate a population of 10,458,442) was 30·6

**Deaths.**—The number of deaths registered in the Administrative County in 1894 was 8763. The natural increase of population (excess of births over deaths) was therefore 7427, *i.e.*, 1759 in excess of the estimated increase for 1894. The death-rate for the County was 15·7. There is a considerable difference in the death-rates of different districts. They range from 23·5 in Tarporley to 8·8 in Bowdon and 7·2 in Yeadsley-cum-Whaley. In some sub-districts the death-rate is even lower, and in the Cheshire portion of Drayton there was no death. The death-rate in the Municipal Boroughs was 16·5, in the other Urban Districts 16·0, and in the Rural Districts 14·8. In the whole of England and Wales the death-rate for 1894 was 16·6, being not only the lowest death-rate ever recorded, but so much as 1·5 per 1000 under the lowest previous rate. The death-rate in the 33 great towns in England and Wales (representing in the aggregate a population of 10,458,442) was 18·0. The death-rate in Cheshire during 1894 was therefore 0·9 below the death-rate of the whole country. The Cheshire death-rate in 1893 was 0·4 and in 1892 was 0·5 below the death-rate of the whole country.

**Infant Mortality.**—A ready method of estimating the relative prevalence of infant mortality is by calculating the proportion of deaths under one year of age to each 1000 of registered births. Here again are great differences. The proportion was very high in Mottram (236 per 1000) and in some of the sub-districts in Stockport Rural District; while in Yeadsley-cum-Whaley the proportion was low (52 per 1000) and in Higher Bebington lower still (26 per 1000). The proportion in the Municipal Boroughs was 144, in the other Urban Districts 137, in the Rural Districts 113, and in the Administrative County 131. The proportion in the whole of England and Wales was 137 per 1000, and in the 33 large towns 152 per 1000. Thus, in 1894, the proportion of infants

who died in Cheshire was 6 per 1000 births less than in the whole country.

The assigned causes of death, in the case of infants, appear to be mainly :—

1. Premature birth, debility or marasmus.
2. Bronchitis or pneumonia.
3. Diarrhœa, gastro-enteritis, &c.
4. Tubercular diseases, and
5. Convulsions.

There is no doubt that most of this mortality is preventable, and that a considerable proportion is due to ignorance, carelessness or neglect. This ignorance, or whatever it may be, is referred to by several of the District Medical Officers of Health. It is manifested in various ways, the little ones are insufficiently clothed, improperly exposed, given indigestible food, fed from dirty feeding-bottles and lodged in insanitary homes. The employment of mothers in factories, shortly after confinement, is also mentioned as being more or less directly responsible for the high mortality among infants in some manufacturing districts. An interesting point is brought out in the report of the Medical Officer of Health for the Borough of Macclesfield. He shows that taking the last nine years there has been a large proportion of infant deaths in the town (the average yearly proportion being 161 per 1000 births) but that the Registration District of East Macclesfield (where the average yearly proportion of infant deaths is 198 per 1000 births) is mainly accountable for this. These figures, it is reasoned, show that the conditions in that part of the town are less favourable to infant life than in other parts, and while it is not easy to give the exact cause "no doubt it means that some parts of East Macclesfield need special sanitary attention," for instance the more frequent removal of refuse during spring and summer and increased inspection. This is a practical way of regarding infant mortality, and universally applicable. The same Medical Officer of Health refers to the "various remedies" that have been propounded for infant mortality in manufacturing towns.

They range chiefly under three heads :—

1. The prevention of the employment of mothers in factories just before confinement and for some months after.
2. The proper care of infants in the absence of their mothers, such as is afforded by *crèches* attached to factories, &c.
3. A more thorough investigation into the causes of death of infants.

There is much to be said in favour of remedies coming under the first head, for there is no doubt that the employment of married women in factories does exercise a baneful influence on the lives of their children. Under the 17th section of the Factory and Workshop Act, 1891, "an occupier of a factory or

workshop shall not knowingly allow a woman to be employed therein within four weeks after she has given birth to a child," but there seems to be no adequate means for insuring that this short absence from work is insisted on. It is not incumbent on anyone to inform the factory occupier and it is not to his interest to seek for information in the matter. Dr. George Reid, who is an authority on this subject, is of opinion that every woman employed at a factory should have a period of three months at home after her confinement, and that this should be enforced by law. Prohibiting a mother from working in a factory for three months after bearing a live child, is probably as far as the Legislature will go, and even this measure of reform will be difficult to obtain as it can hardly be expected to commend itself to employers, and is certain to be unpopular with factory women.

Remedies coming under the second head are, at least, more easily applied. It is not unusual for the owner of a factory to provide a library, a gymnasium, or a sick ward for his employés, or a school for their children; providing a *crèche* or day-nursery for his employés' infants would surely be quite as useful and beneficent. It would be better if the accommodation were not offered free. When infants are left all day with a neighbour some payment is ordinarily made, and if a similar payment were demanded it would assuredly be possible for a *crèche* at a large factory to be managed on commercial lines, without loss. Dr. George Reid's proposal is that provision should be made by the State for the proper care and feeding of the infant at the expiry of the suggested period of compulsory absence from work on the part of the mother. District Councils could make the proposed provision, provided a short Act were passed, enabling Local Authorities to establish *crèches* in districts where it is the common practice of mothers to work in factories.

Remedies under the first two heads are directed against mortality among the infants of factory women, the remedies under the third head are against infant mortality generally. Unmarried mothers, drunken mothers, &c., may grossly neglect their infants, and yet by taking them to the local dispensary once or twice before the end, obtain a certificate as to the cause of death and register the death without difficulty. This should not be possible. The fact should be recognized that it is not natural for an infant to die at a few months old. In any case where there is the least ground for suspecting neglect there should be a thorough investigation into the cause of death, prior to registering the death. Again, infant insurance by companies or firms is open to objection for many reasons. There seems no sufficient reason for allowing poor parents or guardians to insure a child under five years of age for £6. If this were forbidden, its place might be taken by a simple form of State insurance, such as empowering the Government to enter into an agreement to inter any child free of cost on those in charge

of it taking out a policy on its life, and paying a small monthly premium at the nearest post-office.

**Mortality among Old People**—The proportion of old people, among the deaths in 1894, is large, thus showing that a considerable percentage of the population attain to ripe age before death removes them. Out of the 8763 deaths registered in Cheshire in 1894, no less than 2164 were of persons 65 years old and upwards, that is over 24·5 per cent. In the Municipal Boroughs the proportion was 20·9 per cent., in the other Urban Districts it was 22·5 per cent., and in the Rural Districts it was 30·4 per cent.

It will be noticed that while the infant mortality is highest in the Municipal Boroughs and lowest in the Rural Districts, the mortality among old people is lowest in the Municipal Boroughs and highest in the Rural Districts.

**Zymotic Diseases.**—The seven principal zymotic diseases are small-pox, measles, scarlatina, diphtheria, whooping-cough, fever and diarrhœa, yet when the term "principal zymotics" is used it is not always understood in the same sense. Some Medical Officers of Health include under the heading "diphtheria," all deaths registered as croup; others deaths registered as diphtheria only. Again some Medical Officers of Health include under the heading "fever," typhus, typhoid, continued, relapsing and puerperal fevers; others include the first four only, omitting puerperal fever. Hitherto in the Reports on the Health of Cheshire only deaths registered as diphtheria have been reckoned as diphtheria, and all five fevers have been counted as "fever." This appeared to the County Medical Officer of Health the fairest way of enumerating the seven principal zymotics. However it seems to be more usual with Medical Officers of Health to reckon all fatal cases of croup as diphtheria, and not to include puerperal fever among the fevers, and as this is also the practice of the Registrar General, it may be well to adopt this course in future.

In 1894, the number of deaths from the under mentioned zymotic diseases was as follows: 6 small-pox, 141 measles, 98 scarlatina, 84 diphtheria, 58 croup, 217 whooping-cough, 79 typhoid fever, 2 continued fever, 44 puerperal fever, and 168 diarrhœa. Thus, not counting croup and counting puerperal fever, the number of principal zymotic diseases would be 839 (equal to a death-rate of 1·51); while counting croup and not counting puerperal fever, the number of principal zymotic diseases would be 853 (equal to a death-rate of 1·53). This is a decidedly low zymotic death-rate for Cheshire. Reckoned either of the two ways the zymotic death-rate in the Municipal Boroughs was 1·4, in the other Urban Districts 1·8, and in the Rural Districts 1·2.

The death-rate for each of the seven principal zymotic diseases has been calculated for the Administrative County,

for the whole of England and Wales, and for the 33 large towns in the Kingdom

The results are as follows :—

| 1894.                    | Death-rates per 1000 living. |                                     |  |
|--------------------------|------------------------------|-------------------------------------|--|
|                          | For Cheshire.                | For the whole of England and Wales. | For the 33 large Towns of the Kingdom. |
| Small-pox ... ..         | 0·01                         | 0·02                                | 0·04                                   |
| Measles ... ..           | 0·25                         | 0·38                                | 0·62                                   |
| Scarlatina ... ..        | 0·17                         | 0·16                                | 0·20                                   |
| Diphtheria and Croup ... | 0·25                         | 0·28                                | 0·38                                   |
| Whooping-cough ... ..    | 0·39                         | 0·39                                | 0·48                                   |
| Fever ... ..             | 0·14                         | 0·16                                | 0·19                                   |
| Diarrhœa ... ..          | 0·30                         | 0·34                                | 0·49                                   |
| 7 Zymotic Diseases ...   | 1·53                         | 1·75                                | 2·43                                   |

This shows that as regards all the diseases the mortality in Cheshire compares favourably with the mortality in the large towns, as of course it should do. The mortality in Cheshire from scarlatina is just higher than in the whole country. From whooping-cough the Cheshire mortality is the same as in the whole country. The Cheshire mortality as regards all the other diseases is lower than the mortality in the whole country. The mortality from the seven zymotic diseases, taken together, was quite exceptionally low in the whole country in 1894. Thus the death-rate, which was 1·75 in 1894, was 2·0 in 1891, 1·90 in 1892, and 2·47 in 1893. This death-rate in Cheshire was therefore 0·22 lower than the very low rate in the whole country.

The practice in respect of four of the zymotic diseases (small-pox, measles, scarlatina, and diphtheria), as expressly stated in many of the Reports, appears to be to obtain the isolation of patients as far as practicable, and the disinfection of infected rooms, clothing, bedding, &c., to prevent children belonging to infected houses from attending school, and, if possible, from playing with other children, to endeavour to discover the cause of the disease, to have the premises examined and defects remedied, and, in case of small-pox, to try and induce the inmates of infected houses to be vaccinated or re-vaccinated. In case of an outbreak of measles or scarlatina, it is not unusual to advise the closing of the local schools, and occasionally an outbreak of diphtheria is the occasion of this advice being given.

The Medical Officer for Health of Dukinfield suggests that notice of infectious disease having occurred in a house should be given to the librarian of the free library. Wherever free libraries have been established it would be well to do this, for there is no doubt infection may be carried by books.

The Medical Officer of Health for the Borough of Macclesfield, in a tabular statement, shows that the local death-rate from the seven zymotic diseases has steadily fallen during the last 21 years. In the five years, 1874-78, the mean yearly zymotic death-rate was 3.06; in the five years, 1879-83, it was 2.3; in the five years, 1884-88, it was 1.9; and in the six years, 1889-94, it was 1.7. This, he states, is no doubt one of the definite results of the administration of the Public Health Act.

The Medical Officer of Health for the Borough of Crewe extracts a most useful lesson from a review of many years' vital statistics. He finds that during the twenty years, 1874-93, the mean yearly death-rate was 4 per 1000 lower in Crewe than in the whole of England and Wales; but the mean yearly death-rate from the seven zymotic diseases was exactly the same in Crewe as in the whole of England and Wales. Comparing the mortality at Crewe with that of the whole country as regards small-pox, measles, scarlatina, and typhoid fever, he finds that the Crewe death-rate for small-pox was only one-eighth that of the country, the death-rate for measles was about the same, and for scarlatina and typhoid fever 50 per cent. higher. His explanation of this is, that the one disease (small-pox) the Crewe Authority have taken strong measures with is the only one in which the Crewe mortality compares favourably with the mortality in all England; the two diseases in which the Crewe mortality compares unfavourably with the mortality in all England are just those which are specially dealt with in many other towns by means of compulsory notification and hospital isolation, two measures which Crewe has not, up to the present, made use of. It is added that the measles death-rate for Crewe and all England being practically the same, is probably due to the fact that nowhere are any special precautions taken to prevent its spread.

**Small-pox.**—There were 38 cases of this disease notified in 1894, and 6 deaths. Of the whole number 32 (84 per cent.) were isolated in hospital. In 1893, there were 312 cases and 32 deaths. In 1892 there were 82 cases and 8 deaths. Thus the mortality in 1894 was nearly one in six cases; in 1892 and 1893 it was about one in ten cases. The disease appeared in 12 Urban Districts, viz. :—Hyde, Macclesfield, Stalybridge, Cheadle and Gatley, Dukinfield, Hollingworth, Hoole, West Kirby, Mottram, Northwich, Runcorn, and Wallasey; and in 3 Rural Districts, viz. :—Altrincham, Macclesfield, and Stockport. Of the fatal cases 2 belonged to Hyde, 1 to Stalybridge, and one to Cheadle and Gatley (these four died at the Hyde Hospital), one belonged to the town of Northwich and

was taken to the Workhouse, where death took place ; and one was a woman belonging to Hazel Grove, who died in the Stockport Borough Hospital. Of the 6 cases treated at home, 3 (all the cases in the Macclesfield Rural District) were not sent to hospital, because the Authority had provided no hospital ; 2 were well-to-do people, living in large houses where efficient isolation was practicable ; and one was a very mild case in respect of which there was some doubt as to its being small-pox. Details of the various outbreaks are given by the District Medical Officers of Health in their Reports. They appear to have acted with great promptness, and generally to have used all available means to prevent the spread of the malady.

Some particulars of the outbreak in the Macclesfield Rural District may be given as an instance of the grave risk incurred when no isolation accommodation is provided. On July 14th a young man, residing at Kerridge, is notified to be suffering from small-pox. How he caught the disease is soon explained. He had been visited, on June 23rd, by a friend from Newton Heath, who stayed several days, the two sleeping together. The visitor, in course of conversation, told the family that small-pox was very prevalent on both sides of the street where he lived, and that cases were being taken away daily to the Monsall Hospital. On July 17th a girl, aged 19 years, who had been living in the same house as the first patient and taken his visitor about in the neighbourhood, was attacked with small-pox at her aunt's house in Rainow, where she had gone on the 14th, when the first case was pronounced small-pox. She was at once taken back to her home in Kerridge, which was already infected by the first case, and the house at Rainow was disinfected. On August 3rd, the aunt was seized with small-pox, having been evidently infected by the second case, and sent to the house where the other two cases were being treated—her brother's. He, however, refused to receive her, so she had to be brought back to the house she had left, at Rainow. The infected dwellings and articles were disinfected, some of the clothing was burnt, and neighbours who would submit to the operation were vaccinated. It happened that all these three patients had the disease mildly and soon recovered, still the risk of the infection spreading must have been considerable, and should lead the District Council to provide the required hospital accommodation.

The curious circumstances attending the outbreak at Runcorn are also sufficiently remarkable to be worth citing. On July 9th a man obviously suffering from small-pox was found by some working men lying on a piece of land near the Top Locks. One of the Ship Canal Company's police was informed of the discovery and he communicated with the Medical Officer of Health, who at once had the man removed to the Isolation Hospital. The man gave his name, and said he had come from Manchester three days before, but when half way down had

been taken on board a canal boat and landed at Runcorn. He could not or would not give the name of the boat and all attempts to find it at first failed. The next case was that of a woman, notified on July 21st, who had been about the town drinking for three days before the eruption came out. She was taken to the Hospital, and on investigation it was ascertained that she had formed one the crew of the boat from which the first case was landed. As soon as the boat was identified further inquiries were made, and the story of the first patient was corroborated--the boat reached Runcorn on the evening of July 6th and returned on the 7th. It appeared, therefore, that the first patient had remained on the land where he was found in the open air, from the 7th to the 9th (Saturday to Monday). The third case was that of a man resident in the town, who was undoubtedly infected from the woman. He met her on licensed premises before she was taken to hospital, and on the 28th he, too, was taken there. The men made a good recovery. The woman (who belonged to the boat) had the disease more severely and died.

It is interesting to note from the Reports from other Districts the various way in which small-pox was introduced into the County. The first case at Hyde was a professional football player, who probably caught the disease while fulfilling an engagement away from home. In Macclesfield Borough two persons were infected at a common lodging-house probably from a tramp with mild small-pox passing through the town, and two months later a tramp with the disease was discovered in the casual ward. The Cheadle man, who died from small-pox, brought the disease from Stockport, where he worked. One of the Hollingworth cases had been working at Colne, Lancashire, and returned with the eruption fully developed, infecting also two relatives at Mottram, and three of the cases at Northwich were discovered in lodging-houses, having lately arrived from Salford. The West Kirby patient had just come over from Dublin, and the Wallasey patient was infected on board a Belfast steamer.

As to the time of the year when small-pox was most prevalent, upwards of three-fourths of the cases were notified in the six months from March to August.

In respect of vaccination there is very little information. However it is certain that three of the four cases which proved fatal at Hyde Hospital were unvaccinated, and the fourth had one vaccination cicatrix only. As for the fatal case from Stockport, no mark indicating vaccination could be found though carefully looked for. It is not known whether the fatal case at Northwich was vaccinated.

It is a great pity that particulars are not obtained as to the vaccination of every case of small-pox notified. The exact truth as to vaccination of all cases occurring in the County would in course of time be of great value, and would occasion District Medical Officers of Health very little trouble in collecting.



**Vaccination Returns**, as made by Vaccination Officers, are given by the Medical Officers of Health of two Urban Districts and one Rural District. In Dukinfield the return is not satisfactory—28·0 per cent. of those born are reported as successfully vaccinated, 14·3 per cent. as having died unvaccinated, and 1·0 per cent. as postponed by medical certificate. In Wallasey the return is very satisfactory—89·1 per cent. of those born are reported as successfully vaccinated, 8·3 per cent. as having died unvaccinated, and 1·1 per cent. as postponed by medical certificate. In Northwich Rural District the return is also very satisfactory—89·9 per cent. of those born are reported as successfully vaccinated, 8·2 per cent. as having died unvaccinated, and 1·3 as postponed by medical certificate. The Medical Officer of Health for the Borough of Crewe reports that only a very small number of those born there remain unvaccinated; and the Medical Officer of Health for the Borough of Macclesfield reports that less than 2 per cent. of the infants registered are unaccounted for.

**Measles.**—Cases of measles are not ordinarily reported to the Medical Officer of Health, and he seldom has any official intimation of the presence of the disease till it proves fatal. The number of deaths from measles in 1894 in the Municipal Boroughs was 29, in the other Urban Districts 79, and in the Rural Districts 33—in all 143 (in 1893 the number was 149). There were 25 deaths in Macclesfield Borough and 34 deaths in Nantwich Urban District. Thus about 42 per cent. of the deaths from measles were in two towns. In these two towns and in Altrincham the disease prevailed principally in the last quarter; in Lower Bebington and Marple the disease was prevalent from March to May. Schools were temporarily closed on account of the prevalence of measles at Macclesfield Borough, Lower Bebington, Bowdon, Marple, Nantwich, Disley and at Ellesmere Port in Wirral. The Medical Officer of Health for Macclesfield Borough remarks that “the importance of notification of measles has reference to closing of schools only. The fact that measles is dangerous to life during the first five years makes it important to postpone the attack as long as possible, and therefore closing of infant schools is advantageous in so far as it keeps the younger children from mixing with the infectious.” On the same subject the Medical Officer of Health for Marple remarks “it might be argued that closing the schools was a questionable advantage, as the children will still play together in the streets; but it must be remembered that playing in the open air is by no means the same as being shut up in rooms inhaling each other’s breath.” The Medical Officer of Health for Nantwich notes that the disease came to good and bad houses alike, and that the mortality was not connected with insanitary conditions. He refers also particularly to the well known fact that the mortality from measles is associated with cold, and to the consequent importance of keeping the body warm. In 25 out

of the 34 deaths referred to measles at Nantwich, bronchitis or pneumonia was added in the certificate as an accessory cause of death. Owing to the infectiousness of measles before the appearance of the eruption, and consequently before the malady is recognised, it is exceedingly difficult to deal with.

**Scarlatina**, sometimes called scarlet fever, is reported wherever notification of infectious disease is required; thus more is known of the incidence of scarlatina than of measles. In all 2179 cases were notified in the County in 1894, and out of these 338 (just over 15½ per cent.) were removed to hospital for isolation and treatment.

That is to say:—

In the Municipal Boroughs 265 cases were notified and 56 removed (equal to 21·1 per cent.)

In the other Urban Districts 1191 cases were notified and 258 removed (equal to 21·6 per cent.)

In the Rural Districts 723 cases were notified and 24 removed (equal to 3·3 per cent.)

The proportion of cases removed does not appear to depend so much on the need for removal as on the facilities afforded. In Altrincham, where there is a suitable hospital, 48 out of 51 scarlatina cases were removed—94 per cent. In Bromborough, when the Spital Hospital is available, 24 out of 30 scarlatina cases were removed—80 per cent. In Hyde, where there is a good hospital but much used by neighbouring Authorities, 51 out of 87 scarlatina cases were removed—58 per cent. In Dukinfield there were 68 cases, in Northwich Rural District 138 cases and in Runcorn Rural District 149 cases, not one of which was removed to hospital, there being no hospital provision in these Districts. The Medical Officer of Health for Dukinfield instances cases showing the need of hospital accommodation there; and the Medical Officer of Health for Runcorn Rural District points out that the spread of the disease would have been limited had there been a hospital in which early cases could have been isolated. The disease was prevalent to some extent all the year round.

The influence of schools in spreading scarlatina is noted by many Medical Officers of Health. Schools were closed on account of outbreaks of the disease at Bollington, Bredbury and Romiley, Bromborough, Buglawton, Neston and Parkgate, and also at Partington and Carrington (Altrincham R.D.), Shavington (Nantwich R.D.), Kingsley (Runcorn R.D.), Macefen (Whitchurch R.D.), and Burton (Wirral R.D.). At Buglawton infection was brought into the school by a child from Lancashire. At Bredbury many were infected through three convalescent patients being sent to school before peeling was completed. Complaint was made of this, but as the parents expressed regret, and made some explanations, proceedings against them were not taken.

The number of deaths from scarlatina in 1894 in the Municipal Boroughs was 12, in the other Urban Districts 58, and in the Rural Districts 28—in all 98. This is about 4·5 per cent. of the known cases of the disease. In 1893 the number of cases notified was 2950, the number of deaths was 142, and the number of cases removed to hospital was 310. The scarlatina record in 1894 compares most favourably with that in 1893. The number of cases is not quite three-fourths of the number notified in 1893, the proportion sent to the hospital is 15½ per cent. instead of 10½ per cent., and the mortality is not quite 4·5 per cent. of the known cases, instead of 4·8 per cent.

**Diphtheria and Croup** are diseases which appear to be notified very irregularly. During the year there were 370 cases of diphtheria reported and 84 deaths, while there were 66 cases of croup reported and 58 deaths. Twenty-two of the cases notified as diphtheria and 3 of those notified as croup were removed to hospital. In detail the record stands thus:—

| 1894.                     | Cases Notified. |       |       | Deaths.    |       |       |
|---------------------------|-----------------|-------|-------|------------|-------|-------|
|                           | Diphtheria      | Croup | Total | Diphtheria | Croup | Total |
| Municipal Boroughs...     | 53              | 19    | 72    | 14         | 15    | 29    |
| Other Urban Districts ... | 154             | 33    | 187   | 39         | 30    | 69    |
| Rural Districts           | 163             | 14    | 177   | 31         | 13    | 44    |
| Total .....               | 370             | 66    | 436   | 84         | 58    | 142   |

Thus, taking the two diseases together, in the Municipal Boroughs, 40·2 per cent. of the known cases died, in the other Urban Districts 36·9 per cent. of the known cases died, and in the Rural Districts 24·8 per cent. of the known cases died. The death-rate, per 1000 living, in the Municipal Boroughs was 0·20, in the other Urban Districts 0·31, and in the Rural Districts 0·23.

Cases of diphtheria or croup were reported at all the Municipal Boroughs and at all the other Urban Districts except Bollington, Bowdon, Buglawton, Neston and Parkgate, Sandbach, Tarporley, Wilmslow and Winsford, and in all the Rural Districts except Ashton, Drayton, Warrington and Wrexham.

Many of the cases of these diseases appeared to have been associated with the insanitary condition of the premises in which they occurred. On examining a house in Cheadle and Gatley where a fatal case of diphtheria occurred, the drainage was found to be defective and in close proximity to a well supplying the house. Four cases of diphtheria at Chorley were investigated, and believed to be caused by a contiguous cesspool. The only case of diphtheria at Hollingworth was on premises which

were damp and in a very insanitary condition. In Wallasey, where there were 4 fatal cases of diphtheria and 5 fatal cases of croup, all nine houses were found defective as to their sanitary arrangements. In Altrincham Rural District out of 40 cases of diphtheria and croup notified, 8 were found associated with insanitary conditions. From Macclesfield and Runcorn Rural Districts also cases occurred on premises where sanitary defects were discovered. However, something beyond merely insanitary conditions is doubtless needed to produce diphtheria. As the Medical Officer of Health for Macclesfield Borough states—“Diphtheria cannot arise *de novo*; it must be imported from some other man or animal, but if introduced into insanitary dwellings it tends to take a severe type, to crop up again from time to time, and when established in a locality (especially where the sewerage is defective) it is very difficult to eradicate it. It is extremely likely to spread from schools, especially if they be ill-ventilated and badly drained.”

As it is only by means of a bacteriological examination of the secretion of the throat that true diphtheria can be distinguished from membranous croup, and preventive measures should be taken at once, it is safe to deal with all cases as if they were dangerously infective, and isolate them with at least as much care as if they were severe cases of scarlatina.

The record for these diseases in 1894 compares very favourably with that in 1893, when there were 430 cases notified (395 diphtheria and 35 croup) and 165 deaths (116 diphtheria and 49 croup). Thus though the number of the two diseases was nearly the same in both years, the number of deaths in 1894 was less by 23.

**Whooping-cough** is not notified, and the extent of its prevalence has to be gauged by the death record. The number of deaths in 1894 in the Municipal Boroughs was 64, in the other Urban Districts 91, and in the Rural Districts 62—in all 217. The total number of deaths from this cause in 1893 was 120. Thus the death-rate, which was 0·39 in 1894, was only 0·21 in 1893. It was specially prevalent in Northwich Urban and Rural Districts, 50 deaths being registered in these two districts, and in Stalybridge, where there were 23 deaths registered. Whooping-cough is very difficult to deal with from a public health point of view. Its onset is insidious, and the catarrhal stage (during which the symptoms are not characteristic) commonly lasts nearly a week. As a matter of fact, little seems to be done throughout the County to check the spread of this disease. Still there is no doubt about the infectiousness of whooping-cough, or the need of keeping infected children from others and in particular from school. The mortality from whooping-cough would probably be much reduced if those in charge of children regarded the disease more seriously, and had the patients properly nursed and kept warm.

**Fevers.**—In the official form, furnished to Medical Officers of Health by the Local Government Board, and used for making mortality returns, "Fever" appears at the head of five columns, and the five sub-headings are "Typhus," "Enteric or Typhoid," "Continued," "Relapsing," and "Puerperal." Under typhus there was no case notified. Under relapsing fever there was one case notified at Stalybridge and no death. There were 402 cases of typhoid fever notified and 79 deaths. There were 47 cases of continued fever notified and 2 deaths. There were 54 cases of puerperal fever notified and 44 deaths.

**Typhoid and Continued Fever** may be considered together, as it seems probable that a large proportion of cases notified as continued fever are really typhoid. In all 449 cases were notified in the County in 1894, and out of these 64 (just over 14 $\frac{1}{4}$  per cent.) were removed to hospital. That is to say :—

In the Municipal Boroughs 75 cases were notified and 3 removed (equal to 4 per cent.)

In the other Urban Districts 260 cases were notified and 50 removed (equal to 19·2 per cent.)

In the Rural Districts 114 cases were notified and 11 removed (equal to 9·6 per cent.)

As in previous years a large number of cases (89) occurred at Wallasey, and a large number (67) in the town of Runcorn. It was observed at Wallasey that the sanitary defects discovered in connection with these cases were neither so frequent nor so grave as in former years, still the Medical Officer of Health believes that the state of the old sewers and drains is mainly responsible for the occurrence of the cases. The Medical Officer of Health for Runcorn reports that 4 of the cases were imported. The authorities are gradually adopting the water-carriage system, and it is hoped that as this increases in Runcorn typhoid fever will be less and less prevalent.

At Northwich Rural District there was a remarkable outbreak. All the 25 cases notified were connected with the mismanagement of the scavenging department. Two cases of typhoid fever were imported into Marston and from these the collected excreta became infected. In this way almost every person engaged in looking after the work became affected with the disease, which spread from one to another. And not only scavengers were attacked, for the master-scavenger was a milk seller, and some of those who took milk from his premises developed the disease. Everything was done that could be to limit the spread of the disease, and 6 cases were isolated in the little hospital which was built in 1893 for small-pox. Of the 28 cases 7 terminated fatally. As the Medical Officer of Health for Northwich remarks—"it seems an undesirable connection, the occupation of a public scavenger and that of milk farmer," yet it appears that in other places the two occupations are combined.

The Medical Officer of Health for the Macclesfield Rural District reports on an outbreak of typhoid fever at Kerridge and the adjoining township of Bollington. Two cases were notified on April 18th, one on the 20th, two on the 23rd, one on the 29th, one on May 16th, and one on June 13th. An investigation was made, and it was found that those affected had a common water-supply. This had become contaminated by flowing through a meadow, over which the contents of a very old privy had been spread. The case notified on April 20th terminated fatally. The supply was closed and another adopted.

The Medical Officer of Health for the Runcorn Rural District reports on 3 cases of typhoid fever at Great Budworth Heath, one of which was fatal. He has no doubt they were occasioned by drinking water from a pump-well, yet on analysis the water appeared to be good. At Halton, where two fatal cases occurred, the houses where the patients lived had no through ventilation, the roofs and rain spouts were defective, and the sewage from cow-sheds and piggeries oozed through the basement.

At Mottram the first patient suffering from typhoid fever was employed at Manchester, and came home with the disease. This patient died, and then there occurred another case two doors off. Two other cases were men who worked outside the district, and presumably contracted the disease there. As regards the remaining four cases, "there was nothing definite to account for the disease," writes the district Medical Officer of Health, "except the usually neglected condition of the closets and middens."

Much more to the same effect might be quoted, but these last words really furnish the key to the difficulty. What is it that causes outbreaks of typhoid fever so frequently? Without doubt it is *the usually neglected condition of the closets and middens*. This is the predisposing cause. As soon as the disease is imported, at the back of three-fourths of the dwelling houses is a hotbed ready, where the seeds of the disease are received, to grow and multiply. The same story is told in report after report with wearisome reiteration. What was to all intents and purposes the same event is recorded in respect of eight Urban Districts and six Rural Districts. Even in the districts where there was no typhoid fever in 1894, the immunity was probably not due to the absence of the predisposing cause, but the absence of the exciting cause—that is the disease not having been imported.

What is the remedy for this evil? The answer is simple enough. Wherever it is possible abolish the ubiquitous midden-privy, arrange for the provision of water-closets, and educate householders to burn their house-refuse on the kitchen fire.

The number of deaths from typhoid fever in 1894 in the Municipal Boroughs was 11, in the other Urban Districts 39 (including one registered as continued fever), and in the Rural

Districts 31 (including one registered as continued fever)—81 in all. Thus 18 per cent. of the known cases of the disease died. In 1893 the number of cases notified was 766, and the number of deaths was 118 (15·4 per cent. of the known cases).

**Puerperal Fever** caused 17 deaths in the Municipal Boroughs, 15 in the other Urban Districts, and 12 in the Rural Districts. Comparatively few cases are notified, and often the first intimation the Medical Officer of Health has of a case is after the death of a patient. The marked infectiousness of this disease has been often observed. In the Borough of Crewe, a second case having occurred in the same house within two months, special care was taken in disinfecting the house and outbuildings. In the same town, three cases having been attended by the same midwife, she was advised to discontinue her calling for a fortnight and given instructions as to personal disinfection. In the Borough of Macclesfield, where there were eight cases (7 being fatal) 3 occurred in the practice of one midwife, 2 in the practice of another, and 2 in the practice of a third. The Medical Officer of Health communicated with these women, with the result that one desisted from her employment for two months, another for one month, and the other for three weeks. It is most important that this disease should be notified early, or a midwife in busy practice may go from an infective case to several others before she is aware of any risk being run. The Medical Officer of Health proposes that all midwives should be compelled to register, and that before being given a diploma to practice they should be more stringently tested as to their ability to recognise the ordinary symptoms of fever. The Medical Officer of Health for the Borough of Hyde, where there were three fatal cases of puerperal fever in 1894, suggests that all midwives and nurses attending such cases, should in every instance undergo quarantine and have themselves and their clothes disinfected at the hospital before undertaking any further confinements.

**Diarrhœa.**—The last of the seven principal zymotic diseases is associated in the official form for mortality returns with dysentery, but the latter is so seldom the cause of death in this country that in ordinary years it may be disregarded. In 1894 there is one case noted as dysentery. Diarrhœa is not notified, and the extent of its prevalence, year by year, is measured by its death record. In the Municipal Boroughs there were 49 deaths ascribed to diarrhœa, in the other Urban Districts 77 deaths, and in the Rural Districts 42 deaths. Out of the 168 deaths 141 were of children under five years of age. The number of deaths from diarrhœa in 1893 was 652, nearly four times as many as in 1894. This disease prevails to some extent every autumn, and is associated with high temperature and putrefactive changes in food. The mortality therefrom being exceptionally low in 1894 is doubtless in part due to the

almost entire absence of high temperature in summer and autumn. As indicating the connection of this disease with the food of the patients, it has often been proved by statistics to be specially a disease of hand-fed infants. The Medical Officer of Health for Crewe writes that of all who died from diarrhoea (13) and tabes mesenterica (18) not one was brought up on the breast. He found also that the diarrhoea mortality in houses provided with water-closets was less than half that in houses with privies of some kind.

**Cholera.**—Among the notifications received in the Borough of Macclesfield was one of a supposed case of Asiatic cholera. Investigations were at once made by the Medical Officer of Health, and he came to the conclusion the case was simply one of choleraic diarrhoea. The notification, it may be mentioned, was not given by a medical practitioner.

**Erysipelas** is notified, but not as regularly as some infectious diseases. In the Municipal Boroughs there were 68 cases notified and 4 deaths, in the other Urban Districts there were 223 cases notified and 13 deaths, and in the Rural Districts there were 106 cases notified and 6 deaths. Of the 397 cases reported 7 were treated in hospital. In 1893 the number of cases notified was 538, and the number of deaths was 27. Erysipelas is certainly associated with insanitary conditions, and any premises on which it occurs should be most carefully inspected. At Bollington and Hollingworth, and in the Macclesfield Rural District, sanitary defects were discovered on premises where the disease occurred.

**Influenza.**—The official form on which the mortality returns from districts are made, does not provide for a separate return in the case of influenza, and the deaths therefrom are for the most part included in the figures which refer to "all other diseases." However in many Reports there are notes as to this disease. In the Borough of Congleton influenza was prevalent from November 1893 to February 1894, and 7 deaths were due to it in 1894. In the adjoining district of Buglawton the disease was epidemic in January and February, and cases occurred at intervals throughout the year. In the Borough of Crewe also the disease was prevalent at the end of 1893 and continued during the first two months of 1894. Six deaths were due to it in 1894. At Wallasey the disease was severe early in the year, and 6 deaths occurred from it—all in January. In Runcorn Rural District it was to some extent prevalent, and 6 deaths were ascribed to it. The disease was prevalent all the year at Marple, causing one death, and there were a few cases at Alsager. The malady was certainly not generally prevalent throughout the County, and in most of the districts where it did occur it was limited to the early part of the year.



**Rheumatic Fever** (sometimes called acute rheumatism) used to be classed with zymotic diseases, but is now generally regarded as a constitutional disease and classed with gout, cancer and the various forms of tuberculosis. There were 12 deaths ascribed to this cause in the Municipal Boroughs, 15 in the other Urban Districts, and 5 in the Rural Districts. The number of deaths from this cause in 1893 was 37. Sanitary Authorities cannot do much to reduce the mortality from this disease, except in so far as they can prevent the building of damp houses on damp sites.

**Phthisis.**—In the Municipal Borough phthisis was certified as the cause of death in 213 cases; in the other Urban Districts it was certified as causing 245 deaths, and in the Rural Districts as causing 168 deaths. In the Municipal Boroughs the death-rate was 1·50 in the other Urban Districts the death-rate was 1·11 and in the Rural Districts the death-rate was 0·87. The death-rate for the whole County, in 1894, was 1·12. The death-rate for the whole County in 1893 was 1·25. The phthisis death-rate for 1894 therefore compares favourably with that in 1893. However, very high death-rates are still returned from Altrincham (2·32 in 1894 and 1·80 in 1893), Macclesfield (1·97 in 1894 and 1·88 in 1893) and Stalybridge (1·77 in 1894 and 1·68 in 1893).

The Medical Officer of Health for Altrincham explains that patients are sent there from other districts at late stages of the disease, when recovery is quite hopeless. He personally knew of 4 such cases in 1894. The Medical Officer of Health for Bowdon (which adjoins Altrincham) remarks, with reference to two deaths from phthisis:—“These tuberculous cases are a new experience with us, and appear to have developed with the growth of the (Altrincham) Consumption Hospital in our midst. The authorities of that institution appear to have become aware that phthisis is an infectious disease capable of being spread in various ways, and they have, I learn, now restricted the patients from wandering around the township and sowing tubercle in every pathway.” A passage in the Report from Bowdon for 1893, ascribing an increase in the phthisis death-rate to the presence of the Consumption Hospital, drew forth a letter to the County Medical Officer of Health from Dr. Ransome, which is referred to fully in a note to the Report from Bowdon appended.

The Medical Officer of Health for the Borough of Macclesfield remarks that though the phthisis death-rate is high, yet it has been steadily decreasing during the last 20 years. In 1874-83 it was about 2·8, and in 1884-93 it was about 2·1. He thinks something may be done by disseminating information about the contagiousness of phthisis, and thus educating the patient and his friends to take the necessary precautions. The Medical Officer of Health for the Borough of Crewe is also in favour of

instilling into the minds of the people that consumption is infectious, and that measures should be taken to check its spread, at the same time insisting on the importance of healthy surroundings.

The Medical Officer of Health for Marple is afraid that the comparative immunity from this disease which the district has long enjoyed will not continue, as the medical profession are beginning to look upon Marple as a place very suitable for persons in the early stages of phthisis, and are recommending them to go there.

At Hyde, where there are about 50 deaths from phthisis annually, the Medical Officer of Health finds that the victims of the disease are often young married persons. It is to be desired that all with a tendency to this disease could be prevented from marrying. His experience is that parents encourage such invalids to marry, under the erroneous impression that better health will result.

With a view of assisting Local Authorities throughout the County to disseminate information as to phthisis and the precautions needed to prevent the spread of infection therefrom, the following Resolution was passed by the Public Health Committee on January 19th, and confirmed at a Meeting of the County Council on February 8th.

RESOLVED—"That the County Medical Officer of Health prepare a Memorandum on the subject of Phthisis, and that the Clerk forward 50 copies thereof to each of the Urban and Rural Authorities in the County with an intimation of the price at which additional copies can be supplied."

A memorandum was accordingly prepared as hereunder, and it is gratifying to report that it has been appreciated. In one District it was distributed to every house and in another it was reprinted in large type and posted, while many copies have been applied for and supplied to Medical Officers of Health in no way connected with the County.

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## MEMORANDUM

ON

PRECAUTIONS AGAINST THE INFECTION

OF

**PHTHISIS OR CONSUMPTION.**

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Phthisis or Consumption is undoubtedly an infectious disease, the source of infection being mainly the phlegm, coughed up from diseased lungs, containing certain minute organisms, termed bacilli, or their spores, capable of prolonged vitality in a dry state. Portions of this phlegm, when allowed to dry, are

carried about as fine dust, or on minute fragments of cotton fibre, &c., rendering the air infective, especially to those predisposed to the disease and to those suffering from it.

The phlegm of consumptive patients should be coughed (1) into a piece of rag or paper and at once burned in the fire, or (2) into a vessel of glass or glazed earthenware, containing a 15 per cent. solution of carbolic acid, or simply water. The contents of the vessel should be emptied twice a day into a drain leading to a sewer, and the vessel should then be cleansed with scalding water and re-charged. Spittoons placed on the floor are objectionable and should not be used.

No person, whether consumptive or not, should spit on the floor of a room, workshop, place of public meeting, or public conveyance. No person affected with a chronic cough, or suspected of having Consumption, should cough up into a pocket handkerchief.

The eating utensils of a consumptive person should be kept apart from other eating utensils, and washed separately in scalding water as soon as possible after use.

The clothing of a consumptive person should be washed separately. Soiled linen should be boiled. Bowel discharges from a consumptive person should be disinfected with a 15 per cent. solution of carbolic acid, and emptied at once into a drain leading to a sewer, the vessel being cleansed with scalding water.

A consumptive person should live in a well drained house, and sleep in a room affording plenty of air space and thoroughly ventilated. Direct draught should be avoided, but the chimney should never be blocked up. It is well that he should have the sleeping apartment to himself, but not necessary. No one should occupy the same bed with him. Before a consumptive person's room is swept, something should be used to lay the dust, and the sweepings should be burned. The room should be dusted with a damp duster. The furniture should be plain and easily kept clean. There should be no hangings, curtains, &c.

As soon as it is known that a member of a household has Consumption, the whole house should be thoroughly cleansed. The ceilings and walls should be brushed over with a mixture of chlorinated lime and water (one part of chlorinated lime to ten parts of water by weight) or a clear filtrate of the same. Woodwork and furniture should be washed with soap and hot water, containing not less than 2 per cent. of carbolic acid. The bedding, clothing, hangings, &c., should be thoroughly boiled in water, or disinfected in a suitable apparatus with superheated steam.

The room, or rooms, of a consumptive person should be thus cleansed and disinfected about once every two months. In the event of a death the rooms used by the deceased should be disinfected by being brushed all over with chlorinated lime and water (one to ten by weight) and kept closed for twelve

hours. To assist disinfection a lamp may be left burning in each room (the necessary precautions being taken against fire) and placed over the lamp an evaporating dish containing hydrochloric acid and water.

A consumptive mother should not suckle her infant. As cows are liable to Consumption, cow's milk should be thoroughly boiled before being used for food. As meat also may contain the bacilli, it should be well cooked.

Household pets susceptible of Consumption (as cats) when suffering from any chronic illness should be destroyed.

Exposure to cold, damp dwelling-houses, the occupation of cellars, over-crowding and industrial callings in which dust is respired, should be avoided. The marriage of consumptive patients is most undesirable.

Taking the precautions herein recommended would certainly limit the spread of Consumption considerably and reduce the fatality therefrom. The breath of a person suffering from Consumption is so little infective that the disease does not appear to be directly infectious from person to person, and in rooms kept thoroughly clean and well ventilated there is no risk of infection.

Consumption is a disease from which patients not rarely recover, and efficient disinfection of dwelling-houses and the destruction of the infective matter, will not only prevent the spread of the disease to others, but enormously increase the patient's chance of recovery.

FRANCIS VACHER,

*County Medical Officer of Health.*

*February 16th, 1894.*

**Bronchitis, Pneumonia, &c.**—The group of lung diseases which are more or less directly the result of catching cold (bronchitis, pneumonia and pleurisy) accounts for a very large number of deaths year by year. However the mortality under this heading was considerably less in 1894 than in 1893, and was then less than in 1892. In 1894, there were 492 deaths due to these causes in the Municipal Boroughs (equal to a death-rate of 3·47), in the other Urban Districts there were 593 deaths due to these causes (equal to a death-rate of 2·68) and in the Rural Districts there were 467 deaths due to these causes (equal to a death rate of 2·42). This shows, as the record of previous years has shown, that the mortality was relatively higher in the Municipal Boroughs than in the other towns, and relatively higher in the towns than in the Rural Districts. The death-rate for the whole County was 2·79.

The highest death-rates from these causes appear to have been in the towns of Stalybridge (4·56), Dukinfield (3·98), and Hyde (3·34).

**Heart Disease.**—In the Municipal Boroughs, 208 deaths (equal to a death-rate of 1·43) were due to this cause; and in

the other Urban Districts, 283 deaths (equal to a death-rate of 1·28). In the Rural Districts, 245 deaths (equal to a death-rate of 1·27) were due to this cause. The mortality under this heading was less in 1894 than in 1893, and was then less than in 1892.

**Deaths from Injuries.**—Under the heading “Injuries” are classed all diseases which are the direct result of physical or chemical forces—whether due to accident, negligence, manslaughter or suicide. In the Municipal Boroughs, 55 deaths (equal to a death-rate of 0·38) were due to injuries; in the other Urban Districts, 101 deaths (equal to a death-rate of 0·45) were due to injuries, and in the Rural Districts, 85 deaths (equal to a death-rate of 0·44) were due to injuries. These are not high death-rates. In the town of Runcorn, the number of deaths from injuries was 25, which is equal to the high death-rate of 1·31. Most of the deaths from injuries, were, of course, due to accident, but the proportion is not stated. Indeed, there is no way of ascertaining this, for even when inquests are held, such verdicts as “found dead,” “found drowned,” &c. are often given, and throw no light on the question—accident or otherwise?

**Intemperance**, though one of the terms used by the Registrar-General in classifying death causes, is not made use of in the forms supplied to Medical Officers of Health, so that any deaths certified as due to this are entered under the heading “all other diseases.” There is thus no reference to intemperance as a cause of death; however, it is referred to in a somewhat remarkable way. The Medical Officer of Health for the Mid Cheshire Combined Districts writes that he has been driven to the conclusion that sanitary evils the most shocking, like the most brutal crimes, “are the result *alone*” of intemperance, and that “so far as sanitary administration is concerned, this vice stands in the way as an insurmountable obstacle to improvements the most necessary and urgent.” He regards the present applicable remedies as too remote—what is wanted is a surer, swifter, and more direct method of dealing with the vice.

No doubt intemperance is accountable for misery and squalor enough, and for many insanitary habits among the people, but the statement, taken as a whole, is itself perhaps a little intemperate. However, intemperance is so largely concerned in causing disease and premature death that any reference to it in a Health Report can scarcely be out of place.

**Prevalence of Rabies.**—Outbreaks of this canine disease have occurred in various parts of the County since April, cases having been reported from Byley-cum-Yatehouse, Chcadle, Disley, Hattersley, Hollingworth, Hoylake and West Kirby, Hyde, Marple, Stapeley, Torkington and Woodley.

**Persons Bitten by Rabid Animals.**—Several isolated cases of rabies appeared in the Borough of Hyde during the autumn, and unfortunately in each case persons were bitten by the rabid animals before they could be secured. The victims were sent by the Corporation to Paris for treatment, under the direction of the Medical Officer of Health and the Matron of the Isolation Hospital. An account of the first of these expeditions is given by the Medical Officer of Health, and is printed in full as an appendix to the Report from Hyde. Other Medical Officers of Health who may be called upon to conduct a party of patients to Paris under similar circumstances will be glad of the information contained in this account, and, indeed, it can scarcely fail to interest all who will take the trouble to read it.

**The Infectious Disease (Notification) Act, 1889**—This Act came into force in London as soon as it became law. As regards the rest of the country it is an "adoptive" Act, by vote of the Local Authorities, after public notice has been given. The obligation to notify each case of infectious disease rests on the householder and medical practitioner in attendance. Generally only the practitioner notifies, but the householder being also responsible prevents him from evading notification by not calling in a doctor. The infectious diseases to which the Act applies are small-pox, cholera, diphtheria, membranous croup, erysipelas, the disease known as scarlatina or scarlet fever, and the fevers known by any of the following names: typhus, typhoid, enteric, relapsing, continued, or puerperal. Also the Local Authority may, by resolution, order any other infectious disease, either temporarily or permanently, to be added to this list; but such order has no validity until approved by the Local Government Board.

At the close of the year 1893, all but 6 of the Local Authorities in the County had adopted this Act. None adopted it in 1894, but in January, 1895, the Marple District Council adopted the Act. Thus there remain but 5 Districts in which the provisions of the Act are not in force, viz. :—

Congleton Municipal Borough.

Crewe Municipal Borough.

Sandbach Urban District.

Yeardsley-cum-Whaley Urban District.

Nantwich Rural District.

The Medical Officers of Health who advise the Authorities in these districts appear to be favourable to the adoption of the Act, or at least to notification. At Congleton the Medical Officer of Health has on three or four occasions urged his Authority to adopt the Act, but it has been decided not to do so by a large majority. At Crewe the Medical Officer of Health receives reports of many cases of infectious disease through the Relieving Officer and School Attendance Officer, still he recommends the adoption of the Act. The Medical Officer of

Health for Yeardsley-cum-Whaley has remarked, in many Reports, on the Act not being adopted. The Medical Officer of Health for Sandbach and Nantwich explains that there are details of the Act which render it unacceptable, but that he does not question the usefulness of notification.

At Buglawton it would seem that neither medical practitioners nor householders fully appreciate their obligations under this Act. It has been in force two years, but only about three notifications have been made, and none of these reached the Medical Officer of Health earlier than a week after the case had in some other way come to his notice.

At Wallasey a father was summoned by the Local Authority for failing to notify a case of scarlatina, his son having been discovered in the public street during the period of desquamation. Ignorance of the requirements of the Act and of the infectious nature of the disease were pleaded, but the defendant was fined five shillings.

In the Report from the Congleton Rural District, it is stated that the adoption of the Act obliged the Medical Officer of Health and the Inspector to alter their mode of procedure. Systematic inspection and investigating cases notified are duties which interfere with one another. Under the direction of the Authority short handbills of instructions, general and special, have been published, with a view of saving the time of the Inspector.

In the Report from the Macclesfield Rural District, it appears that as a result of investigating 88 cases of disease notified, 42 of the premises on which they occurred were found to have sanitary defects, the remedying of which was taken in hand.

During the autumn, one of the Authorities temporarily added diarrhoea to the list of diseases to be notified.

One Medical Officer of Health acknowledges the courtesy of practitioners in answering many questions (relative to cases notified) which are not required to be answered by the Act.

#### **Notification of Sickness by Friendly Societies.—**

The Medical Officer of Health for Crewe has long felt that sufficient use was not made of the returns of sickness received every week by the Friendly Societies. Accordingly in the early part of the year he discussed the matter with the Mayor, who kindly convened a meeting of the Secretaries of Friendly Societies in the town, and invited them to send to the Medical Officer of Health weekly the names and addresses of those placed on the sick list, specifying the illness in each case. The Secretaries unanimously resolved to recommend the Societies they represented to send in lists as suggested, and, with one exception, the Societies agreed to do so. Since the end of April these sick returns have been received, week by week, and the information they contain has been found most useful. The task

of posting up the cases under their respective street headings in a "ledger" kept for the purpose rarely occupies more than an hour a week. This system of notification draws attention to insanitary conditions which require rectifying, and will furnish the material for a register of the house history of the town. In his next Report the Medical Officer of Health hopes to present some statistics. As among the Friendly Societies there are many where the members are drawn exclusively from one trade, the statistics, as they accumulate, may be expected to give reliable information as to the sick-rates in special industries.

**Isolation Hospitals.**—The hospital accommodation in the Administrative County for the isolation and treatment of infectious disease is as follows:—

Altrincham Urban District—Lloyd's Fever Hospital.

Altrincham Rural District—A marquee.

Congleton Municipal Borough—Four cottages set apart for small-pox cases.

Congleton Rural District and Sandbach Urban District—Hospital at Arclid.

Crewe Municipal Borough—A farm house set apart for small-pox cases.

Hyde Municipal Borough—Hyde Hospital.

Macclesfield Municipal Borough—A small "Ducker" hospital.

Northwich Urban District—A marquee and an old building.

Northwich Rural District—A small hospital close to the town of Northwich.

Runcorn Urban District—Runcorn Hospital.

Runcorn Rural District—A temporary hospital at Moore, lent by the Manchester Ship Canal Company.

Wallasey Urban District—Mill Lane Hospital.

Winsford Urban District—A very small hospital.

Wirral Rural District and Higher Bebington, Lower Bebington, Bromborough, Neston and Parkgate, Hoylake and West Kirby Urban Districts, forming Wirral Joint Hospital District—Greasby Hospital and Spital Hospital.

In all 106 beds are provided in permanent hospitals and 128 beds in temporary erections, making together a provision of 234 beds.

The other Isolation Hospitals in the Administrative County, which do not belong to District Councils Urban or Rural, are the Liverpool Port Hospital, the Bromboro'-pool Works Hospital, the Macclesfield Guardians' Hospital, and the two Isolation Hospitals provided at the County Asylums at Upton and Parkside. The Port Hospital is for cholera cases occurring on ship-board. The Bromboro'-pool Hospital belongs to Price's Patent Candle Company and is solely for the use of employes at the Works. The Macclesfield Guardians Hospital



is for cases of infectious disease arising in the Workhouse, and the Asylums' Hospitals are, of course, exclusively for cases occurring among the inmates of the Asylums. Thus not one of these hospitals is generally available.

The small portion of the Wrexham Rural District in Cheshire has the right to use the Wrexham Joint Hospital, and the Fever Hospital in connection with the Chester Infirmary is used by the Hoole Urban District and the Chester and Tarvin Rural Districts. Stockport Borough Hospital, which like the Chester Infirmary is outside the Administrative County, is used to some extent by neighbouring districts. Monsall Hospital, near Manchester, appears to be used to a very slight extent (or can be used) by Wilmslow Urban District and Bucklow Rural District. Warrington Hospital, not very long since could, by agreement, be used by two Districts contiguous, but the agreements have been terminated.

How singularly inadequate the hospital provision made is to meet the requirements of an area with a population of upwards of 555,000 must be obvious. And the provision is even more inadequate than it looks on paper, so that not infrequently infectious cases have to be treated in Workhouses, and many who cannot be properly housed and isolated at home are not removed and remain as possible sources of infection to members of their families and neighbours. Adopting the Infectious Disease (Notification) Act is doubtless a wise course; but if, when a case of dangerous infectious disease is notified—it may be the initial case in an epidemic—there is no means of isolating the patient, the Local Authority have not done all that was practicable for preventing the spread of infectious disease. Of the 3555 cases of infectious disease notified, in 1894, only 466 (13·1 per cent.) were isolated in hospital.

In many of the Reports are references to hospital requirements, and statements as to what has been done or is under consideration. The Medical Officer of Health for Congleton Borough and for Buglawton is of opinion that proper hospital accommodation is needed, and approves of combining with neighbouring townships to provide it. The Crewe Corporation have purchased a suitable site, containing about five acres, at £150 an acre, and advertised for competitive plans for the erection of a hospital for 30 patients. The Hyde Hospital admitted, during 1894, 60 patients from the Borough and 52 from other districts. A laundry is needed for this hospital. At Macclesfield Borough, where there is only one small temporary building, two scarlatina patients had to be discharged prematurely owing to an outbreak of small-pox. The structure is reported to be rapidly deteriorating. The Medical Officer of Health for Bollington notes that a hospital is required, and suggests that Kerridge and Bollington should jointly provide one. Cheadle and Gatley Urban District has an arrangement with Hyde Hospital to

receive small-pox cases as far as possible, but needs accommodation for other cases. The Medical Officer for Health has no doubt this will receive the attention of the District Council. Dukinfield has made an arrangement for small-pox cases to the extent of having the right to use two beds at Hyde Hospital. Accommodation to the extent of 18 beds should be provided for other diseases, and it would be more economical to join with Stalybridge and Ashton Rural District in making provision. The Medical Officer of Health for Lymm writes that difficulties must be overcome—the district is bound to have some provision. From Marple the report is that the negotiations with adjoining Authorities have fallen through, and the question of hospital provision appears as far off settlement as ever. From Middlewich comes a similar report—that past efforts to form a combined scheme have been without success. The Medical Officer of Health for Nantwich greatly regrets there is no hospital—endeavours to effect a combination of the Urban and Rural Authorities for the purpose of securing a hospital for small-pox cases “have not yet been crowned with complete success,” but, at any rate, a suitable site has been decided on. The Medical Officer of Health for Northwich is not sure that the accommodation in the Urban District would be considered generally satisfactory, but it has provided for cases of small-pox up to now. The Rural District hospital was designed for small-pox, but was used in 1894 for typhoid fever. As regards Congleton Rural District, the same Medical Officer of Health reports—“We have now got a capital hospital for the isolation of cases of small-pox, as they may be brought from time to time into our well vaccinated and protected community. I believe this provision to be a necessary evil.” The very small hospital at Winsford is spoken of as no doubt “a benefit to the town.” In the Altrincham (now Bucklow) Rural District, “very little progress has been made towards the establishment of an Isolation Hospital for cases of small-pox.” At Sale the Authority have always seen their need of a hospital and “now see a chance of supplying” it. At Wilmslow, also, where there is no hospital, “the best way to remedy this defect is being discussed.” At Tarporley there is still no hospital, though some years ago there was an attempt to combine with other districts and make provision. At Yeardsley-cum-Whaley the Authority is urged “to make some arrangement with the adjoining Authorities.” In Runcorn Rural District there is nothing but the old building lent by the Manchester Ship Canal Company, and that is reserved for small-pox cases only. The provision of a new hospital is still under discussion. In the adjoining Rural District of Warrington, the need of a hospital is pointed out, but efforts to find a house or site have been unsuccessful.

From Wallasey the report is more satisfactory. A new pavilion providing 12 additional beds was opened in September, and the hospital was more largely used than in any previous

year. The hospitals of the Wirral Joint Hospital Board also did excellent service during 1894. In one of the contributory districts (Lower Bebington), 70 per cent of the scarlatina cases and 66 per cent. of the typhoid fever cases were removed, and in some other districts removal has proved very successful in checking the spread of disease. These hospitals were so much used in 1894, that towards the close of the year it was decided to erect an additional pavilion providing 12 beds, and this was furnished and opened in January, 1895.

**The Isolation Hospitals Act, 1893.**—This Act, which was passed on December 21st, gives most important powers to County Councils, and will enable them to take an active part in obtaining the provision of efficient hospitals for isolating and treating cases of infectious disease. The Public Health Act, 1875, gave powers to Local Authorities, separately and jointly, to provide hospitals for infectious cases; but as many Authorities neglected to use the powers conferred or used them inadequately, and there was no ready way of moving these Authorities to make sufficient hospital provision, it seemed that further legislation was needed, and this is supplied by the Isolation Hospitals Act. The Clerk of the County Council, in January, 1894, issued a summary of the principal provisions of the Act—the Council will, therefore, be generally familiar with these. Without going into particulars it may be well here to call attention to the contents of Sections 2, 3, 4, 5 and 6 of the Act. Section 2 refers to limits. The Act does not extend to Scotland or Ireland or London, or to any County Borough or except with consent to any Borough, only in case of a Borough of under 10,000 population the Local Government Board may direct that the Act shall apply. Section 3 empowers the Council of every County to provide, or cause to be provided, hospitals for the reception of infectious cases, on application being made to them and proof adduced as mentioned in the Act, to the effect that necessity for such hospitals exists. Section 4 states that the application may be made by one or more Local Authorities as defined by the Act, or by not less than 25 ratepayers in any contributory place. Section 5 directs that the application must be made by petition, and must state the district for which the hospital is required and the reasons for its establishment. The County Council are to consider the petition, and if satisfied that a *prima facie* case is made out, cause an inquiry to be made as to the necessity for the establishment of a hospital. By Section 6 a County Council may direct their Medical Officer of Health to make an inquiry as to the necessity of an Isolation Hospital being established for the use of any particular district, and if he reports that such a hospital ought to be established, the Council may take the same proceedings for its establishment as if a petition had been presented by a Local Authority.

At the meeting of the Public Health Committee in January, 1894, it was resolved that the consideration of the Isolation Hospitals Act be postponed until it could be ascertained to what extent the Local Government Bill, then before Parliament, would if passed into law interfere with the existing areas of the Sanitary Authorities of the County.

The following Resolutions were passed by the Public Health Committee on October 19th and confirmed at a meeting of the County Council on November 8th.

**RESOLVED**—"That the further consideration of the Isolation Hospitals Act, 1893, be postponed until after the establishment of the new Urban and Rural District Councils, and that in the meantime a letter be written to each Urban and Rural Sanitary Authority in the County stating that in the opinion of the Council no delay should take place in putting the Act into operation, and asking them to consider the question and to be prepared to consult with the Council early in 1895, as to the Hospitals which it is necessary to erect."

**RESOLVED**—"That the County Medical Officer of Health be instructed to report to this Committee as to the existing Isolation Hospitals in the Administrative County and what further provision should, in his opinion, be made for establishing additional Isolation Hospitals."

The replies of the Urban and Rural Authorities to the letters addressed to them in accordance with the first of these Resolutions had not all been received by the end of the year; and the Report of the County Medical Officer of Health on Isolation Hospitals was not presented to the Public Health Committee till January 25th, 1895.

#### **The Infectious Disease (Prevention) Act, 1890.—**

This Act, except as regards London, where it has been in force since December, 1890, only comes into force after being formally adopted by the Local Authority. It gives increased control over the milk supply and increased powers of disinfection. It forbids the throwing of infectious rubbish into ashpits, &c. It forbids the retaining of an infectious human body longer than 48 hours, elsewhere than in a public mortuary or a room not used as a living, sleeping or work-room; and the removal of the body of any person dying of infectious disease in hospital, except for being buried forthwith. It empowers a justice to order an infectious patient in a Hospital for Infectious Diseases to be detained therein until free from infection, if it can be shown that he is without proper means of isolation and lodging elsewhere. It requires the Authority to provide free temporary shelter with the necessary attendance to the members of any families who have been compelled to leave their houses to enable them to be disinfected by the Authority.

It was stated that this Act had been adopted in the last Annual Reports for the Borough of Crewe and the Chester Rural District. There is no reference to its being in force in any other District in the County.

**The Public Health Acts Amendment Act, 1890.**—This Act is also an “adoptive” one, but it does not apply to London. It gives power to regulate public sanitary conveniences, such conveniences used in common by occupants of two or more houses, or provided for factories or workshops. It empowers the Urban Authorities to make bye-laws for keeping W.C.’s supplied with sufficient flushing water, as to structure of floors, hearths and staircases, and the height of dwelling-rooms, as to paving yards and open spaces about houses, and as to providing new houses with secondary means of access for removal of refuse, &c., as to times for removal through the streets of offensive matter, and as to vessels and carts employed being properly constructed and covered. It forbids rooms over privies, middens or ashpits being used as living or sleeping rooms; and the erection of new buildings on foul sites. It permits all articles of unsound food, even those already sold, to be seized and condemned, or condemned before seizure. Finally under this Act the occupier of a registered slaughter-house convicted of having sold or had for sale unsound meat, may have his license revoked.

During 1893 this Act was adopted by the Runcorn Rural Authority, so far as it relates to Rural Districts. It was adopted by the Chester Rural Authority towards the end of 1892. It has also been adopted in the Borough of Crewe, and appears to be in force in the Northwich Urban District.

**The Private Street Works Act, 1892.**—This Act is also an “adoptive” one. It may be adopted in any Urban Sanitary District in England, and the Local Government Board may extend the Act to any Rural Sanitary District or part thereof. When the Act is adopted any street or part of a street not sewered, levelled, paved, metalled, flagged, channelled, made good and lighted to the satisfaction of the Authority, may be sewered, levelled, paved, metalled, flagged, channelled, made good or provided with the proper means for lighting by the Authority, the expenses incurred in executing such private street works being apportioned on the premises fronting, adjoining, or abutting on such street or part of street, the sums apportioned being recoverable summarily or by action, or in the same manner as private improvement expenses are recoverable under the Public Health Act, 1875. Also the Authority may, if they think fit, contribute the whole or a portion of the expenses of any private street works, when all or many of the private street works mentioned have been executed in a street or part of a street, the Authority may by notice fixed on such street &c., declare the whole of such street or part of street

to be a highway repairable by the inhabitants at large. And if any street is now or shall hereafter be sewered, levelled &c., to the satisfaction of the Authority, then, on the application in writing of the greater part in value of the owners of the houses and land in such street, the Authority shall, within three months, by notice put up in such street, declare the same to be a highway repairable by the inhabitants at large.

The Northwich Urban Authority have adopted this Act. Nothing is stated as to its being adopted by any other Authority in the County.

**Disinfection by Steam.**—An efficient apparatus for disinfecting by steam the clothing, bedding &c., of infectious patients is a necessary part of the equipment of a Sanitary Authority. Yet a large majority of the Authorities in the County have taken no steps to provide any apparatus for this purpose. At both Hyde and Wallasey there is an excellent apparatus placed conveniently near the Isolation Hospital. During 1892 the Runcorn Rural Authority obtained a steam disinfector, which was found of much use during the prevalence of small-pox in 1892-93. It is erected on land contiguous to the temporary hospital for small-pox. However, during the whole of 1894, when there were many outbreaks of scarlatina, the apparatus was apparently locked up, owing to “the absence of any arrangements, sanctioned by the Authority to utilize their steam disinfector.” This according to their Medical Officer of Health, “led to the continued infective power of clothing, bedding &c., being established, long after the patients had fully recovered.” Elsewhere in the Report from Runcorn Rural District, “numerous outbreaks” are referred to as “simply survivals of an undisinfected past.”

Efficient apparatus (Washington Lyon's) was provided for two towns in 1894. At Altrincham Urban District the new disinfector has replaced a somewhat old and haphazard appliance in use hitherto. It is erected in a suitable building in rear of the Fever Hospital. At Crewe Borough, the new disinfector stands on land adjoining the sewage pumping station, whence steam is obtained. The cost at Crewe was £198 for the apparatus and £98 for other expenses, including building.

The Medical Officers of Health for Dukinfield, Sale, Marple and Bollington note the need of apparatus for efficient disinfection in their several districts.

The bedding and clothing should be fetched and delivered by the Authority's officers, in light covered vans provided for the purpose. One van should always be used for collecting, the other for delivering, and to avoid all possible risk of the one being mistaken for the other it is convenient to have the collecting van painted red and the delivering van painted green.

**Systematic Inspection.**—Probably it is the Inspector's first duty to give prompt attention to nuisances complained of

by tenants or others, or discovered on infected premises. Scarcely of secondary importance, however, is the duty of systematic house-to-house inspection of the district, so that the sanitary condition and surroundings of every house may be known, a record kept, and defects remedied. This duty is not neglected, indeed many Medical Officers of Health in their Reports recognise its necessity, still it does not appear to be carried out as thoroughly as it should be. Doubtless, house-to-house inspection is made "when time permits," but if in any district it only occasionally happens that time permits, the reasonable conclusion is that an additional Inspector is required. By systematic inspection many grave defects are brought to light and remedied that would never be complained of.

**Abatement of Nuisances.**—The word "nuisance," as defined by the Public Health Act, 1875, includes so many things and conditions, that it may be said almost every form of pollution of air, ground or water constitutes a nuisance. Some of these are made the subject of complaint to the Medical Officer of Health or Inspector, some they discover for themselves. In either case each nuisance is entered and an attempt made to obtain its abatement. The nuisances are due to various causes, among others: insufficient drains and sewers, defective drains and sewers, obstructed drains and sewers, ditches carrying sewage, defective traps, waste pipes untrapped or badly arranged, waste pipes directly connected, broken water fittings, no supply or an insufficient supply, soil pipes unventilated or ill-ventilated, rain pipes directly connected, defective rain conductors or roofs, damp walls, dead rats and mice under floors, offensive accumulations of refuse, defective ashpits, privies or W.C.'s, yards lodging foul water, offensive ponds, dirty or over-crowded houses, animals or birds so kept as to be a nuisance, and excessive smoke from chimneys. Nuisances thus caused are abated without formal notice, or on formal notice, or after proceedings. The practice in different Districts varies greatly. In some the abatement of a large number of nuisances entered on the books is effected without formal notice, in others a formal notice is served in nearly every case. Further proceedings are rarely found necessary in any of the Districts. In Macclesfield Borough, Altrincham, Lower Bebington, Wallasey, Nantwich Rural District and Runcorn Rural District proceedings were instituted against persons for failing to comply with the terms of notices served on them requiring the abatement of nuisances, or for transmitting or exposing infected persons or things. In all ten prosecutions, under the Public Health Act, 1875, are reported in the whole County.

The work of obtaining the abatement of nuisances certainly seems to have full attention from Medical Officers of Health, while it very properly occupies a large share of the time of Sanitary Inspectors. As regards 19 Districts, Reports are

submitted by the Inspectors giving particulars of the nature of the nuisances dealt with, and occasional notes of difficulties or failure. These Reports are all interesting. If they were drawn up on a uniform plan, and a Report were sent in by every Inspector in the County, the information supplied would be most useful.

Perhaps the most noteworthy nuisance during the year was from the deposit of very offensive-smelling mud dredged from the Manchester Ship Canal. This stuff was deposited at Partington, and it is stated that three cases of typhoid fever were distinctly traced to it. The Company did much to abate the nuisance by the free use of lime and other disinfectants, but the District Medical Officer of Health naturally asks—Why should not the dredgings be taken out to sea?

In the same Rural District as Partington are two other rather exceptional nuisances—two extensive undrained areas known as Hale Moss and Knutsford Moss—which the District Council is urged to deal with.

**Examining Houses on Request.**—It may be remembered that in November, 1893, public notice was given in the Borough of Crewe that anyone might have his house examined as to its sanitary condition, free of charge, on making application to the Sanitary Department. The object was principally to enable new-comers to the town to ascertain the condition of any house they might contemplate occupying. It is, perhaps, remarkable that so few took advantage of this good offer. In 1894 the number of houses thus examined was less than a score.

**The Rateable Value of Houses.**—In the Crewe Report is a note of the value of houses on the rate-book. It shows that, in 1894, 78 per cent. of the houses in the Borough were rated under £10 per annum, and 94 per cent. under £20 per annum. If similar information were furnished by other districts it might throw some light on the incidence of disease and mortality, and aid in the solution of some health problems.

**Ashpits, Middens, &c.**—The storing of refuse in receptacles in close proximity to inhabited houses is an insanitary practice. The system adopted in some towns, where each house is provided with a dust-box or pail, to be emptied by dustmen early every morning, is a great improvement on the ashpit system. When, however, privies and ashpits are combined, and every kind of domestic refuse is deposited in the one receptacle, its proximity to a dwelling-house is even more objectionable. Yet these “compound middens” (they go by various names) are very common throughout the County, and in Rural Districts and some Urban Districts represent the sanitary conveniences ordinarily provided. The problem that Local Authorities and their responsible advisers have to solve is how to improve the



compound middens and reduce to a minimum the nuisance therefrom. There is little doubt the water-carriage system is the most satisfactory, where practicable, and consequently the best way of altering the compound midden is to convert it into a W.C. and small dry ashpit. Many such conversions were effected in 1894, in Runcorn Urban District alone there were 140. In localities where the W.C. is not practicable, the old pit should be filled up to the ground level, the bottom being paved and the walls cemented over inside. The work of emptying will be made easier, and it will be more likely to be done regularly and systematically, if moveable receptacles are provided. Modifying the compound middens in various ways is continually in progress as part of the work of nuisance abatement. In requiring a change the great point is to be sure that the change specified is the best under the circumstances, and this is far from easy.

With all that has been done there remain a large number of ill-constructed ashpits and middens, and not a few leaky cesspools, which need the prompt attention of Local Authorities.

**Refuse Removal.**—Quite as important as the proper construction of ashpits, &c., is the systematic removal of their contents. In rural places what is in the midden and cesspool is commonly disposed of on a garden or field belonging to the house, or awaits the convenience of a neighbouring farmer, who removes the stuff at his own cost or even pays a trifle for it. In Townships where W.C.'s are in general use, the ashpit refuse is practically valueless, so that its removal has to be paid for and often land has to be found on which to tip it. Certainly it is one of the duties of the Local Authority to arrange for this work being regularly done and at short intervals. In this County the Local Authorities which have undertaken the work have commonly contracted for its being done under the supervision of the Sanitary Inspectors. The work is probably better carried out when done by the Authority's men, with the Authority's appliances, without the intervention of a contractor. Of course where pail-closets are provided there is more than usual need for regular and frequent emptying, and the pails should be cleansed and charged with a disinfectant as they appear to be at Nantwich.

Cesspools should obviously be emptied at night and if practicable pails also. As to frequency, all Medical Officers of Health are agreed that the emptying should be done at short intervals, but as a fact the pits are not ordinarily emptied till they are full or nearly full. This is all that "well attended to" or "fairly well attended to" commonly means. The Medical Officer of Health of the Chester Rural District advises that the emptying should be done weekly or fortnightly, but it is very difficult to insure this being done. Pails should certainly be emptied at least once a week, but as regards middens a monthly

emptying will satisfy most Authorities. The Medical Officer of Wallasey, where arrangements were made for emptying every six weeks, reports that the collection of night-soil and refuse has not been satisfactory in spite of the precautions taken, and the appointment of an Inspector whose sole duty it was to supervise it. Some courts and back passages in this district are so foul with deposits of offensive matter that they are described as having "the appearance of elongated ashpits." The cleaning of these is left to the householders and of course not done. It is proposed now that the town scavengers should do it. Whether the rule be to empty the ashpit or midden once a fortnight or once in six weeks, it should of course be emptied at any time on complaint that it is full.

As regards the cost of this work, though the total sum paid is given by many Medical Officers of Health, it is difficult to compare the outlay in one district with the outlay in another, without full particulars of the work done and the way it is done. In one district (Sandbach) £116 was received for the saleable portion of the stuff collected—but this must be an unusual experience anywhere. At Crewe, where there are receptacles of all kinds, the cost of emptying was 16·3 pence per head in 1893. In 1894, the cost was reduced to 14·6 pence per head, and yet the work was more satisfactorily done. Even the higher rate is not too much, provided the work be well done. At Crewe the carts for carrying the dry ashes as well as the night-soil carts are covered. The comfort of the night-men is also considered, and they are provided with hot coffee when at work.

Another duty of the Authority, in reference to refuse-removal, is to arrange tips in suitable situations, sufficiently remote from inhabited houses, and that tipping on land to be used for building purposes be strictly prohibited. It seems that at Northwich Rural District, tipping places for what is taken from midden-privies are not easily found, and there have been frequent complaints of the malodorous stuff being placed too near houses and roads. In Chester Rural District also nuisances have been often caused by persons removing privy-refuse who have no convenience for using it.

#### **The use of Pails containing Acidulated Peat.—**

Considerable attention was attracted by a brief reference in the Annual Report for 1893, to the plan being tried in the Borough of Congleton, of charging closet-pails with acidulated peat dust. Towards the close of 1894, the County Medical Officer of Health made a visit of inspection to Congleton, and was given an opportunity of seeing the plan in working. He is, therefore, now able to give a somewhat fuller account of this system, which does not appear to have been adopted or tried in any other town.

It was about 1877 that closet-pails were introduced to Congleton and their emptying taken in hand by the Corporation. From that time till the late autumn of 1893 the work of collecting the pail-contents and disposing of it increased and became more costly year by year. The defects of the pail-system were its offensiveness and the growing difficulty of disposing of the stuff collected. So it was decided to make trial of Mr. Bowler's method of treating excreta with acidulated peat. The peat made use of is dried and ground fine, and then charged with a tenth of its weight of sulphuric acid. The required proportion of acid is sprinkled on the dry peat and easily worked up by turning it over. This makes a good absorbent, indeed it has been found by experiment that it will take up eight times its weight of water. Each pail when put into the closet has in it a sufficient quantity of acidulated peat (say, [from a quarter to a third of its holding capacity) and when the pails are brought back to the yard their contents are comparatively dry, and so free from offensive odour that it is found quite tolerable to collect in the day time.

Now as to cost. The gross expenditure for collecting ashes, refuse and excreta, from October, 1892, to October, 1893 (the year before the peat system was tried), the labour, team-work, &c., cost £562 3s. 0d., and the income from sale of manure was £29 4s. 0d., making the net expense £532 19s. 0s. From October, 1893, to October, 1894 (when the peat system was in operation), the labour, team-work, &c., cost £637 13s 11d., the peat and acid cost £117 7s. 0d., and the value of the manure sold was £124 3s. 4d, making the net expense £630 17s. 7d. Thus the expense to the town during the first year in which the peat system was tried showed an increase of £97 18s. 7d. on the previous year. However on examining how this increase was brought about, it was found that £52 7s. 2d. was from the increased cost of collecting ash-midden refuse, and only £45 11s, 5d. was from the increased cost in collecting pail-contents. The £52 7s. 2d. represents the cost of collecting an increase of 401 loads of midden refuse. As there were in use for almost the whole of the earlier year 553 pails, and at the close of the latter year 674 pails, it is fair to conclude that much of the £45 11s. 5d. represents the cost of emptying an increased number of pails. Thus it may be said that an important improvement in dealing with excreta has been effected, with relatively very little increase in expenditure, and this is not a bad result to show for the first year of working.

The district Medical Officer of Health reports that the method continues to prove a great success, notwithstanding some difficulty experienced from time to time in procuring the dust sufficiently free from moisture. This difficulty is likely to be removed, as he understands that the Authority have decided to take the required supply of peat from Congleton Moss, and prepare the dust themselves. During the year about 68 tons

of peat dust were used, and the cost of this prepared and acidulated was about 50/- per ton. It is estimated that the Authority could obtain peat from within the Borough, dry it, grind it and acidulate it at a cost of not more than 30/- per ton, thus reducing the cost of working the system by £68.

**Destructors.**—The best way of dealing with midden-refuse is by means of cremation in specially constructed furnaces known as destructors. The process is cleanly and simple. The refuse is packed into large close furnaces through holes at the top and burnt. That which is incombustible, after being subjected to an intense heat for a long time, is drawn at the lower part of the furnaces in the form of vitrified cinders or slag, and this as soon as cool is either thrown into a mortar-mill and ground (taking the place in the mortar of clean sharp sand) or used for path making or some similar purpose. Any iron-waste drawn with the slag is sorted out and finds a ready market.

Very little was done in 1894 towards providing destructors. In Wallasey, it was decided to provide one in 1892, but nothing was done in 1893. At the close of the year 1894, the Medical Officer of Health reports that the destructor will be ready in a short time to commence work. The Medical Officer of Health for Dukinfield again advises his Authority to provide a destructor.

As the result of a visit which was paid in November, 1893, by a Sub-Committee from Crewe, to inspect different types of destructors, one of the boilers at the pumping station on the sewage farm was fitted with Meldrum's steam-jet blower and closed furnace, in order to burn the dry refuse of the town in place of slack. The Borough Surveyor, after some very exhaustive trials, reported that even with the extra cost of employing an additional stoker very considerable saving would accrue if these blowers are used. More extended trials are to be made.

**Sewering.**—The work of draining and sewerage has been carried forward in almost every part of the County in 1894. At Congleton Borough 9 streets were sewered and 290 houses re-drained throughout. At Macclesfield Borough 6 new sewers were laid. At Alsager a sub-committee was appointed to consider some better way of dealing with the filtration-area; and at Bowdon the Medical Officer of Health is not satisfied with the willow-beds—the desirability of continuing to deal with the sewage in this way is, in his opinion, an open question. At Bredbury the main drainage has been advanced somewhat, but it has been retarded owing to the difficulty of procuring a site for the outfall works. A Provisional Order to enable the Authority to put in force the compulsory powers of purchase of the Lands Clauses Act, was applied for and granted on March 31st. Then the illness of the owner of the site chosen at Broadmeadow and the notifications as to disturbance of a Rifle Range,

delayed the purchase. In the meantime efforts had been made to secure the only other available land near Vernon Park, but it was bought by the Stockport Corporation, who subsequently made overtures to Bredbury to connect to the Stockport scheme. This is under consideration. The main-drainage at Romiley has considerably advanced—about a mile is now in course of construction, of which about two-thirds are already finished. Up to the present 42 houses have been connected with it. At Cheadle and Gatley about a mile and a quarter of the new sewer were laid during the year in the main roads and streets, all houses in these streets being connected with it. The houses directly affected by these improvements number 193. There is now only one part of the district in which the new sewer has to be constructed to complete the main drainage scheme. The Stalybridge and Dukinfield Authorities have decided to form a joint sewage scheme, the sewage to be treated at Bradley Hurst. At Hoylake and West Kirby 300 yards of new sewer were laid. At Marple the outfall works and the new main sewer from Rose Hill to Hawk Green have made fair progress. At Nantwich, owing to the bad state of the sewer in Hospital Street about 200 yards have been relaid in larger pipes with a better fall. Five man-holes have been made in this street and others elsewhere, and sewer ventilators have been fixed in various parts of the town. The filter beds work fairly well. Neston and Parkgate, and Higher and Lower Bebington are well sewered on the whole. An inquiry was lately held to obtain sanction for a loan required to extend the Little Neston sewers. The new sewage scheme for Sale is making rapid progress toward completion. A further section of the main sewer at Tarporley has been completed during the year. At Wallasey much has been done in repairing and reconstructing sewers. At Wilmslow the sewer in South Oak lane was finished, and progress was made with Chapel lane and Oak lane sewers. The northern drainage scheme at Wilmslow does not appear to have been commenced. At Yeardsley-cum-Whaley a proper system is still required.

In the Rural Districts, also, sewerage and sewage works seem to have full attention, but much remains to be done. In the Altrincham (now Bucklow) Rural District 5 outfalls have been regularly inspected—the analysis of the effluent proved satisfactory. The contract for a complete scheme of sewerage for Northenden was let in April, and the work was nearly completed at the end of the year. New sewers were also laid at Moss Lane, Timperley, Hesketh Road, and Ashton-on-Mersey. The re-construction of tanks and sludge-pits at Carrington was commenced, and plans were prepared for the re-construction of sewage-tanks at Knutsford. In the Chester Rural District a great part of the sewer belonging to the village of Ince was relaid, and 200 yards of sewer were laid at Upton. The Newton sewer was successfully relaid, notwithstanding the difficulty of

obtaining access to the Joint Railway Company's grounds. The outfall at Eaton was efficiently dealt with. At Eccleston Ferry the danger of river pollution has been completely obviated by mechanical means; the drains have been relaid to deliver into a water-tight cart, and the drainage thus collected is distributed over land. The Medical Officer of Health for the Congleton Rural District draws attention to the utterly insanitary state of parts of three townships—Elworth, Elton, and Bradwall—owing to want of proper drainage. There is the same want at Rode Heath and Thurlwood. At Holmes Chapel one length of drainage gave way, but it was soon put in order. The irrigation grounds are working well, and no complaints have been received. It is reported that the sewage from Albert Terrace and other houses in the neighbourhood, at Disley, requires to be dealt with chemically, or by irrigation. The effluent outfalls in the Macclesfield Rural District have been visited at intervals and found satisfactory. A general system of sewerage in some of the larger villages of the Nantwich Rural District is much required; at Audlem a main sewer has been relaid. In the Northwich Rural District works for the precipitation and filtration of the sewage of Lostock Gralam have been carried out and are in use. In the Runcorn Rural District, further sewerage extensions have been carried out at Appleton, at Overton in Frodsham Lordship, and at Moss Lane, Moore. In the whole Rural District, 12 sewers have been improved and 8 extended. In the Stockport Rural District, part of Norbury has been provided with a main sewer.

**Flushing of Sewers and Drains** does not appear to be done at all generally, yet it is most useful work and will well repay time and money spent on it. In several of the Reports are references to the matter. At Lower Bebington a good portable tank is used for flushing, at Neston and Parkgate the work is done weekly from fixed tanks, and also from a portable tank constructed by the Surveyor. At Chorley (now Alderley Edge) 3 automatic flushing tanks were put down in 1894. At Bromborough the sewers are flushed regularly once a week; at Hoylake and West Kirby they are flushed weekly during the summer and fortnightly during the winter. At Higher Bebington sewers are flushed as required, and at Barrow and Tattenhall (in the Tarvin Rural District) the sewers are flushed occasionally in the hot weather. In the Wirral Rural District, the sewers are flushed regularly at Eastham, Heswall and Ellesmere Port, and when required at Upton. At Bredbury and Romiley the main sewers are flushed in all parts of the District monthly—30,000 gallons of water being used every month. At Wallasey the systematic flushing of house-drains and sewers is carried on throughout the year. Special gangs attend to houses where infectious disease has been notified. The quantity of water used for flushing in this Urban District during 1894, by

the hose or through automatic sewer flushers, was 12,954,604 gallons.

**Sewer Ventilators.**—From time to time complaints are made of effluvia from sewer ventilators. This is usually due to there not being sewer ventilators enough, or to the sewers being “sewers of deposit.” If sewers were systematically flushed there would seldom be ground for such complaints. In Sale, which seems to be specially liable to suffer from this nuisance, there was very little complaint during 1894. In Alsager, where there seem to have been complaints, the Medical Officer of Health recommended the closing of the ventilators at the ground level on the main thoroughfares, where practicable, and increasing the number of other ventilators. This, to a certain extent, has been acted on. At Crewe, where frequent complaints have been made of foul smells from man-hole ventilators and street gullies, the Borough Surveyor and Medical Officer of Health reported on the matter and made suggestions. These were considered by a Special Committee and the following recommendations made and accepted by the Town Council:—(1.) To deal first with all offensive man-holes and gullies, by filling up all inverts of such to the level of the sewer. (2.) If the offensiveness continues, to take into consideration the surrounding property as regards slaughterhouses, &c., and take the temperature of the sewage in successive man-holes, in order to ascertain if any steam or heated water is finding its way into the sewer. (3.) If negative results follow, to place an upcast shaft reasonably near the offending man-hole. (4.) If this does not remedy the nuisance, to have the road sewers trapped at their entrance into the main sewer.

**Pollution of Rivers and Streams.**—A few notes in some of the Reports refer to this, and are not unimportant. The Medical Officer of Health for Bowdon bears witness that “the river Bollin is as usual sewage-laden,” and the Medical Officer of Health for Dukinfield bears a similar testimony as to the state of the river Tame—it “is at present nothing more nor less than an open sewer.” From Middlewich comes the report that the pollution of the river Croco has been perhaps the most serious evil connected with local industrial development. The Medical Officer of Health for the Hayfield (now Disley) Rural District writes that the greater portion of the sewage at Furness Vale runs into the drains on the highway and so to the Canal, while the other portion finds its way into the river Goyt. The drainage at Disley not being completed, the locality is in a worse condition than previously, the only outlet is a small stream which runs through the village, and enters the Goyt, and this stream becomes very offensive during summer. The Medical Officer of Health for Whitchurch (now Malpas) Rural District notes that the brook running through Cuddington is polluted with sewage, and the Medical Officer of

Health for Wirral Rural District furnishes particulars of the pollution of the Spital boundary brook, which has had much of the attention of the Authority during the year.

**The Rivers Pollution Prevention Act, 1893.**—It may be well here to draw attention to an Act passed in 1893, with the object of strengthening the Rivers Pollution Prevention Act, 1876. It enacts that, “where any sewage matter falls or flows, or is carried into any stream after passing through or along a channel which is vested in a Sanitary Authority, the Sanitary Authority shall, for the purposes of section three of the Rivers Pollution Prevention Act, 1876, be deemed to knowingly permit the sewage matter so to fall, flow, or be carried.”

**Dwelling-Houses unfit for Habitation.**—Not much seems to have been done in the administrative County, during 1894, in closing houses unfit for habitation or rendering them habitable. In the Report from the Borough of Stalybridge is a list of 6 houses in bad sanitary condition, which were put in proper order under the direction of the Borough Surveyor. In the same Report is a list of 16 houses, which were closed under powers given in section 82 of the Stalybridge Extension and Improvement Act, 1881. The Medical Officer of Health for Bredbury and Romiley reports that two cottages at Greave were condemned as unfit for human habitation. One of these is still occupied, and there seems to have been some difficulty about getting it closed. The Medical Officer of Health for Whitechurch (now Malpas) Rural District Reports two adjoining houses at Cuddington as unfit for human habitation. At Wirral one house unfit for human habitation has been dealt with. At Neston and Parkgate several old cottages were removed in 1894, and others improved.

**Overcrowding.**—Judging by the Reports there is little overcrowding. In most of the West Cheshire Districts it is noted that cases are occasionally reported but they are infrequent. In the Altrincham Rural District 254 cases were reported and abated, and in the Northwich Rural District were several cases—the number is not stated. In the Nantwich Rural District were two or three cases and in the Congleton Rural District were 3 cases. In the town of Altrincham were 5 cases, in Bredbury and Romiley 3 cases. In the Chester Rural District was one case and in Whitechurch one case and in Lymm one case.

**The Housing of the Working Classes Act, 1890.**—Houses unfit for human habitation can be generally more satisfactorily dealt with under this Act than the Public Health Act. This Act consolidates and amends many previous Acts on the same subject. Its object is to secure the closure of insanitary dwelling-houses, and when necessary their demolition and



replacement by sanitary dwelling-houses. It is applicable throughout the United Kingdom.

**Part 1—Unhealthy Areas.**—It is made the duty of the Medical Officer of Health to officially inform his Authority when he finds (*a*) any houses, courts or alleys, are unfit for human habitation, or that (*b*) the narrowness, closeness, and bad arrangement, or the bad condition of the streets and houses, or groups of houses within an area, or the want of light, air, ventilation, or proper conveniences, or any other sanitary defect, make the given area dangerous or injurious to the health of the inhabitants of the area, or of their neighbours: and that the evils connected with such houses, courts, or alleys, cannot be effectually remedied otherwise than by an improvement scheme for their re-arrangement and re-construction. And the Authority, if satisfied of the truth of the information thus given them, and of the sufficiency of their resources, are required to make a scheme for the improvement of the area. The Medical Officer of Health is required on complaint from ratepayers to report on the condition of any area complained of as being unhealthy. The improvement scheme must provide for the re-housing of the members of the working classes displaced by it. In assessing compensation to be paid owners of houses in the condemned area, deductions are made for sanitary defects, and where a house cannot reasonably be made fit for human habitation, only the value of land and building materials need be paid.

**Part 2—Unhealthy Dwelling-Houses.**—It is made the duty of the Medical Officer of Health of every District to officially inform his Authority of any dwelling-house which appears to him in a state so dangerous or injurious to health as to be unfit for human habitation; and he may be called upon on complaint of householders to report on the condition of any house. The Authority are required to cause inspections to be made from time to time of their District, to ascertain whether any dwelling-house is unfit for human habitation, and they must forthwith take the necessary proceedings, before a justice, to obtain a closing order on receiving a report of a house unfit from their Officer. When a closing order has been made, and the Authority are of opinion that the dwelling-house has not been rendered fit for human habitation, they may order the demolition of the building, time being given the owner to attend and state his objections. It is also made the duty of the Medical Officer of Health to officially inform his Authority of "obstructive" buildings. If any building in his District, though not in itself unfit for human habitation, stops ventilation, or otherwise conduces to make other buildings unfit for human habitation, or prevents proper measures being taken to abate nuisances, it is his duty to report the facts to his Authority, who shall order the demolition of the buildings, after compensating the owner.

### **The Housing of the Working Classes Act, 1894.—**

This explains the provisions of Part 2 of the Housing of the Working Classes Act, 1890. with respect to powers of borrowing under a scheme for reconstruction.

It is surprising how little action has been taken under the Act of 1890. At Macclesfield Borough several houses were inspected, with a view of making use of the Act, but nothing was done. At Lower Bebington, where closing orders were obtained, in 1893, in respect of insanitary property in the Wynt, the demolition of 3 of these houses was ordered and effected in 1894. In Macclesfield Rural District one notice was served under the provisions of Part 2 of the Act, the outcome of which was that the house was made habitable. Three other houses unfit for habitation in this District were vacated without the service of a notice, and of these 2 have since been rebuilt—the other remains untenanted. At Lymm, according to the Medical Officer of Health, an effort was made to remove a block of buildings, unfit for human habitation and incapable of being made fit, but “the aim of the Board failed of accomplishment.” From Northwich Urban District also, comes the report that attempts to put in force various sections of the Act have utterly failed.

**New Houses and Building Bye-laws.**—The Medical Officers of Health in many Districts supply information as to the number of houses built, as some gauge of the progress made. Erecting new dwelling-houses is obviously the one effectual remedy for overcrowding, and if good building bye-laws are in force in the district, and the houses are well-built and drained, and fitted with proper sanitary appliances, the Local Authority is thereby placed in a better position for dealing with insanitary property. On the other hand, if there are no good building bye-laws in force, and each builder is suffered to do that which is right in his own eyes, new buildings instead of being a source of strength are a source of weakness in a District.

In Dukinfield, where the bye-laws in use were adopted in 1857, a Committee has been appointed to arrange bye-laws up to date. At Neston and Parkgate the model bye-laws of the Local Government Board, with respect to new streets and buildings, have been in force since the latter end of 1893. These bye-laws were adopted a little earlier in the Chester Rural District, and were well enforced in 1894. Building bye-laws have been for years in force throughout the more populous parts of the Wirral Rural District. During 1894, these were carefully revised by Mr. Priest (Messrs. Beloe and Priest) in conjunction with the Medical Officer of Health, at the request of the Authority. This is in view of their re-issue and enforcement throughout the whole District. The Nantwich Rural District has had urban powers in respect of new buildings for a number of years, and since these powers were conferred no less than 1645 plans for new buildings have been examined and passed by

the Surveyor. In Northwich Rural District, plans for 154 new houses were examined and passed in 1894. The Medical Officer of Health for Northwich, however, considers "that the bye-laws offer an insufficient safeguard against what is called jerry-building." The new Parochial Committee at Halton (Runcorn Rural District) have adopted bye-laws, which will shortly be enforced. In the Altrincham (now Bucklow) Rural District 240 plans for new buildings were examined and passed, during 1894, building operations having been most active in the townships of Ashton-on-Mersey, Timperley, Hale and Dunham. Additional building bye-laws for this large District have been drafted, and await formal approval and adoption by the new Council. In Hoylake and West Kirby 99 houses were built or in course of erection in 1894.

**New Streets.**—The work of making new streets has proceeded slowly in several Districts. At Hoylake and West Kirby the Authority have had in hand the paving and macadamizing of 14 private streets and 11 back passages. At Hoole 6 streets have been adopted and re-made, and 3 private streets have been macadamized and the footpaths paved. At Cheadle and Gatley progress was made with the paving and lighting of private streets, but some are still in bad condition and require attention. At Chorley (now Alderley Edge) a new street has been made. At Hazel Grove, Stockport one new street has been made, but many are yet unpaved and require attention.

**School Accommodation** is a subject that may well come within the observation of the Medical Officer of Health, yet it is referred to in very few Reports. In the Borough of Crewe there is accommodation for 6716 children. The Medical Officer of Health visited all the schools and in one found very serious overcrowding. The sanitary arrangements are good. The School Attendance Officers and Head Teachers report cases of infectious disease. In the Borough of Hyde alterations were begun in many of the public elementary schools during 1894, and when these are completed it is hoped that their sanitary state, &c., will be much improved. In the Runcorn Rural District the schools at Antrobus have been enlarged and much improved, and the Schools at Stretton have been re-drained. At Macclesfield Borough, Bredbury and Romiley, Parkgate and Wallasey, very defective sanitary accommodation has been replaced by closets of approved pattern.

**Workshops.**—Among the duties of sanitary officials is the inspection of workshops, *i.e.*, places in which manual labour is exercised by way of trade, to the exclusion of steam, water or other mechanical power.\* However there is very slight reference

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\*It is important to note that workshops in which bleaching or dyeing is carried on, or letter-press printing or bookbinding, or in which matches are made, or tobacco is manufactured, are factories, even though no mechanical power be used, and *not* inspected by sanitary officials.

to workshops or their inspection in the Districts within the Administrative County. The Medical Officer of Health for the Borough of Crewe reports that there are 59 factories and workshops in the town, all of which he has visited during 1894. He has opened a register for workshops. The Medical Officer of Health for the Borough of Macclesfield has had a list prepared of the workshops in his district and hopes to visit them in 1895. The Medical Officer of Health for Marple reports that the workshops there have been inspected and well kept. The Medical Officer of Health for Buglawton draws attention to the fact that among those dying there are nearly three times as many women as men. His explanation of this is that females being almost exclusively employed in the local factories, the number of women living in the district is always greatly in excess of the men. At Lymm the Authority has appointed an additional inspector for the fustian-cutting shops. The Medical Officer of Health advised that the post should be given to a lady, but it was not.

**Lodging-houses.** — Common lodging-houses, that is lodging-houses in which persons of the poorest class are received for short periods and though strangers to one another are allowed to inhabit one common room, were doubtless fairly well inspected, but the fact that every common lodging-house must be registered seems to have been overlooked in some Districts.

In Crewe there are 6 registered common lodging-houses in use, together able to accommodate 105 lodgers. The Medical Officer of Health considers it impossible even with the most careful supervision, to keep these houses as they should be kept. He suggests the erection and management by the Corporation of a model lodging-house, under powers contained in Part 3 of the Housing of Working Classes Act.

The Medical Officer of Health for Hyde draws attention to an old common lodging-house there, which although well conducted, is structurally quite unsuited for a lodging-house, and should never have been licensed.

At Macclesfield there appear to be 19 registered common lodging-houses in use. An average of 194 persons per night were accommodated in 1894. There were 1023 visits of inspection paid during the year. In some cases too little air-space has been allowed, but, with one exception, the cleanliness and white-washing have been well attended to. Two cases of small-pox occurring together at one house were promptly notified and isolated in hospital. One fresh license was granted during the year.

The Medical Officer of Health for Stalybridge reports that he visited all the common lodging-houses in the Borough, and found them in fairly sanitary condition. The common lodging-houses at Nantwich have been visited daily, and occasionally midnight visits were made, and at Middlewich the common lodging-houses have been the object of special inspection. The

reports from Altrincham, Northwich, Runcorn. Tarporley, Wilmslow and Winsford are that the common lodging-houses in these towns are inspected, clean, and in order. At Sandbach all the houses appear to be satisfactory but one. In the Rural Districts of Congleton, Tarvin, and Warrington the common lodging-houses have been duly inspected. The only common lodging-house in the Nantwich Rural District is reported unoccupied. The only common lodging-houses in the Altrincham Rural District are at Knutsford, and have the Inspector's attention. At Higher Bebington, Cheadle and Gatley, Dukinfield, Ashton-under-Lyne, and the Northwich Rural District there are no common lodging-houses.

**Houses Let in Lodgings.**—Any Local Authority may, with the consent of the Local Government Board, make bye-laws for fixing the number of persons who may occupy a house or part of a house which is let in lodgings, and for the separation of the sexes in a house so let; also for the registration and inspection of houses so let, for enforcing drainage and the provision of privy accommodation and for promoting their cleanliness and ventilation, for the cleansing and lime-washing of the premises at stated times, and the paving of courtyards, and for the giving of notices and taking precautions in case of any infectious disease. This is a very useful power (enabling Authorities to have control over a class of lodging-houses which could not be regulated as common lodging-houses), and to assist Authorities in making use of it, model bye laws have been issued. Still it appears that only one district in the County (Crewe) has made bye-laws relating to houses let in lodgings.

**Spread of Disease by Vagrants.**—This is a matter that has been forced on the attention of many County Councils of late. At the invitation of the London County Council, the Cheshire Council appointed representatives to attend a Conference in London, July 19th, on the subject of the spread of disease by vagrants. Dr. J. W. Smith, C.C., and the County Medical Officer of Health accordingly attended the Conference on the day named, and their report thereon was subsequently laid before the Public Health Committee.

**Water-supply.**—By the Public Health Act, 1875, power is given Local Authorities to construct necessary waterworks, two months' notice of their intention being given to allow of objections being heard by the Local Government Board. The supply must be maintained pure and wholesome, and at a pressure which will carry it to the top story of the highest dwelling-house in the district supplied. The Authorities may supply to public baths or washhouses or for trade purposes on terms agreed on, or may gratuitously supply public baths or washhouses, established otherwise than for private profit; and Urban Authorities must provide and maintain fire plugs, &c.,

for securing a sufficient supply in case of fire. When the water of any well, tank, cistern, or pump, used for drinking purposes is reported to an Authority to be so polluted as to be injurious to health, they may apply to a Court of Summary Jurisdiction, and the Court may cause the water to be analysed at the cost of the Local Authority, and may make an order temporarily or permanently closing the well.

The Public Health (Water) Act, 1878, amends the Public Health Act, 1875, as far as relates to water-supply. It makes it the duty of every Rural Sanitary Authority to see that every occupied dwelling in their District, has within a reasonable distance an available and sufficient supply of wholesome water. If the Medical Officer of Health or Inspector report that a house is without such supply, and the Authority are of opinion that it can be provided at a reasonable cost, they shall serve a notice on the owner, requiring him, within a specified time to provide a water-supply, and at the expiration of this time, if the notice is not complied with, the Authority may serve another notice stating that if the requirements of the first notice are not complied with within a month, they will provide such a supply, and recover the expense from the owner. This provision does not exempt the Authority from the duty (imposed on them by the Public Health Act, 1875) of supplying their District in cases where danger arises to the health of the inhabitants from the insufficiency or unwholesomeness of the existing supply and a general scheme of supply is required, and such supply can be got at a reasonable cost. It is not lawful in any Rural District for the owner of a dwelling-house, built or rebuilt from the ground floor, after the date of the commencement of this Act, to allow the same to be occupied without having obtained a certificate from the Sanitary Authority that a sufficient supply of wholesome water is available. It is made the duty of the Rural Authority, from time to time, to ascertain the condition of the water-supply within their District.

These powers would be sufficient to enable every Authority to obtain an adequate and wholesome supply for every household, if it were not for the restrictions conveyed in the words "reasonable cost." It often happens that the Medical Officer of Health or Inspector reports that a house is without a sufficient supply of wholesome water, but the Authority are not of opinion that the supply can be provided at a reasonable cost and so no action is taken, or supposing danger arises to the health of the inhabitants of a District from the insufficiency or unwholesomeness of the existing supply, and a general scheme of supply is required, if such supply cannot be got at a reasonable cost, the supply is not got. It thus happens that powers relating to the provision of water in the Public Health Act, 1875, and the Public Health (Water) Act, 1878, are in great part inoperative. The Local Authorities are not to blame for this, for often supplying an outlying farmhouse, or carrying out a general scheme of supply

in a remote sparsely populated District, is manifestly such an expensive undertaking it would be impossible to be of opinion the work could be done at reasonable cost. No one is particularly to blame, but as long as the powers given have such limitations the water-supply in many districts will be insufficient, and shallow wells, so liable to pollution from the surface, will be used.

The Reports from the towns are as follows :—At Congleton Borough the service is constant, and during the year town's water was introduced into 64 houses not previously supplied. The supply for the Borough of Crewe is from Artesian wells at Whitmore. The Medical Officer of Health made regular monthly analyses of this, and found it of uniformly good quality, varying only a few degrees in hardness. At Hyde Borough, Manchester water has been supplied to the higher parts of the District since 1893. The question of utilising the water which was formerly collected for the reservoirs, and is now running to waste, is arising, and the Medical Officer for Health suggests that it might be used for flushing sewers. In Macclesfield Borough no complaints have been made about the town's water, but samples have not been examined lately. The water supplied to Stalybridge is reported to be "of the purest kind." At Alsager the supply is from shallow wells. These have been cleaned out and bored a little deeper, but whether the increased yield will be equal to the requirements even of the near future remains to be tested. At Bromborough (except at the Magazines village) and at Higher Bebington there is a good supply from the Wirral Water Works, and at Lower Bebington every house is supplied from the mains, except 4, and steps are being taken to supply these. Bowdon has an excellent supply from Manchester. At Bredbury and Romiley the supply was well maintained, except in the higher parts of the District, where there was deficient pressure, some taps only yielding a supply during the night. Complaint was made to the Stockport Water Works Company, and some improvement effected, but the pressure continued to be unsatisfactory. Seeing this, the owner of the higher land collected water from several springs in Werneth Low. This water was analysed and found to be of good quality, and pipes were laid to new houses being built in Salters Lane, Woodley, and these will probably be extended to other houses in the higher parts of the District. A well supplying 9 cottages was closed on the report of the County Analyst, and town's water supplied. In addition town's water was supplied to 13 new houses in Romiley, and 6 old and 15 new houses in Bredbury. At Buglawton the insufficiency of water was felt greatly. The scheme referred to in the last Report has been approved of by the Local Government Board. At Cheadle and Gatley there is a sufficient supply from the Stockport Water Works, and 4 pump-wells supplying houses at a distance from the mains were cleansed, repaired and covered. The supply at Chorley was ample and less hard than in 1893.

Samples from 33 pump-wells were analysed, and as a result 3 wells were closed. Dukinfield, the town of Ashton-under-Lyne, in Lancashire, and Stalybridge jointly own the district Water Works. The water is gathered from the springs and streams in the Swineshaw Valley, and is pure and abundant—about 19 gallons per head per day. The report from Hollingworth and Mottram is that the supply is abundant and good. Hoylake and West Kirby have a good supply from the deep wells at West Kirby. At Marple all but a small percentage of the houses are supplied from the mains. The supply is good and plentiful, while the water from the few wells still existing is satisfactory. At Lymm there has been an extension of the of the mains through Heatley and Statham. An adequate source of water-supply for Middlewich has been discovered and developed, and the Authority is endeavouring to make this supply available as soon as possible. The supply at Nantwich has proved fairly adequate throughout the year, but “its quality and appearance cannot always be greatly applauded.” The supply at Northwich is not completely satisfactory, but its purity is beyond question. At Neston and Parkgate there is a pure supply from deep wells belonging to the District Council. The mains were extended 300 yards during the year. The Sandbach supply gives increased satisfaction year by year. There are 1341 houses in the District, and of these 1067 are now using town’s water—75 are off the pipe line and 104 are using wells approved by the County Analyst. Thus only 95 houses have still to be fitted up, the average hardness was 5.2 degrees. The revenue in 1894 was £700, and this it is hoped will nearly meet all charges. At Tarporley the work of joining houses with the mains has been continued—30 were connected during 1894, making in all 190 houses supplied for domestic purposes. Nine samples of well-water were analysed by the Medical Officer of Health and 3 were found contaminated. At Wallasey the water is good but hard. The average quantity used per head per day is upwards of 34 gallons. The new well at Sea View Road was formally opened on November 17th. At Wilmslow there are still many houses not supplied with town’s water. Many samples from private wells were taken for analysis during the year. The Winsford supply is not quite satisfactory. At Yeardsley-cum-Whaley a good and wholesome supply is required.

Supplying Rural Districts with sufficient water of good quality is, of course, relatively much more difficult and costly than supplying Urban Districts, and for the reason already given is often impracticable. The Reports from the Rural Districts are as follows:—At the Altrincham (now Bucklow) District, the North Cheshire Water Company supply Ashton-on-Mersey, Timperley, Dunham, Northenden, and part of Hale. Knutsford has an independent supply which “has been proved to be dangerously precarious.” The other townships are dependent



on private sources. Special attention has been directed during the year to the urgent need of a complete scheme of water-supply for Carrington and Partington. The Corporation of Manchester, having vested interests in these townships, have been appealed to for aid in this much needed work, and have the matter still under consideration. At Ashton-under-Lyne (now Tintwistle) the supply is abundant and good. In the Chester Rural District parts are supplied by the Chester Water Works and other parts by the Wrexham Water Works; elsewhere some of the houses have good well water and some water which is unsuitable or deficient in quantity. Efforts have been made to obtain a supply for Great Saughall, but the expense has proved an insurmountable obstacle. Four samples were analysed by the Medical Officer of Health, 2 of which were found fairly good. In the Congleton Rural District there are public wells at Mow Cop, Kent Green, Mount Pleasant and Holmes Chapel, in the care of the Inspector. During this summer the springs were at times very low. When the supplying of Booth Lane, Malkin's Bank, and Wheelock Heath is completed, it will relieve a large district that is very imperfectly supplied with usable water. Seven supplies for new houses were sent for analysis and certificates to occupy were given. In the Hayfield (now Disley) District, the water-supply provided for a portion of Furness has proved very insufficient, and during the summer the inhabitants had great difficulty in obtaining what was necessary from other and distant sources. Proper provision could be made without very great expense. In the Macclesfield District, where the supply is mainly from private wells or springs, 109 samples were analysed (three-fourths by the Medical Officer of Health) and of them 37 were found to be bad or very bad. In the Nantwich Rural District 28,000,000 gallons were supplied during the year, 160 houses were newly supplied from the mains, and nearly 10 miles of mains were laid. Altogether up to the present 103 miles of water mains have been laid by the Authority, supplying 2,976 houses. Samples were taken from pumps at 12 houses and sent for analysis—11 proved bad. In the Northwich Rural District the 17 townships supplied with water have had an uninterrupted service all through the year, and there has been an extension of mains into the Northwich Urban District to supply the Union Workhouse with Moulton water. Plans for the supply of Oakmere and Delamere from the Liverpool mains have been passed by the Authority and sent to the Local Government Board for approval. Two townships, Mooresbarrow and Sproston, are badly supplied. In the Runcorn Rural District there is need of an improved supply at Bartington, Dutton, Preston-on-the-Hill, "the Common" at Halton, Sutton, Weston, Alvanley, Frodsham Lordship, Helsby, Kingsley and Manley. At Dutton, after considerable outlay in sinking, water was found which could not be used for

domestic purposes. The Medical Officer of Health is of opinion that increased pumping power and storage accommodation at the Workhouse would be a ready way of supplying much of this township. The well at Preston-on-the-Hill, referred to in the last report, has only yielded a very unsatisfactory water. The Sutton public pump has not yet answered expectations. Weston has an intermittent supply from the Runcorn Urban District, and the Medical Officer of Health proposes the mains should be enlarged and the supply made continuous. Frodsham has now a good supply, and Frodsham Lordship might have participated in this but declined. Even now the mains might be extended to Frodsham Lordship. The old village pump at Overton has been replaced by a more effective one, which yields an ample supply. As proving the capability of Helsby to provide water, it may be mentioned that during the year two property owners made deep borings and found abundance of good water which overflows on the surface. At Kingsley an improved supply is under consideration. In the Tarvin District efforts have been made to improve the supply, but operations are hampered by the very limited outlay owners can be called upon to make. A private well has been sunk at Tiverton and several house owners have combined to sink a well at Oscroft. Attempts have been made to devise a scheme for the general supply of the village of Tiverton, by sinking a deep well or an extension from the Liverpool mains. The two public wells being dip-wells are easily fouled. An attempt on the part of the Authority to improve the water-supply, by a small gravitation scheme at Burwardsley, was arrested by a petition from the inhabitants, headed by the Vicar, to the effect that "they preferred to endure the present inconvenience to which they were accustomed, rather than incur the expense of any improvement, which whether done at the cost of the rates or landlords, would equally be felt by the occupiers." Of 15 samples analysed by the Medical Officer of Health for Tarvin 8 were found bad. Many proposed supplies for new houses in Warrington Rural District were tested by analysis, and all reported on as bad or doubtful were rejected. In the Whitchurch (now Malpas) District there is a supply from the Liverpool mains, but it is not constant, and in outlying parts the householders are dependent on private wells and springs. The Medical Officer of Health proposes that a supply should be provided for the hamlet of Cuddington, containing about 30 houses. Wirral is generally well supplied from the Wirral Water Works. The Company are sinking a well at Hooton to improve the supply. Bidston-with-Ford and Noctorum are supplied from the Birkenhead Water Works. Three samples were analysed by the Medical Officer of Health—all were condemned.

There is a Report presented quarterly by the County Analyst giving particulars of the results of analyses of samples of water submitted to him from the Urban and Rural Districts,

and the County Council take steps to ascertain what action is taken by the several Authorities for preventing water certified as bad or of doubtful purity from being used for domestic purposes. Out of 172 samples analysed in 1894, 15 were certified as of doubtful purity, 30 as bad or unfit for domestic use, and 9 as very bad.

**Dairies, Cow-sheds and Milk Shops.**—Under the Dairies, Cow-sheds and Milk Shops Order it is unlawful for anyone to carry on the trade of cow-keeper, dairyman, or purveyor of milk unless registered by the Local Authority. No one is allowed to begin to occupy a building as a dairy or cow-shed unless he makes provision to the reasonable satisfaction of the Authority for its lighting and ventilation, including air-space and cleansing, drainage and water-supply, and he must give the Authority a month's notice in writing of his intention to occupy. Dairies and cow-sheds, new or old, can only be occupied as long as the lighting, ventilation, air-space, cleansing, drainage and water-supply are such as are necessary for the health and good condition of the cattle, the cleanliness of milk-vessels, and the protection of milk against infection or contamination. It is unlawful to allow any person suffering from a dangerous disease, or having been recently in contact with such person, to milk cows or in any way help in a milk business, and unlawful for a cow-keeper or dairyman to offend in a similar way. A milk-store must not be used as a sleeping-room, or for any purpose incompatible with the cleanliness of the milk. No W.C.'s, &c., are allowed to communicate with a dairy or milk-store, and pigs are not allowed to be kept in a cow-shed. The milk of diseased cows must not be mixed with other milk, or be sold or used for human food, and must not be used for the food of swine or other animals until boiled.

Local Authorities may make regulations for the inspection of cattle in dairies, for prescribing and regulating the lighting, ventilation, cleansing, draining and water-supply of dairies and cow-sheds, for securing the cleanliness of milk stores and shops and milk vessels, and for prescribing precautions to be taken against infection and contamination.

Doubtless the terms of this Order are very well known to the Medical Officers of Health and Inspectors in the County, and they endeavour in their various Districts to see that the law is carried out. Still in many Districts no regulations appear to have been made, and without precise regulations it is impossible to insure that premises, cattle, and milk are kept clean and in order. The Medical Officer of Health for Crewe reports that he has inspected all the milk shops and dairies. In several instances the air-space provided for each cow was found to be too little, and in a few instances the premises were uncleanly. The Medical Officer of Health for Macclesfield Borough reports that he has visited nearly all the milk-houses and revised the

register. There are 57 registered houses and only 9 were found to satisfy all requirements. In the town of Altrincham the dairies, &c., were visited and all but one found satisfactory. This one was a cow-shed without drainage and a notice was served on the cow-keeper to remedy the defect. At Higher and Lower Bebington the dairies, &c., receive attention, and are generally well kept. At Bredbury and Romiley there are 55 cow-sheds, &c., which are visited by the Inspector four times a year, and are in a satisfactory state generally. At Bromborough there are 6 registered premises which are visited four times a year and white-washed half-yearly. At Cheadle and Gatley are 54 premises. The regulations applying to these were issued in December. All the premises have been visited by the Medical Officer of Health and Inspector, and they are being registered and supplied with copies of the Regulations. In Dukinfield there are 15 dairies, &c., 44 visits of inspection were paid to them and all, with one or two exceptions, were found satisfactory. At Hoole there are 12 premises regularly inspected, and at Neston and Parkgate 7 premises inspected every month. At Marple there are still no regulations and the Medical Officer of Health recommends that they be made. Most of the milk supplied to Hoylake and West Kirby is delivered by farmers residing outside the District, so there are not many milk-houses there. "The register requires reconstruction, and regulations should be made." At Hollingworth and Mottram there are no milk-shops, all the milk vendors having their premises outside the Districts. At Nantwich Urban District are 23 premises and at Tarporley 7, all regularly inspected. At Northwich Urban District the premises are inspected quarterly and lime-washed half-yearly, at Sandbach they are visited and found clean and in order, and at Runcorn Urban District they are under regular supervision and in only a few instances was there cause of complaint. At Wallasey there are registered 25 cow-keepers and 41 purveyors of milk. In all cases where application for registration was made the premises were strictly examined. A prosecution was instituted against a woman for keeping 7 cows in a cow-house adapted and registered for 2 cows. She was fined £5 and costs. According to the local regulations 800 cubic feet of air-space is required to be allowed for each cow. The report from Altrincham Rural District is that these premises were systematically inspected; the report from Nantwich Rural District is that the premises were inspected as opportunity offered; and the report from Northwich Rural District is that the premises have been kept "more or less" under systematic inspection. In Chester Rural District are 42 premises and in Congleton Rural District are 95 premises, all systematically inspected. In Macclesfield Rural District 19 persons were added to the register in 1894, making 343 persons now registered. Most of the premises were visited, and they were generally found well kept. The

Medical Officer of Health for Brinnington and Handforth suggests that regulations should be made. In Wirral are 268 premises all inspected. The number of premises in the Tarvin and Warrington Districts is not named, but it is reported they are inspected.

**Bakehouses.**—The regulations as regards bakehouses are in the Factory and Workshops Acts, 1878 and 1883, and the Medical Officer of Health, in respect of bakehouses, has the powers of an Inspector under the Factory and Workshops Act, 1878. Bakehouses are defined as “any places in which are baked bread, biscuits or confectionery from the baking or selling of which a profit is derived.” Where a bakehouse is in a town containing over 5000 persons at the last Census the inside walls and ceilings of its rooms and the passages and the staircases shall be painted with oil or varnished with three coats, to be renewed every seven years, and washed with hot water and soap every six months, or shall be lime-washed every six months. In similar bakehouses, no room on the level of the bakehouse and part of the same building shall be used as a sleeping place unless effectually separated by partition from floor to ceiling, and unless it has an external glazed window of at least 9 square feet, of which half is made to open. It is not lawful to let or occupy as a bakehouse a room not so let before June 1st, 1883, unless no drain for carrying sewage opens within the room, no W.C., privy or ashpit communicates directly with it, and any cistern for supplying the bakehouse shall be separate from the cistern supplying the W.C. The occupier of any bakehouse whatever is liable to a penalty if the Local Authority’s Inspector satisfies a Court of Summary Jurisdiction that the bakehouse is, on sanitary grounds, unfit for a bakehouse.

These regulations also, in all probability are known to all Medical Officers of Health and Inspectors in the County, yet there is little evidence in the Reports submitted that they are put in force. In only 13 out of the 54 Reports received is there any reference to bakehouses. In the Districts these represent the bakehouses were inspected and found clean and in good order as a rule. The proportion of bakehouses to the population varies much in different Districts, for instance in the Borough of Crewe and Macclesfield the population is almost equal, yet in the first named are 24 bakehouses and in the second 57. Again the population of Neston and Parkgate is one-third more than the population of Tarporley, but the number of bakehouses is the same in both Districts.

**Unsound Meat, &c.**—The statutory powers under which unwholesome food is now ordinarily seized and dealt with in the provinces are contained in Sections 116 to 119 of the Public Health Act, 1875. Any Medical Officer of Health or Inspector may at all reasonable times inspect and examine any animal, carcase, meat, poultry, game, flesh, fish, fruit, vegetables, corn,

bread, flour or milk exposed for sale or deposited in any place for the purpose of sale, or of preparation for sale and intended for the food of man, and if any such animal, carcase, &c., appear to the Medical Officer or Inspector to be diseased, or unsound, or unwholesome, or unfit for the food of man he may seize and carry it away in order that it may be dealt with by a Justice. If it appears to the Justice that the animal, carcase, &c., so seized is diseased, or unsound, or unwholesome, or unfit for the food of man he shall condemn the same and order it to be destroyed, &c., and the owner is liable to fine or imprisonment. Any person who obstructs or impedes an Officer when carrying into execution these provisions is liable to fine. A search warrant may be obtained to search for unsound food kept or concealed in any building. The inability to examine and seize certain kinds of unsound food, and to examine and seize any food when sold, and the inability of the Justice to condemn certain kinds of unsound food, and food sold, and food not seized, have been remedied by section 28 of the Public Health Acts Amendment Act, 1890. Any Urban or Rural Authority by adopting this section may effect the required change as far as relates to the Authority's District.

The powers of the Medical Officers of Health and Inspectors to seize and obtain an order to destroy any kind of unsound food, are therefore ample, yet there appears to be very little food condemned in the County. Either there is practically no trade in unsound meat, &c. in this large County, or the trade is not interfered with. The subject is only alluded to in four Reports. In the Borough of Crewe the carcase of a cow and the carcase of a pig were condemned, and also two boxes of fish. The attention of the Authority was first drawn to the meat by the owners themselves, so they were not proceeded against. The owner of the fish offered very considerable opposition and was proceeded against. He was fined £3 and costs or one month's hard labour for exposing the fish for sale, and 5/- and costs or 7 days hard labour for the obstruction, amounting in all to £5 2s. 6d. He was allowed a month to pay the fine and then a second month, but eventually elected to undergo his term of imprisonment. In the Borough of Macclesfield 67lbs. of fish were seized and destroyed, In the Northwich Urban District legal proceedings were twice taken in respect of diseased meat, and in both cases convictions were obtained and fines imposed. In one instance there was an appeal to Quarter Sessions, but the decision of the Northwich Magistrates was confirmed. At Wallasey there was a considerable seizure (11,472lbs. of beef and mutton, and 6947lbs. of offal), nearly the whole being at the Wallasey and Alfred Dock Lairages, which are in connection with the Foreign Animals Wharf. No prosecutions took place. The carcasses of two bullocks, drowned in the river and washed upon the shore were also removed and destroyed. This appears to be all the unsound food seized or destroyed in the County.

**Slaughter-houses.** — Urban Authorities may provide Public Abattoirs, for the regulation of which they may make bye-laws. It is a pity this power is so seldom used, as private slaughter-houses, whether registered or not, are very liable to cause nuisance. The Reports from 24 Districts record that local slaughter-houses have been inspected, and that they are generally well kept. At Crewe Borough there are 14 slaughter-houses on the register, and excellent abattoirs (which are little used) in connection with the Cattle Market. Two butchers were summoned for not complying with one of the bye-laws, but on their complying and paying costs the summonses were withdrawn. The Medical Officer of Health for the Borough of Macclesfield has carefully inspected all slaughter-houses there and revised the register. He found that in many instances the floors needed cementing over. In Altrincham 2 notices were served on butchers to clean and white-wash dirty premises, and in Lower Bebington 3 notices were served on tenants for slaughtering on unlicensed premises. In Bredbury and Romiley a considerable improvement was noticed in the slaughter-houses. One was closed, as it was a room communicating directly with the rest of the house. From Cheadle and Gatley the report is that there has been an improvement in the way the slaughter-houses are kept, but they are still unlicensed. At Dukinfield there are 15 slaughter-houses, but only 9 in use. Many are small and ill-lighted, and in objectionable places. The Medical Officer of Health trusts the necessity for an abattoir will be considered by the Health Committee. The Medical Officer of Health for Marple reports that the slaughter-houses there should be registered. The Medical Officer of Health for Nantwich Urban District presented a Report on the desirableness of the Authority providing a public abattoir. Since this there has been a manifest improvement in the management of private slaughter-houses in the District. In the Northwich Urban District most of the slaughter-houses are lime-washed four times a year—three were altered and repaired during the year. The slaughter-houses at Sandbach “cannot be considered satisfactory,” especially as to site. At Wallasey the private slaughter-houses, no less than the abattoirs at the docks, are well inspected and kept in good order. The Medical Officer of Health for Wilmslow recommends his Authority to provide a public abattoir. In the Altrincham Rural District a license applied for was refused, and in the Nantwich Rural District the registered slaughter-houses are reported as in many ways open to improvement.

**Offensive Trades.**—A person establishing an offensive trade in an Urban Authority's District, without the Authority's consent in writing is liable under the Public Health Act, 1875, to penalty and a further penalty for each day on which he carries on the trade. The trades mentioned in the Act are those of “blood-boiler, bone-boiler, fellmonger, soap boiler,

tallow melter, tripe boiler, or any other noxious or offensive trade or manufacture." When any of the preceding trades or any slaughter-house, or any place used for a trade process causing effluvia, is certified to an Urban Authority by their Medical Officer of Health, or any two medical practitioners, or any ten inhabitants, to be a nuisance or injurious to the health of any of the inhabitants of the District, complaint must be made before a justice, and if it appears to the Court that the nuisance exists, and that the defendant has not used the best practical means for abating such nuisance he shall be liable to a penalty, and on repeated conviction to a higher penalty. The model Bye-laws of the Local Government Board include among offensive trades those of blood-dyer, leather dresser, tanner, fat melter, glue maker, size maker, and gut scraper.

In only two Districts was any action taken with reference to offensive trades. In Crewe bye-laws had been previously adopted with respect to the trade of tripe boiler, and they were adopted in 1894 with respect to the trade of gut scraper. During the year consent was given in writing to the establishment or carrying on of the trade of tripe boiler by the Crewe Cattle Market Company, but they have not at present availed themselves of it. A gut scraper was summoned owing to the business having caused a nuisance, but the charge against him was withdrawn on his paying costs and undertaking not to continue his trade in the town after the end of 1894. In Wallasey an offensive trade (that of tripe boiler) was established without consent. The occupier of the premises was cautioned and, before proceedings could be taken, disappeared. The old potteries, where tallow melting and artificial manure making are carried on, have been under constant supervision. An effluvium nuisance complained of was found to be due to the way animal matter was dried, and the nuisance was abated. A second effluvium nuisance complained of was caused in the process of making fish manure, this was abated by mixing the fish refuse with cotton shoddy before adding acid.

**Food Adulteration.**—Mention is made in 3 Reports of action taken under the Sale of Food and Drugs Acts, by means of which adulteration is detected and punished. From Dukinfield it is reported that several cases of adulteration were proved and proceedings taken, but particulars are not given. At Stalybridge 10 samples of food (5 milk, 3 butter, 1 cheese and 1 lard) were sent to the Analyst and found pure. At Macclesfield Borough 40 samples were sent to the Analyst, of which 4 were found adulterated. In these cases the vendors were proceeded against.

**Recreation Grounds.**—There is very little to be recorded under this heading. At Cheadle and Gatley a field was lent for a common recreation ground during the summer, and was much used and appreciated by the children. Funds for a



recreation ground are likely to be partly provided. At Dukinfield a Committee has been appointed with the object of obtaining open spaces and play-grounds for the benefit of the people, more particularly the children.

**Meteorological Results.**—Four Medical Officers of Health furnish records on the meteorology of the year. It is remarkable that three of these records were taken at Bidston, Stalybridge and Crewe, representing the north-western and north-eastern extremities of the County, and a point in the south about equidistant from the other two points of observation. The fourth record is from Macclesfield, which is almost exactly midway between Stalybridge and Crewe. The results are not quite comparable. However they serve to show that the mean temperature was highest at Wallasey, rather high at Stalybridge and low at Crewe. The difference in the rainfall is yet more noticeable. In Stalybridge it was just over 40 inches and in Crewe barely 20 inches; in Wallasey it was nearly 28 inches and in Macclesfield 32 inches.

**Persons from Infected Ports.**—As there are extensive docks partly in the Wallasey District, it is important to note what is done when anyone hailing from an infected port comes to reside there. All persons landing in or coming to Wallasey out of ships from infected ports, are notified to the Clerk of the District Council and visited by the Inspector.

**Inspection of Canal Boats.**—Power is given under the Canal Boats Acts, 1877 and 1884, to Sanitary Authorities to cause inspections to be made of canal boats, and no canal boat can be used as a dwelling unless registered. The regulations for registration, fixing the number of persons allowed, promoting cleanliness, and preventing infectious diseases in such boats are (as required) the Local Government Board's.

Judging by the Reports there are 16 Districts in which the provisions of these Acts are in force—the Urban Districts of Macclesfield, Altrincham, Dukinfield, Lymm, Middlewich, Nantwich, Northwich, Wallasey and Winsford, and the Rural Districts of Altrincham, Congleton, Macclesfield, Nantwich, Northwich, Runcorn and Wirral. The number of boats inspected is not stated as regards Northwich Urban District and Middlewich and Winsford. The number of boats inspected in all the other Districts was 833. In 46 instances, according to the Reports, some breach of the regulations was observed, and notices were served on owners to conform to the regulations. In one instance only was a prosecution instituted—the offence charged was overcrowding, and the defendant was fined 19/6. Two boats were condemned as unfit for dwellings and removed from the register.

**Caravans.**—Caravans, tents, or sheds, when used as dwellings, should not be neglected. In Wallasey, during the

year, several caravans were inspected as to their condition and cleanliness, and inquiries were made as to the health of the inmates and their mode of disposing of refuse.

**Interments.**—Attention is again drawn to the fact that at Cheadle and Gatley there is need of additional land for interments. At Handforth, in the Stockport Rural District, H. M. Inspector held an inquiry in November into the condition of the church-yard, and stated that he should recommend the Secretary of State to advise its being closed forthwith, but that an additional piece of ground could, if obtainable, be added to the churchyard, and used for burials after it had been approved of. The Medical Officer of Health for Marple reports that the local burial grounds require improved drainage. The Medical Officer for Health for the Altrincham Rural District writes, with reference to the accommodation for burying at Knutsford, that it is a question which must at once engage the attention of the responsible Authority. “It has been known for years that fresh interments can hardly be made in either churchyard without the disturbance of human remains.”

FRANCIS VACHER,  
*County Medical Officer of Health.*

June 14th, 1895.



ADMINISTRATIVE COUNTY OF CHESTER.

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SUMMARY OF REPORTS  
OF  
District Medical Officers of Health  
FOR THE YEAR  
1894.



SUMMARY OF REPORTS  
OF  
DISTRICT MEDICAL OFFICERS OF HEALTH,  
For the Year 1894.

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**CONGLETON.**

**Municipal Borough.**

Medical Officer of Health—DR. P. M. DAVIDSON.

Population at Census, 1891—10744.

Estimated Population in middle of 1894—10744.

Area in acres—2572.

Birth rate per 1000 living—27·4.

Death-rate per 1000 living—15·0.

Death-rate from seven principal Zymotic diseases—0·6.

Deaths under one year to 1000 births—132.

During the year, 295 births were registered. The birth-rate for 1894 is just 1·0 below the mean birth-rate of the six years 1888-93. During the year, 162 deaths were registered. The death-rate for 1894 is probably the lowest ever recorded for the district, and 4·8 below the mean death-rate of the six years 1888-93. Of the births 150 were males and 145 females. Of the deaths 66 were males and 96 females. Thirty-nine deaths were of infants under one year old. The infant mortality, though very much lower than in 1893, is still higher than it ought to be.

**Zymotic Diseases.**—The following cases of zymotic disease came under the notice of the Medical Officer of Health:—13 scarlatina, 11 diphtheria, 1 typhoid fever, 4 measles, several cases of whooping-cough, and three or four of diarrhoea. The number of deaths from the principal zymotic diseases was 7, viz.:—5 diphtheria, 1 typhoid fever and 1 whooping-cough. The death-rate from these diseases was about half the mean death-rate of the six years of 1888-93.

**Scarlatina.**—The cases of this disease known to the Authority occurred sporadically, and were of a mild type as might be inferred from the circumstance that no death took place. However little outbreaks are often the forerunners of an epidemic, and having regard to past experience the Medical Officer of Health thinks an epidemic is probable before long.

**Diphtheria.**—There were, in all likelihood, more cases of diphtheria than the 11 brought to the knowledge of the Authority, but the disease was certainly not epidemic, and there was no instance of two cases following each other very

closely in the same neighbourhood, or of two occurring in the same house.

**Measles, Whooping-cough and Diarrhœa.**—The cases of whooping-cough were of a mild type, and the small outbreak of measles was too trifling to deserve notice. Diarrhœa, the mortality from which is usually high in Congleton, did not cause a single death in 1894, and only three or four cases were brought to the notice of the Authority. One of the main factors on which the prevalence of diarrhœa depends, a high temperature, was absent during the autumn months, and to this no doubt more than anything else escape from the disease is due.

**Influenza.**—Throughout the year the town was never free from influenza. The disease was epidemic from November, 1893, to February, 1894. There were in all 7 deaths in 1894, most of them having occurred in the first quarter.

**Removing and Deoderizing Excreta.**—The method of treating night-soil with acidulated peat dust, begun in 1893, continues to prove a great success, notwithstanding some difficulty experienced from time to time in procuring the dust sufficiently free from moisture. This difficulty is likely to be removed shortly. The Medical Officer of Health understands the Authority have decided to take the required supply of peat from the Congleton Moss, and prepare the dust themselves.

**Hospital provision needed.**—The question of providing a hospital for the isolation of infectious cases has been several times before the Authority in the course of the year, and the Medical Officer of Health hopes something will be definitely settled before long. It is agreed on all hands that the cottages used for small-pox cases some years ago, and retained up to the present for similar use if required, are quite unsuited for the purpose, and that they ought to be given up and a suitable hospital provided, where cases of any kind of infectious disease might be isolated. The Medical Officer of Health to the County Council, Dr. Vacher, paid a visit of inspection in December, and expressed the opinion that it would be better to build a hospital to accommodate about 10 patients than to acquire and alter any old building, which there was at one time some thought of doing.

The Medical Officer of Health has since seen Dr. Vacher's Report to the County Council on Isolation Hospitals throughout the County. In this it is recommended that Congleton should join with other districts in the Union in providing a hospital and it is suggested that Arclid would be a suitable site for the building. The Medical Officer thinks that the plan of combining is a good one, but it could only be with such places as Buglawton, Somerford, Astbury, Swettenham and Hulme Walfield. Sandbach has already made provision for that neighbourhood,

and from the report of a recent meeting of the Guardians, it would appear that the Sandbach people are not at all disposed to join with Congleton Borough. In any event the Medical Officer of Health could not agree that Arclid (six miles distant) would be a suitable site for a hospital for Congleton. It has been considered rather a hardship to have to send paupers that distance to the Workhouse, and a great risk when they were seriously ill. Then, apart from the matter of distance, the mere name of Arclid would render a hospital there for other than paupers useless, for no one would go it voluntarily, and the number the Authority could compel would be very small.

**Inspector's Report.**—The following particulars taken from the report furnished to the Medical Officer of Health by the Sanitary Inspector, shows that a large amount of good sanitary work was done during the year. Nine streets were sewered, 290 houses were redrained throughout and provided with trapped gullies, and 64 houses (not previously supplied) were provided with town's water. There were 1020 sanitary inspections made, 517 sanitary notices served, 130 ashpit-closets converted into pail-closets, 13 ashpit-closets and 12 pail-closets converted into water-closets, and a large number of houses whitewashed and cleansed. In ten cases the houses and bedding were stoved and disinfected. There were 240 tons of peat manure manufactured and sold, and 5282 loads of night soil removed. This does not represent the whole work superintended by the Inspector.

The Medical Officer of Health visited the whole district many times during the year.

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## CREWE.

### Municipal Borough.

Medical Officer of Health—DR. HERBERT JONES.

Population at Census, 1891—32783.

Estimated population in middle of 1894—35950.

Area in acres—2193.

Birth-rate per 1000 living—33·7.

Death-rate per 1000 living—14·4.

Death-rate from seven principal Zymotic diseases—1·5.

Deaths under one year to 1000 Births—143.

**The Area** of the Borough of Crewe when incorporated in 1877, was 1336 acres. By Local Government Board Order, No. P. 770, which was confirmed by Local Government Board Provisional Orders Confirmation (No. 11) Act, 1892, and came into operation on November 9th, 1892, the limits of the Borough were extended to include parts of the civil parishes of Coppenhall Church, Shavington-cum-Gresty, and Wistaston. The total area of the extended Borough is 2193 acres.



During 1894, the boundaries of the Wards were very materially altered; and the Ward in the centre of the town is now styled Central, instead of (as formerly) East Ward. The area of the Wards is as follows:—

|              |     |     |     |        |
|--------------|-----|-----|-----|--------|
| Central Ward | ... | ..  | 134 | acres. |
| West         | „   | ... | 676 | „      |
| North        | „   | ... | 942 | „      |
| South        | „   | ... | 441 | „      |

**Altitude and Subsoil.**—At Hightown the height above sea-level is 200 feet, at Nantwich Road it is 189 feet, at Market Hall it is 179 feet, in the valley it is 145 feet, and at the Sewage Farm, 125 feet. A subsoil of stiff clay extends over nearly the whole of the Borough. Very exceptionally (in some instances only for a few superficial yards) there is a sandy subsoil.

**Population**—The usual method adopted in estimating the population of a district is to assume that the increase in any one year has been equal to the mean yearly increase between the two last census enumerations, and when a town population increases steadily the result is fairly accurate. There is some difficulty in estimating the population of Crewe in this way, as the added portion was a part only of three parishes. Although the population of the area corresponding to Crewe as enlarged is given as 32,783 at the census of 1891, it is not possible to ascertain the population of the same area in 1881.

The Medical Officer of Health has, therefore, been compelled to resort to another method to ascertain the population of the town at Midsummer, 1894. The number of houses in the area corresponding to Crewe as enlarged, was at the date of the census, 6817, and the number of houses built between that date and Midsummer, 1894, was 530; thus there were 7347 houses in Crewe at the middle of 1894. Deducting from this number 157 empty houses, the number of inhabited houses is shewn to have been 7190. This multiplied by 5 (the average number of persons to a house at the date of the Census) equals 35,950, the estimated population of the Borough in 1894.

The population of the four Wards in 1894, is estimated as follows:—

|              |     |     |     |      |
|--------------|-----|-----|-----|------|
| Central Ward | ... | ... | ... | 9545 |
| West         | „   | ... | ... | 8710 |
| North        | „   | ... | ... | 8260 |
| South        | „   | ... | ... | 9435 |

**Houses and Rateable Value.**—As showing the small rateable value of a large proportion of the houses in Crewe, the following statement is interesting. It refers to the houses on

the rate-books on September 29th, 1894.

|                                      |       |   |                 |       |            |      |
|--------------------------------------|-------|---|-----------------|-------|------------|------|
| 145 houses rated under £5 per annum. |       |   |                 |       |            |      |
| 5678                                 | „     | „ | at £5 and under | £10   | per annum. |      |
| 1144                                 | „     | „ | „               | £10   | „          | £20  |
| 224                                  | „     | „ | „               | £20   | „          | £30  |
| 94                                   | „     | „ | „               | £30   | „          | £40  |
| 44                                   | „     | „ | „               | £40   | „          | £50  |
| 15                                   | „     | „ | „               | £50   | „          | £60  |
| 15                                   | „     | „ | „               | £60   | „          | £70  |
| 10                                   | „     | „ | „               | £70   | „          | £80  |
| 4                                    | „     | „ | „               | £80   | „          | £90  |
| 5                                    | „     | „ | „               | £90   | „          | £100 |
| 10                                   | „     | „ | „               | £100  | „          | £200 |
| 1                                    | house | „ | above           | £200. |            |      |

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7389

From the above it will be seen that 78 per cent. of the houses in Crewe are rated under £10 per annum, and 94 per cent. under £20 per annum.

**Births and Deaths.**—In 1894, the number of births registered was 1215 (629 males and 586 females), of which 4·4 were illegitimate. The birth-rate is lower than that in any year since 1890, and 1·0 lower than the mean birth-rate in the ten years 1884-93. In 1894, the number of deaths registered was 520 (272 males and 248 females). The death-rate is lower than any recorded since 1881, and 2·5 lower than the mean death-rate in the ten years 1884-93.

In the Central Ward the death-rate was 15·6 per 1000, in the West Ward it was 14·9, in the North Ward it was 15·4, and in the South Ward it was 11·9.

The monthly death-rate varied from 21·9 in January to 10·6 in October.

There were 8 deaths the causes of which were uncertified, *i.e.*, 1·5 per cent. of the whole number of deaths.

During the year the bodies of 34 still-born infants were brought to the cemetery for burial.

**Infantile Mortality.**—Of the whole number of deaths 174 were of infants under one year old. The infantile mortality in 1894 therefore compares favourably with that recorded in 1893, but it is still higher than the average of the ten years 1884-93. The Medical Officer of Health thinks that some of these deaths must be due to the neglect (thoughtless and ignorant, not wilful) of those in charge of young children; the thoughtlessness that does not appear to realise that infants should not be exposed to sudden changes of temperature and chilling draughts, or be given indigestible food, or be fed from an uncleanly feeding-bottle and tube. In this connection he remarks that inquiries as to how the children were fed who died during the year from diarrhœa or tabes mesenterica,

elicited that not one of them had been brought up by the breast.

The principal causes of death of the 174 infants in the mortality returns for 1894 were as follows: 46 lung diseases, 24 debility, 23 premature birth, 18 tabes mesenterica or tubercular disease, 16 convulsions, 8 whooping-cough and 6 diarrhœa. None of the mothers of the infants who died from premature birth were engaged as workers in any of the clothing factories in the town.

**Zymotic Mortality.**—The deaths in 1894 from zymotic diseases were as follows:—8 scarlatina, 2 diphtheria, 19 whooping-cough, 5 typhoid fever, 7 puerperal fever, 13 diarrhœa, 6 influenza, 2 erysipelas, 2 pyæmia and 1 syphilis. The death-rate from the principal zymotic diseases, in 1894, is lower than in the whole of England and Wales, and much lower than the average of recent years in Crewe.

The mean yearly death-rate in England and Wales during the twenty years 1874-93 was 21·0, that is 4 per 1000 higher than at Crewe; but during the same period the principal zymotic diseases death-rate was 2·6, just the same as at Crewe. In this twenty years the death-rates per million of small-pox, measles, scarlatina and typhoid fever were as follows:—

|                   | Small-pox. | Measles. | Scarlatina. | Typhoid Fever. |
|-------------------|------------|----------|-------------|----------------|
| England and Wales | 800 ...    | 400 ...  | 400 ...     | 180            |
| Crewe - - -       | 100 ...    | 450 ...  | 600 ...     | 260            |

This shows that the one disease (small-pox) against which the Authority at Crewe have taken strong measures, is the only one in respect of which the mortality compares favourably with all England. As for measles neither in Crewe nor in the rest of England are any special precautions taken to prevent its spread. In Crewe the mortality from scarlatina is 50 per cent. higher than in all England, and the mortality from typhoid fever is nearly 50 per cent. higher than in all England. Special precautions against the spread of both these diseases have been taken in a large number of districts all over the country, by notification and isolation, measures which at present the Authority at Crewe have not the advantage of.

**Notification.**—Cases of zymotic disease are not subject to compulsory notification in the Borough, yet no less than 252 cases came to the knowledge of the Medical Officer of Health, viz. :—20 measles, 105 scarlatina, 4 diphtheria, 50 whooping-cough, 18 typhoid fever, 7 puerperal fever, 42 diarrhœa, and 6 erysipelas.

There was no case of small-pox during the year. Only a very small number of children born in Crewe remain unvaccinated.

**Measles** was prevalent during the second and third quarters of 1894, though no deaths were directly attributed to it. The cases were chiefly confined to the infant department of a large elementary school. The Medical Officer of Health visited the school on several occasions, and by sending home those children who appeared to be sickening, and prohibiting the attendance of others from infected houses, no doubt something was done to prevent the spread of the disease. However as measles was epidemic in Crewe in 1892 and 1893—41 children dying therefrom in the two years—it is more than probable that the comparative immunity from the disease in 1894 was due to the fact that the majority of the children at susceptible ages were protected by a previous attack.

**Scarlatina** was present during the whole year. The 105 cases known to the Authority by no means represents all those which existed. Of the 8 who died 6 were under five years old. Most of the houses where cases occurred were disinfected, and during the last few months of the year clothing and other infected articles have been disinfected by steam. One death took place in Central Ward, 2 in West Ward, 2 in North Ward and 3 in South Ward.

In no instance was milk responsible for carrying the disease.

**Diphtheria.**—Very early in the year and during the last two months diphtheria appeared. The known cases were in Central Ward and West Ward. There was one death in February and one in December. Efforts were made to lessen the spread of the disease, as far as practicable by disinfection and the cleaning out of adjacent cesspools, &c. Through the agency of the Friendly Societies, the Medical Officer of Health heard of not a few cases of sore throat, and took measures, where practicable, to improve the sanitary surroundings of those affected.

**Whooping-cough**, during the first and last months of the year, was very prevalent in all parts of the town. There were 4 deaths in Central Ward, 3 in West Ward, 8 in North Ward and 4 in South Ward. In 1893, there were 15 deaths from this cause, and in 1892 23 deaths. The serious nature of whooping-cough does not appear to be realised by parents and those who have the care of children.

**Typhoid Fever.**—Though the death-rate from this disease was much lower than in 1893, it was prevalent in the town practically the whole year. Four cases and one death were recorded in Central Ward, 4 cases and 2 deaths in West Ward, 6 cases and 2 deaths in North Ward, and 4 cases in South Ward. Five of the cases in North Ward were in one street, where the houses are exceptionally open to the surrounding country. Each house in the street had a long garden with a privy at the further end. Two of the privies were compound

middens, 4 were cesspool privies, and the remaining 21 were provided with pails. All the pails were in a very filthy condition and the part of the closets occupied by the pails. A sanitary labourer was sent up to thoroughly clean the pails and closets, and the cesspools and compound privies were emptied and disinfected. The houses where the fever was had pails. After the cleansing of the privies in the entire street no further cases occurred.

The milk supply was not responsible for any cases of typhoid fever.

**Puerperal Fever** caused 7 deaths. As one case was the second which had occurred in the same house within two months, the rooms and out-buildings were thoroughly disinfected with perchloride solution and afterwards limewashed and renovated. Three other cases having been attended by the same midwife nurse, the Medical Officer of Health advised her to discontinue her calling for a fortnight, and gave her instructions as to personal disinfection. No deaths from this cause have been recorded since.

**Diarrhœa**—The notifications of cases of sickness received week by week from the Secretaries of Friendly Societies were of great service in enabling the Medical Officer of Health to deal with cases of summer diarrhœa. When cases of diarrhœa in the adult were reported, insanitary conditions on the premises were sought for and remedied. In all 10 cases and 2 deaths were recorded in Central Ward, 15 cases and 4 deaths in West Ward, 7 cases and 3 deaths in North Ward, and 10 cases and 4 deaths in South Ward. All the deaths were among children under five years old.

Few diseases are more likely to be influenced by bad sanitary arrangements than diarrhœa. The Medical Officer of Health finds that the mortality from diarrhœa in houses provided with W.C.'s is less than half the mortality in houses provided with privies of some kind.

**Influenza**.—At the end of 1893 this disease was found in all parts of the town, and its prevalence continued during the first two months of 1894, with a resultant death-roll of 6 persons, 4 of whom were over 60 years of age. Two deaths were in Central Ward, 2 in North Ward, and 2 in South Ward.

**Pneumonia** caused 45 deaths in 1894, in 1893 it caused 96 deaths. Of the 45 who died 30 were children under five years old. Of the 63 who died from bronchitis in 1894, about the same proportion were children under five years old.

**Phthisis** caused 35 deaths in 1894, giving a death-rate of 1.0 per 1000 living. Twenty-five of those who died were between 20 and 50 years of age. Is all that can be, done to lessen the incidence of this malady? Endeavours should be made to instil into the minds of the inhabitants generally that

consumption is infectious and that measures should be taken to check its spread, at the same time the importance of healthy surroundings should be insisted on.

**Inquests.**—There were 30 inquests held during 1894 (15 males and 15 females) of which 9 were on children under 1 year old. The mean annual number of inquests in the ten years, 1884—93, was 24·2.

**Isolation Hospital.**—This hospital, being reserved for small-pox cases only, has not been in use during the year. It was periodically visited by the Medical Officer of Health and the Inspector ; and can, if required, be got ready at a few hours notice. All the rooms and passages were white-washed in December.

**Proposed New Hospital.**—In the last Annual Report it was stated that a Sub Committee had under consideration the provision of a hospital for the isolation of infectious diseases other than small-pox. On February 27th, this Sub-Committee reported to the Health Committee that they considered it desirable to erect such a hospital, and the Medical Officer of Health was instructed to prepare an approximate estimate of cost. The estimate (£4000 for a hospital of 20 beds) was in due course presented. At a special meeting of the Health Committee, held on April 3rd, it was resolved “That in the opinion of this Committee, it is desirable to erect an Isolation Hospital for the Borough of Crewe—a Sub-Committee to be appointed to consider the matter, and to report to the Health Committee thereon.” This was confirmed by the Council on May 2nd. A Sub-Committee of seven members of the Health Committee having been appointed, it met on May 29th, and appointed five of its members to inspect the neighbourhood, with a view of obtaining a suitable site. The Sub-Committee held many meetings and had under consideration six sites, varying in extent from 3 acres to 30, and in price from £80 to £330 per acre. Acting on the recommendation of the Health Committee, the General Purposes Committee, on October 11th, resolved “That this Committee recommend the Council to accept the offer of the representatives of the Gresty Estate to sell the plot of land marked G on the plan submitted to this meeting, containing five acres, at £150 per acre.” This was confirmed by the Council on November 9th. The plot of land referred to is situated to the north of Middlewich Street, is very accessible from all parts of the town, stands in an elevated position (182 feet above sea-level), and has the open country all round it. A main sewer passes within 50 yards of the land. On November 27th it was resolved by the Public Health Committee to invite competitive plans for the erection of an Isolation Hospital to accommodate 30 patients, with administrative departments, laundry and disinfecting arrangements. This was confirmed by the Council on December 5th. On December 13th

the General Purposes Committee resolved that two premiums should be paid to the architects sending in the two designs adjudged respectively of the highest and second highest merit. Dr. F. S. Granger, M.A., was appointed assessor, to assist the Committee, and on December 24th detailed instructions were sent to the architects who responded to the advertisement relating to the competition.

**Disinfectants.**—About seven tons of disinfectants have been used during the year. Carbolic powder (containing 15 per cent. of carbolic acid) and izal powder are the disinfectants employed. The night-soil men are instructed to use it freely. The inhabitants generally are supplied gratis with packets of disinfectants on applying at the Inspector's office. In this way about 250 packets were distributed in 1894.

**New Steam Disinfector.**—At the end of 1893, the Corporation decided to purchase a steam disinfector, and later the Local Government Board sanctioned the borrowing of £300 for that purpose. The apparatus chosen was Mr. Washington Lyon's, manufactured by Messrs. Manlove, Alliott and Fryer, of Nottingham. It is of medium size, and cost £198. The other expenses entailed, including building, amounted to £96. The new disinfector was erected in October on land adjoining the sewage pumping station, whence steam is obtained. It has been in use since October 19th. At the end of the year the Medical Officer of Health wrote to neighbouring Sanitary Authorities, offering to disinfect articles for them should occasion arise.

**Infectious Disease (Notification) Act, 1889.**—The Medical Officer of Health thinks that the time has arrived when this Act should be adopted. In the 22nd Annual Report of the Local Government Board, published in 1894, it is stated that of the 141 provincial towns having populations of more than 25,000, according to the last Census, all but 10 have adopted the notification system. Since the publication of this Report, 3 of the 10 towns have adopted the Act, so that Crewe is now one of 7 towns of considerable size without compulsory notification. It is only fair to recall the fact that one of the very earliest acts of the Crewe Corporation was to adopt a system of voluntary notification. As long ago as 1877, a fee of 2/6 was paid to each practitioner in the town who notified a case of infectious disease. However all the medical men in the town did not consent to notify, and after little more than a year's trial, the plan of paying for voluntary notification was not continued.

**Notification of Sickness by Friendly Societies.**—The Medical Officer of Health, having long felt that sufficient use was not made of the returns of sickness obtained by Friendly Societies, with the help of the Mayor, called a meeting of the

Secretaries of the various Friendly Societies of the town. At this meeting, which took place on April 16th, the Mayor asked that lists should be sent to the Medical Officer of Health weekly, giving the name, address and illness of all members placed on the sick list. The secretaries unanimously resolved to recommend the Societies they represented to do as requested, and with one exception they agreed to do so. Accordingly since the end of April, these sick lists have been received week by week. The cases are then entered under their respective street headings in a book kept for the purpose—a task that rarely occupies more than an hour a week. Apart from the immediate value of this system of notification in drawing attention to conditions which need rectifying, it will be of no small service as a register of the house history of the town. One fourth of the members invalidated suffered from accidents.

**Dairies, Cow-sheds, and Milk-shops.**—At the end of the year these were all inspected by the Medical Officer of health and Inspector. In several instances the amount of air-space provided for each cow was found to be too little. On a few premises the most primitive notions as regards cleanliness appeared to prevail.

**Bakehouses.**—There are 24 bakehouses in the Borough. Seven are in the Central Ward, 5 in the West Ward, 8 in the North Ward and 4 in the South Ward. Most of these are kept in a fairly clean condition, but there is some laxness in carrying out the requirement that the walls and ceilings of bakehouses, when lime-washed, are to be lime-washed every six months.

**Unsound Meat, &c.**—Two carcasses, one of a cow and the other of a pig, were condemned during the year; but as attention was first drawn to them by the owners no action was taken in the matter. On June 25th, two boxes of fish, on sale behind the Market Hall, were seized and condemned, the owner offering very considerable opposition. On July 10th he was fined £3 and costs or a month's hard labour, and 5/- and costs or seven days hard labour for the obstruction—in all £5 2s. 6d. He was allowed a month to pay the fine and at the expiration of that time another month, but eventually elected to undergo the term of imprisonment.

Most of the meat which comes to the market is of excellent quality, but there is some very indifferent, and on several occasions the vendors have been cautioned.

**Slaughter-houses.**—There are 14 registered slaughter-houses in the Borough. Six are in the Central Ward, 2 in the West Ward, 1 in the North Ward and 5 in the South Ward. These have been periodically visited, and with one or two exceptions all the butchers seem anxious to carry out the bye-laws. On April 3rd two, who had been repeatedly warned, were summoned for not providing covers for their offal-tins.



The cases were adjourned for a fortnight, during which time the covers were provided, and the costs having been paid by the defendants the summons was in each instance withdrawn. It seems a great pity that the abattoirs at the Cattle Market are not more used, especially for the slaughter of animals purchased at the Cattle Market.

**Offensive Trades.**—Bye-laws were adopted by the Corporation in 1883, with respect to the trade of tripe-boiler, and in 1894, with respect to the trade of gut-scraper. On July 24th, 1894, the Health Committee resolved to recommend the Council to consent in writing to the establishment or carrying on of the trade of a tripe-boiler, by the Crewe Cattle Market Company, at their premises in Gresty road, a certain defined area to be prescribed. The resolution was confirmed by the Council on August 1st, but the Company did not avail themselves of it. On October 30th a gut-scraper was brought before the Magistrates for making default in abating a nuisance. The case was adjourned to allow the defendant time to obtain premises where he could carry on his trade without offence to his neighbours, and subsequently withdrawn on defendant paying the costs and undertaking not to continue his trade in the town after the end of the year 1894.

**Factories and Workshops.**—Including the L. & N. W. Ry. Co.'s works, there are 59 factories and workshops in the Borough, all of which have been visited during the year. The workshops have come more especially under the care of the Authority, and the Medical Officer of Health has therefore caused a register to be kept of them. In this are entered the following particulars:—(1) Name and address of owner or agent, and name of occupier. (2) Description and position of workshop. (3) Purpose for which used. (4) Method of ventilation. (5) Method of heating. (6) Sanitary accommodation. (7) Measurement of workshop. (8) Number of persons workshop will accommodate during day-time. (9) Number of persons workshop will accommodate during overtime. (10) Number of gas-burners.

**Common Lodging-houses.**—There are 6 registered common lodging-houses in the Borough—3 in the Central Ward, and 1 in each of the other Wards. They can accommodate in the aggregate 105 lodgers. Even with the most careful and constant supervision it is impossible to keep these houses as they should be. With one exception, they were not built for the purpose for which they are now used, and the sum charged per night leaves no margin for the keepers to carry out more than the very barest requirements. No outbreak of disease has been directly attributable to these houses, but other towns have been put to considerable expense in stamping out epidemic disease started in houses of a similar kind. Crewe may one day be rudely awakened to the insecurity of its position, unless steps are

taken to remedy it. The steps suggested are the erection and management by the Corporation of a lodging-house of its own. Part III of the Housing of the Working Classes Act, 1890, gives distinct powers and great facilities for doing this. Whatever differences of opinion may exist as to the desirability of the Corporation entering into competition with private enterprise, the provision of a Municipal lodging-house stands in an exceptional position, for the very special reason that a common lodging-house can only be carried on at a profit, where such a small sum as fourpence per night is charged, at the expense of the health of the occupants; but the Corporation are not anxious to make money by the undertaking, and are, moreover, exceptionally well able to obtain capital in the first instance, on moderate terms.

**Houses Let in Lodgings.**—The Model Bye-Laws relating to houses let in lodgings were adopted in 1877.

**Adoptive Acts.**—The Public Health Acts Amendment Act, 1890, and the Infectious Disease (Prevention) Act, 1890, have been adopted by the Corporation.

**House-to-House Inspection.**—During May, June, and July, the Medical Officer of Health, accompanied by the Sanitary Inspector, made a complete house-to-house examination, noting especially the sanitary arrangements. Particulars were subsequently entered up, under their respective street headings, in a "house-ledger." It is possible, therefore, to ascertain from this book the sanitary arrangements of every house in the Borough.

**Examination of Houses.**—In the Report for 1893, it was stated that public notice had been given to the effect that any person might have his house examined as to its sanitary condition, free of charge. This step was criticised on two grounds—first, that it might lead to friction with local Surveyors, who would resent the sanitary department undertaking work for nothing which they would expect to be paid for; and secondly, that a large amount of work might be thrown on the officials, which could only be accomplished at the expense of neglecting more important duties. No doubt in some towns these objections would be found to operate, but in a town in which 78 per cent. of the houses are rated under £10 per annum they can hardly apply. The number of houses thus examined in 1894 was less than a score, and the Medical Officer of Health is quite sure that not one of those who asked for the examination would have been able, even if willing, to pay a fee to a Surveyor for the inspection.

**Water-supply.**—The Medical Officer of Health has made regular monthly analyses of the water supplied to the town from the Artesian wells at Whitmore, by the L. & N. W. Ry. Co., and found it of uniformly good quality, varying only

a few degrees in hardness. Water is supplied by meter to the Corporation, the Corporation distributing it, and charging a water-rate to consumers. Some 700 houses owned by the Ry. Co. are supplied direct.

**School Accommodation.**—There is school accommodation in the Borough for 6716 children. The number is less than that given in the last Report, in consequence of the Education Department having insisted upon the provision of cloak-rooms, for which, in four schools, class-rooms had to be taken. The accommodation is apportioned to the Wards as follows—

|              |     |      | Per cent of<br>Population. |
|--------------|-----|------|----------------------------|
| Central Ward | ... | 2657 | ... 27                     |
| West „       | ... | 1663 | ... 19                     |
| North „      | ... | 1118 | ... 14                     |
| South „      | ... | 1278 | ... 13                     |

During the year the Medical Officer of Health visited all the schools. Upon one occasion he found very serious overcrowding. The sanitary arrangements at all the schools leave very little to be desired. With four exceptions automatic-flushing latrines are used, and are found to act remarkably well. One of the schools excepted now has ordinary wash-down water-closets, which the managers were induced to put up to replace Rochdale pails.

In one school an effluvium nuisance led to a defect being discovered in the drain. Owing to this defect sewer gas had been delivered into the school-room.

The Authority is indebted to the School Attendance Officer and the head teachers for their assistance in reporting cases of illness coming under their notice.

It would be an advantage if open spaces could be reserved as play grounds for the children, who are usually found playing in the streets, or worse still, at the backs of houses in the midst of evil-smelling ashpits.

**Ventilation of Sewers.**—Frequent complaints having been made of foul smells coming from man-hole ventilators in the middle of the street and from the gulleys at the sides, the Borough Surveyor and Medical Officer of Health were instructed to report upon the matter. The Reports sent in, containing very similar suggestions, were considered by a Joint Subcommittee of the Works and Health Committees, and the following recommendations were made and accepted by the Council:—

(1st) To deal first with all the offensive manholes and gulleys, filling up all the inverts of such to the level of the sewer.

(2nd) If the offensiveness still continues, to take into consideration the surrounding property as regards slaughter-houses, &c., and take the temperature of the sewage in successive

manholes, in order to ascertain if any steam or heated water is finding its way into the sewer.

(3rd) If negative results follow, to place an upcast shaft reasonably near the offending manhole.

(4th) If this does not remedy the nuisance, to have the road sewers trapped at their entrance into the main sewer.

It was further resolved, in view of the 4th recommendation, that inquiries be made as to the feasibility of erecting one or two furnace shafts along the line of the southern outfall sewer.

**Ashpits and Refuse removal.**—This matter was rather fully dealt with in the Report for 1893. The Medical Officer of Health has little to add. From March 25th, 1894, the Farm Committee consented to reduce the high charge made to the Sanitary Department for horse hire. The present charge is 21/- per week for each horse. Some little saving has been effected by getting neighbouring farmers to fetch nightsoil, though this has at times caused great irregularity in the work, for if the farmer fails to keep his appointment on a certain night several streets may have their privies neglected. That the work of refuse removal was carried out satisfactorily in 1894, is shown by the following comparison. In 1893 on an average 20 notices were sent in daily requiring ashpits to be emptied, in 1894 this average had dropped to 15. Again, the average number of orders left on the book at the end of each month was 45 in 1893, and only 14 in 1894. The cost of refuse removal has been reduced from  $16\frac{8}{10}$  pence in 1892 and  $16\frac{3}{10}$  pence in 1893, to  $14\frac{6}{10}$  pence in 1894.

From December 25th all the houses in the town have been dealt with by the Sanitary Department. Up to that date 102 houses in the South Ward had their ashpits emptied by a Contractor.

In November, one of the sanitary labourers who is engaged on nightwork was attacked with typhoid fever. As it was probable that he had contracted the disease in the discharge of his work, he was paid his ordinary wages during his illness. He is now convalescent.

A very large quantity of dry ashes have been tipped into a sandpit on the south side of the sewage farm. The Medical Officer of Health considers it undesirable to continue using this pit as a tip, especially in view of its proximity to the Queen's Park and the new Cottage Hospital. The most rational and economical method of dealing with dry refuse is to burn it, and to put to some useful purpose the steam power it may be made to produce.

One of the boilers at the pumping station on the sewage farm has been fitted with Meldrum's steam jet blower and closed furnace, so that the dry refuse of the town may be used for fuel instead of slack. During the last two weeks of November the Borough Surveyor made some very exhaustive trials,

and reported on December 10th to the Farm Committee that even with the extra cost of employing an additional stoker very considerable saving would accrue if these blowers are used. Further trials will be undertaken.

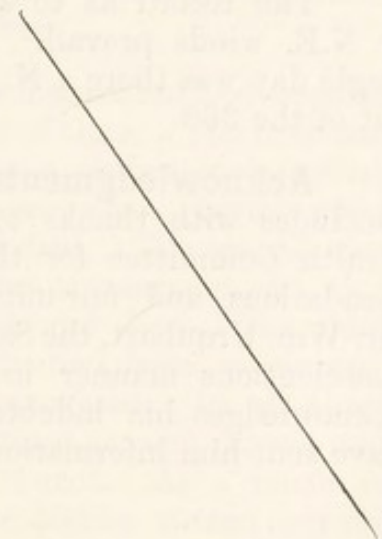
**Re-construction of Privies and Ashpits.**—This question appears to have been before the governing body of the town for many years. A house is reported as being without sufficient water-closet, privy or ashpit, and the Authority (under the 36th section of the Public Health Act, 1875) requires the owner to provide sufficient water-closet, privy or ashpit. The Medical Officer of Health felt that property owners were hardly used in being thus put to the expense of re-building portions of their property every ten or twelve years. Early in the year, therefore, he determined to see personally every case before the Inspector reported under the 36th section of the Public Health Act. After making the necessary inspections he was convinced that however hard it might be on the owner to have to spend money on his property, it was very much harder on the tenant to be obliged to live under such insanitary conditions as he found to exist. After thinking much upon the subject he concluded that the cause of the difficulty was the privy-system, which though it might have been proper when there were less than 1000 houses in the town, was most improper now that there were over 7000 houses in the town. "There can be no doubt," he writes, "in the mind of anyone who will consider the question in all its bearings, that the remedy for this constant and apparently never-ending worrying of property owners lies in the substitution of the under-ground water-carriage for the present above-ground cart-carriage system." The latter is not only more insanitary but much more costly both to property owners and the Corporation. Statistics are adduced to show that the local mortality from diarrhoea is more than twice as high in houses provided with privies as it is in houses provided with water-closets. As to cost, the original cost of the privy is less, but the annual charges for renewing and repairing must be added to this. Comparing the cost of emptying privies with the cost of flushing closets, it is stated that the present cost of emptying the privies of 1000 houses is £375 yearly, whereas the cost of supplying 1000 houses having wash-down closets with 20 gallons of water each, daily, at 9d. per 1000 gallons, would be £274 yearly, while if the 1000 houses were fitted with waste-water closets there would be no charge entailed for water. The additional expense for pumping at the sewage farm, owing to the increased quantity of sewage, would be more than met by the saving in the present cost of distributing the night-soil on the land. Indeed, by the adoption of waste-water closets the amount added to the sewage would be so small as to be almost inappreciable. If large sums of money had to be expended in

constructing main drains or in establishing outfall sewage works, there would be every reason to hesitate before adopting the water-carriage system generally. But at Crewe a capital sum of over £55,000 has already been spent upon the sewage farm and main drainage works, it is therefore not unreasonable to urge that excremental matter should be discharged into the sewers and not carted through the streets.

The Medical Officer of Health does not plead for an immediate wholesale conversion of all the privies in the town into water-closets, but merely that where a privy is reported to the Health Committee as requiring re-construction it shall be constructed as a washdown closet or a waste-water closet, unless there are sufficient reasons to the contrary.

There appear to be but two objections that can be brought against water-closets—the freezing of the supply pipe in the winter, and the stopping up of the discharge drain owing to articles being carelessly thrown down the closet. The liability of the water pipes to freeze does not apply to waste-water closets, and in other closets it may be lessened or abolished with care. Besides if a water-closet supply is frozen, it is easy to pour a bucketful of water down the closet, but if a privy-pail is frozen to the ground and cannot be emptied the remedy is not so easily found. As for the choking of the drain by careless tenants, this is by no means insuperable. The Medical Officer of Health thinks that the amount of blocking of closets from this cause is somewhat exaggerated. He proposes to print the 16th Section of the Public Health Acts Amendment Act and supply copies to owners to fix up inside water-closets on their property.

The Medical Officer of Health gives further particulars as regards waste-water closets, and illustrates his remarks with diagrams representing the closet-apparatus supplied by various makers. He advises his Authority that it would be wise to accept any design coming up to their standard of sanitary requirements, leaving the choice to individual property owners.



**Meteorology.**—The following table shows the results of observations made by Mr. George Latimer, Curator of the Queen's Park, Crewe.

| 1894.         | Rainfall<br>in<br>Inches. | Number<br>of days<br>in which<br>rain fell. | Mean Temperature.         |                           |                            |                            |
|---------------|---------------------------|---|---------------------------|---------------------------|----------------------------|----------------------------|
|               |                           |   | Maxi-<br>mum in<br>Shade. | Mini-<br>mum in<br>Shade. | 1 foot<br>below<br>ground. | 4 feet<br>below<br>ground. |
| January ...   | 1.47                      | 20  | 36.6                      | 25.7                      | 39.3                       | 43.1                       |
| February...   | 1.46                      | 16  | 40.4                      | 25.9                      | 39.6                       | 42.9                       |
| March ...     | .78                       | 10  | 48.4                      | 26.7                      | 40.9                       | 43.8                       |
| April ...     | .56                       | 14  | 58.2                      | 34.2                      | 49.1                       | 45.7                       |
| May ...       | 2.45                      | 14  | 55.7                      | 33.4                      | 49.6                       | 48.4                       |
| June ...      | 2.48                      | 17  | 64.4                      | 41.9                      | 55.7                       | 51.3                       |
| July ...      | 1.73                      | 15  | 68.2                      | 45.6                      | 60.1                       | 55.6                       |
| August ...    | 2.68                      | 18  | 64.0                      | 45.7                      | 58.7                       | 55.7                       |
| September ... | .68                       | 4   | 58.0                      | 37.7                      | 55.6                       | 55.7                       |
| October ...   | 2.79                      | 12  | 51.3                      | 35.6                      | 50.0                       | 53.5                       |
| November ...  | 1.49                      | 14  | 50.6                      | 30.7                      | 40.6                       | 50.0                       |
| December ...  | 1.42                      | 15  | 45.3                      | 29.3                      | 41.8                       | 46.9                       |

The entire rainfall of 1894, in Crewe, was therefore 19.99 inches; In 1893 it was 16.37 inches. In 1894 there were 22 more rainy days than in 1893. The largest daily rainfalls in 1894 were recorded on August 26th and October 27th, on each of which days three quarters of an inch fell. From May 28th to June 11th (15 days) it rained every day. The longest period without rain was from August 27th to September 22nd (27 days).

The highest temperature in the shade (79 degrees F.) was recorded on August 2nd, and the lowest (3 degrees F.) was recorded on January 6th.

The record as to wind shows how very little the N., E., or N.E. winds prevail. For seven months in the year on no single day was there a N. wind, and an E. wind only on 33 days out of the 365.

**Acknowledgments.**—The Medical Officer of Health concludes with thanks to the Chairmen and Members of the Health Committee for their readiness in receiving his recommendations and fair-mindedness in discussing them, and to Mr. Wm. Urquhart, the Sanitary Inspector, for the thorough and conscientious manner in which he does his work. He also acknowledges his indebtedness to many correspondents who have sent him information which has frequently been valuable.

## HYDE.

## Municipal Borough.

Medical Officer of Health —DR. G. W. SIDEBOTHAM.

Population at Census, 1891—30670.

Estimated population in middle of 1894—31369.

Area in acres—3074.

Birth-rate per 1000 living—30·4.

Death-rate per 1000 living—16·4.

Death-rate from seven principal Zymotic diseases—0·9.

Deaths under one year to 1000 births—155.

The constituent parts of this District are as follows :—

|  | Area in Acres. | Population at Census. |
|--|----------------|-----------------------|
| Hyde (including Knott Fold and part of Gee Cross) ... .. | 897            | 20354                 |
| Part of Werneth (including part of Gee Cross) ... ..     | 662            | 1575                  |
| Godley ... ..  | 645            | 1408                  |
| Newton ... ..  | 870            | 7333                  |

In 1894, the number of births registered was 954, and the number of deaths registered (excluding 4 deaths of persons not belonging to Hyde, which took place in the Infectious Hospital) was 515. Of the deaths 148 were of infants under one year old, and 93 were of persons 65 years old and upwards. The seven principal zymotic diseases account for 30 deaths only, Thus the general death-rate was low, and the zymotic death-rate very low.

**Notification of Infectious Disease.**—There were 177 cases of infectious disease notified during the year, viz. :—3 small-pox, 87 scarlatina, 27 diphtheria, 7 croup, 19 typhoid fever, 2 puerperal fever, and 32 erysipelas. Of these 60 were removed to the Hospital, viz. :—3 small-pox, 51 scarlatina, 1 diphtheria, 2 croup, and 3 typhoid fever.

**Small-pox.**—The 3 cases of this disease notified were all removed to hospital with very little loss of time. The first case occurred in January. The patient was a professional football player, and probably contracted the disease when playing away from home. He was unvaccinated, and died. The second case was notified in June. This case was that of a servant girl at a public-house; she was also unvaccinated, and died. The third case was a man at a lodging-house. He had been vaccinated, and after a long and severe attack he recovered. In all these cases most careful disinfection was practised at each house, and the infected clothes and bedding were burnt. As a result of these precautions, in no instance did the disease spread beyond the initial case.



**Scarlatina.**—Of the 87 cases notified 51 were removed to hospital. There was only one death from this disease. The child who died lived in Scholes street, and was not removed to hospital. A sister of this child, notified on the same day, was removed and recovered. There had been a case in the house a few weeks before, which was not removed. Thus in 1894, an increased proportion of the cases notified was insolated in hospital. The Medical Officer of Health would like to see every case properly isolated. Especially he wishes that parents would realise the great importance of helping to arrest the spread of scarlatina by at once sending to hospital the initial cases of an outbreak.

**Diphtheria.**—Of the 27 cases notified 2 proved fatal. Only one of the 27 cases was removed to the hospital. This case was discharged well on August 22nd. More cases could be readily treated in hospital if there were sufficient accommodation. In no case that the Medical Officer of Health heard of was the new antitoxin treatment made use of.

**Typhoid Fever.**—Of the 19 notified 3 proved fatal. The 3 cases removed to hospital were discharged quite well, but their recoveries were slow.

**Measles** was not very prevalent. As this disease is not notified, it is impossible to say how many were affected—there was but one death.

**Whooping-cough** was epidemic at the close of 1893, and the disease continued very prevalent in January and February, 1894. During these two months 10 deaths were due to whooping-cough. There were no other deaths from this disease during the year. The number of cases is not known.

**Diarrhœa.**—Only 10 deaths were ascribed to this cause. This compares very favourably with the number recorded in 1893, (65). Whether the improvement is due to climatic influence, or in some measure to sanitary improvements, another season or two will show.

The Medical Officer of Health points out, for the guidance of mothers and nurses, that too much care cannot be exercised in preparing milk food for all bottle-fed infants, so as to exclude germs which are abundant in the neighbourhood of decomposing organic matter and faulty drains, and flourish readily in milk exposed to contaminated atmosphere. Milk thus tainted is prone to set up diarrhœa in human beings, and especially in the very young. If children of weak digestion were more commonly fed on sterilized milk, many would be saved from this dreadful scourge of infant life.

**Puerperal Fever**, though only two cases were notified, was the certified cause of 3 deaths. The Medical Officer of Health says "it would be a good plan if all midwives and nurses attending such cases could be persuaded in every case

to undergo quarantine, and to have their clothes and be themselves thoroughly disinfected at the hospital before undertaking any further confinements."

**Acute Lung-diseases.**—The number of deaths from these diseases (105) in 1894, compares well with the number of deaths (176) in 1893.. Probably this is accounted for by the fact that epidemic influenza was not severe in 1894, as it unfortunately was in 1893.

**Phthisis** appears to occasion about the same number of deaths annually. In 1894 there were 50 deaths ascribed to this cause, in 1893 there were 49, in 1892 there were 47.

As it so often happens that young married persons die of phthisis, it is much to be desired that people with a phthisical tendency should be prevented from marrying. Certainly the parents of such invalids should use every means to dissuade them from marrying, instead of (as is sometimes done) encouraging them under the erroneous impression that better health will be the result of such a step.

**Isolation Hospital.**—This Institution has been in full work during the whole of 1894. There were 112 cases treated: exactly the same number as in 1893.

Particulars of the cases treated are given in the following table:—

| 1894.                 | Cases Received. |             |             |        |                |        | Deaths.    |             |             |        |                |        |
|-----------------------|-----------------|-------------|-------------|--------|----------------|--------|------------|-------------|-------------|--------|----------------|--------|
|                       | Small-pox.      | Scarlatina. | Diphtheria. | Croup. | Typhoid Fever. | Total. | Small-pox. | Scarlatina. | Diphtheria. | Croup. | Typhoid Fever. | Total. |
| Borough of Hyde ...   | 3               | 51          | 1           | 2      | 3              | 60     | 2          | ...         | ...         | 1      | ...            | 3      |
| Outside Districts ... | 24              | 22          | ...         | ...    | 6              | 52     | 2          | ...         | ...         | ...    | 2              | 4      |
| <b>TOTAL ...</b>      | 27              | 73          | 1           | 2      | 9              | 112    | 4          | ...         | ...         | 1      | 2              | 7      |

Of the 4 fatal cases of small-pox, 3 were certainly unvaccinated, and the fourth had one vaccination cicatrix only. In all these cases the disease was confluent, and in all death took place a very few days after admission. The little child who died of croup was almost moribund when admitted. It was considered that if the patient could have the good nursing it would get at the hospital it might have a chance of recovery, but the case was too severe for successful treatment. The two fatal cases of typhoid fever (from Lancashire) were hardly fit for removal. The patients on arrival appeared to have been

suffering from the complaint for some time. If a typhoid fever case is to be removed at all, the removal should be accomplished early in the progress of the disease, for there is much risk of inducing fatal peritonitis or perforation if the removal is delayed till the later stages are reached.

All the scarlatina cases made good recoveries. There was not a single case of the malignant form of the disease, and no cases were left with kidney mischief as a sequel. Although 58·6 per cent. of the cases of scarlatina reported were removed to hospital, a larger proportion ought to be thus dealt with if the spread of the disease is to be prevented. The Medical Officer of Health thinks every case should be removed, and in order to insure there being enough room in the wards, he would discourage as much as possible the sending in of typhoid fever cases, which can generally be well enough looked after at home. By this means as much room as possible would be available for scarlatina, and the risk of diseases crossing from one ward to another would be lessened.

The alteration in the housekeeping arrangement has worked very well indeed. The new arrangement allows much greater latitude and variety in the dietary, both of patients and staff, and the Committee may be well satisfied with the changes they have sanctioned in this direction, as tending towards increased efficiency and greater comfort. A still further saving may be looked for when the kitchen garden is in full working order.

**Hospital Laundry needed.**—The want of a laundry is very much felt, particularly in wet weather, when all the clothes have to be dried in the kitchen, and it is hoped that the Corporation will be able to include provision for this in the next estimates.

**Infant Mortality.**—The records of 1894 compare favourably in this respect with those of previous years. The proportion of deaths of infants under one year old to the number of births was, in 1894, 155 per 1000. In 1893, the proportion was very high, 235 per 1000. In crowded manufacturing towns the infant mortality will always be high, when unweaned children are put out to nurse, and thus deprived of their mothers' care.

There being so little autumn diarrhœa is almost sufficient in itself to account for the reduced death-rate among very young children.

**Water-supply.**—The important improvement in the water-supply of the Borough, completed in 1893, may not unreasonably be held to have had at least some share in bringing about the greatly diminished zymotic mortality. The more frequent and systematic removal of decomposing and putrid organic matter from the ashpits and its incineration, has doubtless also assisted in diminishing the zymotic mortality.

If this saving in human life is maintained in the future the extra cost of Manchester water will be very well spent money.

No doubt the question of utilising the water which was formerly collected for the reservoirs, and is now running to waste, must frequently arise. But, to whatever use this may be put, it will not be wise or safe to employ it for drinking purposes, so long at any rate, as the source of supply is liable to contamination with organic impurities. The latest analysis shows that there is such pollution.

If this water could be turned into the sewers for flushing purposes, from time to time during hot and dry weather (particularly into those sewers having little fall, and hence liable to become sewers of deposit) a good deal of the nuisance frequently complained of from sewer man-holes would be prevented. At the same time one of the contributory causes of diarrhœa among children would be diminished.

**Ashpits, &c.**—As the ashpit emptying is now undertaken by the Corporation, another predisposing cause of diarrhœa and some other diseases is to a great extent removed. Still much remains to be done in the way of ashpit improvement, for there are many wet ashpits in the town. Most of these are in the poorer quarters where there is a tendency to overcrowding. The wet ashpits are near the back doors and windows of the houses. They are not water-tight and the bottoms are below the ground level, so that much of their contents soaks into the surrounding ground. Such receptacles are a constant menace to health. In this respect probably the state of Charles Street, inhabited largely by very poor people, is about as bad as any in the town.

**An old Common Lodging-house.**—In Charles Street is a large common lodging-house, which has been in existence for many years. Although the present occupier conducts the house in an admirable manner, so great are its structural defects that the Medical Officer of Health considers it most unsuited for a common lodging-house. It ought never to have been licensed, as it has practically no yard, no clothes-drying ground, and all its rooms are low and dark.

**Alterations in Schools.**—Alterations in many of the public elementary schools have been commenced during the year in accordance with the requirements of the Board of Education. It is hoped that, when these are completed the sanitary state and general comfort of the schools will be much improved.

**Treatment of Persons bitten by Rabid Animals.**—Several isolated but undoubted cases of rabies appeared in the town during the autumn, and unfortunately in each case people were bitten by the rabid animals before they could be secured. The victims were sent by the Corporation to Paris for treatment,

and in none of the cases bitten have any unpleasant consequences arisen.

The Medical Officer of Health appends to his Report an account of the first of these expeditions to Paris. He thinks the record may be of use to others who have to take patients to the Pasteur Institute.

#### APPENDIX.

##### EXTRACT FROM PROCEEDINGS OF THE HYDE TOWN COUNCIL, SEPTEMBER, 1894.

Dr. SIDEBOTHAM, Medical Officer of Health, made the following important Statement with respect to his recent visit to the Pasteur Institute, Paris, along with Miss Priestley, the hospital nurse, in charge of the three children who were bitten by a mad dog at Hyde, on August 21st.

“With the permission of his Worship, I should like to say a few words about the children who were sent by you, under the care of Miss Priestley and myself, for treatment at the Pasteur Institute, in Paris, at the end of last month.

So much has been recently said in condemnation of public bodies who have sent patients there—one writer, I notice, goes so far as to say that “Town Councillors and Medical Officers must be far more mad than the dogs to risk the lives of dog-bitten children by sending them to Pasteur”—that it is desirable that something should be said in justification, or, I ought to say, in support of those who, I should rather say, display such praiseworthy public spirit.

The question is—Will you, when a poor child has been bitten by a dog which you have every reason to believe rabid, merely trust to cauterisation and await the result, or will you assist that child to receive the benefit of a process it cannot obtain in this country, which holds out, I venture to submit, a very strong hope and probability of protection against hydrophobia?

Although the same writer I have already quoted says in another place that “the vapour bath, properly tried, has never been known to fail in the treatment of this disease,” yet I think it is generally admitted that when hydrophobia is once developed treatment is of little or no avail. Certainly this has been my experience, and there are other medical men in the town who will, I think, confirm what I say. If we admit this, then it is obvious that we ought to concentrate our attention on preventive methods, and preventive medicine clearly falls within the province of the Corporation.

I think, after what I shall tell you of the method, and a consideration of figures which I have collected in Paris, and which I shall presently place before you, it will be seen that M. Pasteur’s treatment holds out a much better hope of escape from this terrible malady than any other method which has been advanced, either empirical or otherwise. And although absolute

cure is not guaranteed in every case, yet I venture to submit that the very hopefulness of the treatment constitutes your justification.

As to the question of the madness of the dog, I may say that the experiment made in Paris with its spinal cord confirms the opinion expressed by your veterinary surgeon, Mr. Nelson.

In passing, I should like to urge that in future the greatest efforts should be made to take all suspected dogs alive, and keep them under observation in a strong and safe cage, until their state is verified.

There is of course nothing new in this observation, but I here reiterate it in public, because there appears still to be a great tendency on the part of some to destroy immediately any dog which bites a human being, and no doubt many persons, especially adults, are thereby kept in a state of terror and suspense for many weeks who otherwise might have been placed quite at ease in a few days, if the dog had been kept alive and observed for a time. Here again, if anything can be done to alleviate this terror and mental anguish, which is often worse than real physical pain, it is clearly our duty to assist such a consummation.

When, therefore, a Corporation or other public body recognises its duty in assisting those who cannot otherwise attain it to get the best known means of combating the malady and restoring their peace of mind, I think it is clearly less blameworthy than those who, in their attacks on M. Pasteur and his methods, ruthlessly endeavour to destroy the hopes and shake the faith of the poor sufferers who look to him for help, and yet who never offer anything tangible themselves as a substitute.

I find a very great many people have only vague ideas as to the nature of the treatment, what is its rationale, and as to how it is administered. So, if I am not trespassing too much on your time and patience, I should like to give a short description of the process, divested of technicalities. Further I should like to say a few words respecting the sojourn in Paris and the procedure at the Institute, all which, being of a practical character, may be of benefit to other patients who may have to seek the assistance of M. Pasteur at some future time.

M. Pasteur's anti-rabies treatment consists of inoculation with the virus of rabies, modified by transmission through rabbits, and subsequent exposure to the air. A rabbit having been inoculated with the virus in its strongest form dies in a few days. The spinal cord of this rabbit contains the virus in every part, but if a portion is separated and suspended in dry air, its virulence gradually diminishes, and in time (about 15 days) it disappears altogether. For the preventive inoculation, a number of these cords are kept in separate bottles of dry air, the date of their introduction being noted.

On the first day of treatment a preparation made from a cord which has been exposed for 14 days (*i.e.*, containing the

virus in its weakest state) is injected under the skin. On the second day spinal cord of 13 days' drying is injected. The next day 12 days, and so on till the strongest is reached.

Each injection protects the patient from the effects of the next one stronger, until at last he is proof against the strongest, which is equal to the virus introduced in the original bite of the rabid dog. By this means the patient becomes gradually accustomed, as it were, to the poison, somewhat in the same way that an opium eater gradually increases his dose, till he can at last take with impunity a dose, which to an ordinary individual, would be rapidly fatal.

I will quote a few lines from a standard work on medicine, which speaks calmly and dispassionately on the subject:—"On the whole there appears to be no doubt that hydrophobia has been prevented in a considerable number of cases by this treatment, the percentage of cases in which the disease has developed after the inoculation being much less than what is regarded as the average. And though it must be allowed that the intensified method is not absolutely free from danger of itself conveying the disease—and one such case has happened—the risk is, nevertheless, very small."

Modifications are made in certain cases, but the foregoing description is a general outline of the process, which lasts, according to the situation and severity of the bite, from 14 to 21 days. Thanks to the kindness and the courtesy of the French doctors at the Institution, I had good opportunities of studying the details of the process in its various stages.

I shall now present to you some figures, which have been very kindly supplied to me by Dr. Pottevin, of the Pasteur Institute. I was assured that the greatest care had been used in the preparation of the statistics to avoid all possible error:—

| Year. | Persons treated. |        | Deaths. |       | Mortality % |
|-------|------------------|--------|---------|-------|-------------|
| 1886  | .....            | 2,671  | .....   | 25    | ..... 0·94  |
| 1887  | .....            | 1,770  | .....   | 14    | ..... 0·79  |
| 1888  | .....            | 1,622  | .....   | 9     | ..... 0·55  |
| 1889  | .....            | 1,830  | .....   | 7     | ..... 0·38  |
| 1890  | .....            | 1,540  | .....   | 5     | ..... 0·32  |
| 1891  | .....            | 1,559  | .....   | 4     | ..... 0·25  |
| 1892  | .....            | 1,790  | .....   | 4     | ..... 0·22  |
| 1893  | .....            | 1,648  | .....   | 4     | ..... 0·24  |
|       |                  | <hr/>  |         | <hr/> |             |
|       |                  | 14,430 |         | 72    | 0·50        |

In this table only cases are included among the deaths in which the symptoms of hydrophobia manifested themselves more than 15 days after the last inoculation. Thus in 1893, for instance, in addition to the four deaths tabulated, two other persons showed symptoms less than 15 days after the last inoculation

Patients are divided into three classes thus:—Class A : Rabies in the biting animal is experimentally verified by inoculating animals with his spinal cord. Class B : Rabies is certified by a veterinary examination. Class C : The animal is suspected of having rabies.

The bites from the point of view of their situation are also divided into three classes :—First, bites on the head and face ; second, bites on the hands ; third, bites on the limbs and trunk.

The next table shows the results for 1893, according to this classification :—

|             | Bites on head and face. |         |             | Bites on hands. |         |             | Bites on limbs and trunk. |         |             | TOTAL.   |         |             |
|-------------|-------------------------|---------|-------------|-----------------|---------|-------------|---------------------------|---------|-------------|----------|---------|-------------|
|             | Treated.                | Deaths. | Mortality % | Treated.        | Deaths. | Mortality % | Treated.                  | Deaths. | Mortality % | Treated. | Deaths. | Mortality % |
| Class A ... | 12                      | —       | —           | 89              | —       | —           | 40                        | —       | —           | 132      | —       | —           |
| Class B ... | 89                      | —       | —           | 534             | 3       | 0·56        | 385                       | —       | —           | 1008     | 3       | 0·30        |
| Class C ... | 34                      | —       | —           | 234             | 1       | 0·41        | 231                       | —       | —           | 508      | 1       | 0·20        |
| Totals...   | 135                     | —       | —           | 857             | 4       | —           | 656                       | —       | —           | 1648     | 4       | 0·24        |

The following table gives the results obtained since the commencement of the inoculation :—

|                              | Cases. | Deaths. | Mortality % |
|------------------------------|--------|---------|-------------|
| Bites on head and face ..... | 1,213  | 16      | 1·32        |
| Bites on hands .....         | 8,032  | 45      | 0·56        |
| Bites on limbs and trunk ... | 5,185  | 11      | 0·21        |
| TOTALS .....                 | 14,430 | 72      | 0·50        |

When we remember that it is calculated that the mortality among persons not treated is about 20 per cent, and that it reaches 80 per cent. among those bitten on the head and face, the results of the treatment as shown by these tables, are very remarkable.

The journey to Paris, which was reached in 18 hours, was uneventful, except for the minor discomforts which are inseparable from such an expedition. On arrival, some little inquiry was necessary to obtain the address of the Pasteur Institute, which was found to be at 25, Rue Dutot, a street off the Boulevard Vaugirard, on the south side of the river.

Having reached the Institute, our first and in fact the only real difficulty which we encountered occurred. This I must comment upon, because the whole comfort of the expedition depends upon a satisfactory solution of it.

The Institute is conducted like a hospital, with an out-patient department only, consequently, as there is no accommodation for patients inside, it is necessary to find a convenient



hotel or lodgings, as near as possible to the place. The authorities do not take upon themselves to recommend, or even to name any, so that one has to make inquiries.

For some reason or other the lodge-keeper, after telling us that we must present ourselves at eleven o'clock, in reply to my inquiry, directed me to a hotel at least a mile and a half away. Its distance, which would have involved a daily drive, or a tedious walk for the children, all of whom, you will remember, were bitten in the leg, and the high rate of the charges were not the only drawbacks to the place, and I was heartily glad, on returning to the Institute at eleven o'clock, to find a very, comfortable and suitable hotel, called the Grand Hotel de l' Institute Pasteur, within a few yards. I at once arranged with the landlord to accommodate us, and to bring our baggage from the other place, and I must certainly say that the comfort of the remainder of the stay in Paris was in no small degree owing to the kindness and consideration which we received from the landlord, and his people; and I have no hesitation in recommending any one who may have to go to Paris on a similar errand, to stay at the same place.

All patients have to attend at eleven o'clock. The new cases are taken first, then those who have undergone one inoculation, and so on, the names being called out in order from a list prepared daily, with great care, so that everyone receives the inoculation of the right strength.

For the first five days patients are inoculated on both flanks; after that, right or left on alternate days, till the end of the treatment.

Persons who have been bitten on the face, or in whom the commencement of the treatment has been long delayed, attend again at three o'clock, for the first two days.

The treatment is entirely gratuitous, but persons who can afford it are expected to give a donation towards the expenses of the Institution.

For the most part the treatment does not appear to have any disagreeable effects, except a little pain and stiffness of the abdominal muscles for a short time after the inoculation. Here and there, however, I noticed persons who seemed to be rather upset in their general health. Fortunately with our patients, I am glad to say, so far no disagreeable effects whatever have been produced.

We did all we could, not only to look after their general health, but to regulate their diet, so that it should be as nutritious as possible, and to keep them constantly amused and as cheerful as possible.

I thought at first that I might, after getting them settled, return to Hyde and leave them with Miss Priestley, but I felt that it was a great responsibility for one person, and moreover, if anything unforeseen had taken place, I should have reproached myself for leaving them, so I determined to stay till the end of the treatment, and bring them back."

**MACCLESFIELD.****Municipal Borough.**

Medical Officer of Health—DR. W. R. ETCHES.

Population at Census, 1891—36009.

Estimated population in middle of 1894—36009.

Area in acres—3215

Birth-rate per 1000 living—28·2.

Death-rate per 1000 living—17·8.

Death rate from seven principal Zymotic diseases—1·6.

Deaths under one year to 1000 births—133.

This Urban District includes the whole of the Registration sub-districts of East and West Macclesfield, part of Sutton and part of Hurdsfield. The area and population at the Census of these localities were as follows :—

|                    |     |     | Area in<br>Acres. |     | Population<br>at Census. |
|--------------------|-----|-----|-------------------|-----|--------------------------|
| East Macclesfield  | ... | ... | 874               | ... | 9813                     |
| West Macclesfield  | ... | ... | 1706              | ... | 17854                    |
| Part of Sutton     | ... | ... | 361               | ... | 5060                     |
| Part of Hurdsfield | ... | ... | 274               | ... | 3282                     |

**Altitude and Subsoil.**—The elevation varies between four and five hundred feet above sea level. The nature of the subsoil is variable. To the W. and N. W. sand and gravel (lying on boulder clay) alternate, the sand predominating. In the centre of the town are from two to five feet of coarse gravel on firm boulder clay. To the E. brick clay on sand varies with rough gravel, and to the S. boulder clay predominates. The substratum, at a depth of from 50 to 170 feet, is new red sandstone.

**Population.**—The population at the Census, 1891, was 1505 less than the population at the Census, 1881. According to the ordinary methods of estimating population, one might assume that this rate of decrease was still going on and calculate accordingly. However as this decrease has been attributed to the large emigration to America, during the decade 1881-91, and in the last four or five years this emigration (estimated by the sale of tickets) has fallen to a tithe of what it was, also bearing in mind the tendency of town populations to increase, the Medical Officer of Health, concludes the population may safely be considered as stationary. The natural increase in the population since the Census of 1891, and the number of children on the Schools' Register, support this conclusion.

The number of persons to an acre is 11·2 for the whole Borough. Owing to the extension of the Borough into the surrounding country on all sides, except to the north, the proportion of persons to an acre is rather small for an Urban District.

Though there are no very crowded districts, such as are found in many large towns, there are parts of Macclesfield where the density of population is considerable—for instance in the central district, bounded by Chestergate, Roe Street, Mill Street and Bond Street, the number of persons to an acre (allowing 5 persons to each inhabited house) is 185.

**Births and Deaths.**—In 1894 the number of births registered was 1017. This yields a birth-rate which compares favourably with that of the last six years. In 1893 the birth-rate was 25·8, the lowest on record. The mean birth-rate in Macclesfield for the ten years, 1875—84, was 32·6, and the mean birth-rate for the ten years, 1885—94, was 27·4. In 1894 the number of deaths registered (excluding 89 deaths of persons not belonging to the borough) was 643. This yields a death-rate lower than any previously recorded in Macclesfield. It is 2·8 below the mean death-rate of the ten years 1884-93 and 4·2 lower than the mean death-rate of the twenty years 1874-93.

The decrease in the mortality was chiefly among infants and people over 65 years old. As regards infants this was due to the absence of hot weather in June and July having delayed the appearance of summer diarrhœa. The chief reason why the mortality of hand-fed infants is so much higher than of those nourished at the breast, especially during the third quarter of the year, is because it is so difficult to keep their food free from noxious germs, which the infant stomach is unable to destroy, whereas the breast-fed child secures its food before there is any chance of its contamination. During the hot months children should be kept as much as possible from nuisances (such as defective ashpits) and all milk used for children should be boiled. As regards old people no doubt the decrease in mortality was due to the warm early spring and late winter.

**Infant Mortality** is best stated as the proportion of deaths of infants under one year old to births during the same year. There is no doubt that this, and the zymotic death-rate, afford the most trustworthy test of the sanitary state of a district that statistics can give. A constantly high rate of infant mortality, is a necessary result of insanitary conditions and of sewage-soaked ground. From the table below, showing the number of deaths of infants under a year old to every 1000 births, in the four subdivisions of the Borough and in the whole of England and Wales, it will be seen that during the last nine

years the infant mortality of Macclesfield has averaged high :—

DEATHS OF INFANTS UNDER ONE YEAR TO EACH 1000 BIRTHS.

|   | 1886. | 1887. | 1888. | 1889. | 1890. | 1891. | 1892. | 1893. | 1894. | Average<br>for 9<br>years. |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------------------|
| East Macclesfield ..  | 233   | 151   | 171   | 265   | 219   | 161   | 215   | 225   | 137   | 198                        |
| West Macclesfield<br>(excluding Public<br>Institutions) ... | 186   | 184   | 118   | 180   | 143   | 136   | 192   | 170   | 110   | 157                        |
| Sutton ... ..   | 153   | 150   | 148   | 212   | 124   | 108   | 235   | 131   | 126   | 165                        |
| Hurdsfield .. ..  | 124   | 192   | 87    | 169   | 160   | 127   | 177   | 153   | 156   | 138                        |
| Whole Borough .   | 194   | 170   | 135   | 220   | 172   | 130   | 203   | 190   | 133   | 161                        |
| England and Wales   | 149   | 145   | 136   | 144   | 151   | 149   | 148   | 159   | 137   | 146                        |

East Macclesfield it will be seen is mainly responsible for the high rate. This must show that the conditions of health in that part of the town are less favourable to infant life than in other parts, notably in Hurdsfield. This means that some parts of East Macclesfield need special sanitary attention, for instance the more frequent removal of refuse and increased inspection.

Various remedies have been propounded for preventible infant mortality in manufacturing towns. Chiefly these come under three heads :—

1. Preventing mothers from going to the mills just before and for some months after confinement.
2. Providing proper care for infants in their mothers' absence, such as is afforded by crèches.
3. A more thorough investigation into the causes of deaths of infants.

The late Medical Officer of Health in his Report for 1890, went exhaustively into this question, and an effort was afterwards made to found a crèche, but it was not a success, and is now closed.

**Zymotic Mortality.**—The number of deaths in 1894 from the chief zymotic diseases (including croup) was 71, viz. : 25 measles, 3 scarlatina, 2 diphtheria, 7 croup, 11 whooping-cough, 2 typhoid fever, 7 puerperal fever and 14 diarrhœa. This yields a zymotic death-rate about equal to that of 1893. During the last twenty years the zymotic death-rate has been steadily falling. This is no doubt one of the definite results of the administration of the Public Health Act. There is no reason why the zymotic death-rate should not be still further reduced by increased vigilance to prevent exposure of infected persons and more thorough isolation. The zymotic death-rate for East Macclesfield is higher than for the rest of the town.

**Notification of Infectious Disease.**—The Macclesfield Corporation Act, 1882, enacts that “infectious disease” means and includes small-pox, cholera, typhus, typhoid, scarlet, relapsing, continued and puerperal fevers, also diphtheria; and the Notification Form-book issued after that Act came in force is still generally used by medical practitioners in the town. But to these diseases were added membranous croup and erysipelas, when the Council adopted the Infectious Disease (Notification) Act, 1889. Hitherto, owing to the Form-book not containing these two diseases on the list, they have not been regularly notified. The Medical Officer of Health does not know whether notice was sent to the medical practitioners of the town when the Act of 1889 was adopted, but that croup and erysipelas are notifiable does not seem to have been generally understood till recently. Omitting to notify erysipelas is of little importance, but as it is in most cases impossible to tell the difference between membranous croup and diphtheria, it is a matter of great importance to have both regularly notified.

During 1894, 88 notifications were received. Eighty-one were by medical practitioners, 5 by the registrars, 1 was by an occupier and one by a midwife. The cases of disease notified by medical practitioners were as follows:—4 small-pox, 42 scarlatina, 5 diphtheria, 2 croup, 17 typhoid fever, 2 continued fever, 6 puerperal fever and 3 erysipelas. Of the cases notified by the registrars, 4 were cases of croup, and one was “a supposed case of Asiatic cholera.”

The number of cases in which, on examination of premises, sanitary defects were discovered was 12. The number of cases in which the source of infection was traced was 19. The number of cases in which the disease was contracted outside the Borough was 3.

**Small-pox.**—Two cases of this disease were notified in the beginning of May. They were of a mild type, the subjects in both cases having been well vaccinated. They were infected at the same common lodging-house, probably from a tramp passing through the town, having undetected mild small-pox. They were removed to the Isolation Hospital, their clothes were burnt, and the rooms where they had been were stoved and closed for a week. Six other inmates of the common lodging-house, who had been in contact with one of the patients, were persuaded to remain under observation in the house for four days. Three of these were itinerant musicians. They were all re-vaccinated. The third case of small-pox was notified on June 5th. This was a tramp in the Casual Ward at the Workhouse. He was removed to the Isolation Hospital and remained there eight weeks. The eruption was so severe it was difficult to make out vaccination marks with certainty. But one faint mark could be distinguished. The fourth case was also notified in June. It was that of a little girl in Sutton. She was removed to the Hospital.

**Scarlatina** was comparatively in abeyance in the town, in 1894. Of the 42 cases recorded, 18 were notified in the first quarter, 11 in the second, 9 in the third and 4 in the last quarter. As there were 3 deaths the mortality was equal to about 7 per cent. In all 5 cases were removed to the Hospital.

**Diphtheria and Membranous Croup.**—These two diseases are so similar that for preventive purposes they may be taken as one. It is only by a microscopical examination of the bacteria from the membrane which forms at the back of the throat, that they can be distinguished. As this is out of the question before taking preventive measures, it is safest to look on both diseases as dangerously infectious. A great deal of attention is now being given to diphtheria by medical men, on account of its alarming increase in Urban Districts. Its relationship to sanitation may be summarised as follows:—However bad the sanitary conditions, diphtheria cannot arise *de novo*; it must be imported either from some other man or animal, but if introduced into insanitary dwellings it tends to take a severe type, to crop up again from time to time, and when once established in a locality, especially where the sewerage is defective, it is very difficult to eradicate it. It is more likely to spread in a badly sewered town than in one which has no sewers at all. It is extremely likely to spread from schools, especially if they be ill-ventilated and badly drained, and it has often been spread by milk.

It is curious to note that though there were 2 deaths ascribed to diphtheria and 7 ascribed to croup, there were only 5 cases of diphtheria and 2 of croup notified by medical practitioners. A most important measure in the prevention of the spread of these diseases is the emptying and disinfecting of ashpits in the neighbourhood, and the burning or disinfecting of all discharges from the patient.

**Typhoid and Continued Fever.**—The 17 cases of typhoid fever and the 2 cases of continued fever were notified with one exception during the last 8 months of the year. The incidence of these fevers in the town is somewhat uniform year by year. The average number of cases annually reported in the last nine years was about 20 (say 0.6 per 1000 inhabitants). Typhoid fever being chiefly spread by the discharges from the patient, it is highly important that they should be disinfected and removed to a distance from water-supplies or dwellings. Zinc pails with tightly fitting covers have been obtained, and one of these is now sent to every house that has no water-closet, at which fever occurs. Disinfectants are sent also, and instructions given to use them freely to the stools, and to keep the pail closed. The pail is exchanged every day and is taken with its contents to the Moss.

**Puerperal Fever.**—Beside the 6 cases of this disease notified by medical men, there was a case reported by a midwife

and one by a registrar. Seven of these occurred in the practice of three midwives—one having 3 cases, another 2 and the third 2. Upon receiving the notifications, the Medical Officer of Health communicated with these women, and they desisted from practice two for a month and one for three months. No fresh cases were attended by them after they had received warning of the infectious nature of the disease. It is most important that puerperal fever should be notified early, because a midwife in busy practice is likely to go from an infected case to several others before she is aware of the dangerous nature of the case. It is often insidious and slow in its onset, and before it is thought necessary to call in a medical man, who pronounces it infectious and notifies it, many cases may have run a risk of contamination. The remedy lies in compulsory registration of midwives, and a more stringent test of competence to recognise the ordinary phenomena of puerperal fever before giving the diploma to practice.

**Measles.**—This disease was prevalent in the last quarter of the year. Of the whole number of deaths from measles (25) all but 3 were recorded in this quarter. Three infant schools were temporarily closed on account of the disease:—Christ Church School for 3 weeks in August, London Road School for 4 weeks in November and December, and Hurdsfield Church Schools from December 1st to the Christmas holidays. From time to time during the epidemic the Medical Officer of Health communicated with the School Board Officials and the Schoolmasters to ascertain the number of scholars absent on account of the disease. The importance of notification of measles has reference to closing of schools only. The fact that measles is specially dangerous to life during the first five years of life, makes it important to postpone the attack as long as possible, and therefore closing Infant Schools is advantageous in so far as it keeps the younger children from mixing with the infectious. No doubt they play together if they are not learning together, but the younger ones do not stray very far from home as a rule, and measles may attack one street and leave an adjacent one alone if the communication is not great. The average age at death during this year was 1 year and 10 months.

**Phthisis.**—During the year there were 87 deaths due to phthisis or pulmonary consumption, but 16 were of persons not belonging to the Borough. Deducting these the phthisis death-rate is 1·9 per 1000 living. The mortality from phthisis is about equal to that from all the zymotic diseases taken together. Most of the deaths occurring between 15 and 25 are due to it, just the age when the subjects of it should be becoming most active and useful. Any measures which would lessen this mortality would be of the highest value to the community.

In his Report for 1893, the late Medical Officer of Health dealt fully with the subject, and discussed the advisability of

adding phthisis to the list of notifiable infectious diseases. The Medical Officer of Health fears that the cost of carrying out any effectual preventive measures, and the social difficulties which would arise, render this useless for the present. However something can be done by disseminating information about the contagious nature of phthisis, and thus educating the sufferer and his friends to take the necessary precautions. Last year's Report set out these fully and will well repay re-reading.

It is satisfactory to note that the number of deaths from phthisis in the Borough has steadily decreased during the last twenty years. From 1875 to 1884, the average yearly death-rate was about 2·8 per 1000, and from 1885 to 1894 the average yearly death-rate was about 2·1 per 1000.

**The Isolation Hospital.**—During the year 10 patients were treated at the Hospital, viz.: 5 scarlatina, 4 small-pox, and 1 diphtheria. Of the scarlatina cases admitted in 1894, 2 had to leave prematurely, having only been in hospital a week, on account of the outbreak of small-pox and the likelihood that the available accommodation would be wanted for this. However the parents were given time to make arrangements for isolation. The other cases remained, on an average, 24 days in hospital. They were mild cases and peeled quickly; moreover 2 had been ill a week before admission. Of the small-pox cases, 3 were very mild, 1 was very severe. They remained, on an average, a month and two days in hospital. The diphtheria patient was removed from the children's ward of the Infirmary. There were no deaths.

In autumn the hospital was repainted and generally repaired. Also the site and the field adjoining were re-fenced at a cost of £82 8s. 0d. Excluding this, charge for repairs, &c., and £36 12s. 6d. interest on loan for site and building, the cost of maintaining the hospital for the year was as follows:—

|   | £     | s. | d. |
|---|-------|----|----|
| Food, &c., with clothing and bedding ...          | 38    | 9  | 0  |
| Wages of nurses, &c. ... ..                       | 55    | 14 | 9  |
| Other expenses, including fuel and lighting... .. | 20    | 14 | 8  |
| Medical attendance ... ..                         | 20    | 0  | 0  |
|   | <hr/> |    |    |
| Total ... ..                                      | 134   | 18 | 5  |

Notwithstanding the painting and other necessary repairs during the year, the hospital is rapidly deteriorating, and in a few years the Committee will be obliged to consider what is to be done in connection with it.

Public opinion in all parts of the country is now becoming alive to the value of Infectious Hospitals, owing to the great restraint imposed upon a household keeping their relatives at home during an infectious illness, and the risk of further infection. Hospitals in many places are used by all classes,



and payment is made according to means, but of course these are permanent hospitals, well equipped.

The Medical Officer of Health knows that the present is not an opportune time to ask the Committee to consider the erection of a hospital in Macclesfield, as the sewage question is pressing, and exhausting available funds. However in December a letter was received from the County Council, inviting the Authority to appoint a Sub-Committee to meet them on the question of co-operation, and as the Authority have a good site well away from the town, there may be an opportunity now of getting a conjoint hospital built in this district (which will fulfil all present wants) at an expenditure less than would be required for a separate permanent hospital. The matter is therefore well worthy of serious consideration.

**Vaccination.**—Having made enquiries of the Vaccination Officers, the Medical Officer of Health is able to report that less than 2 per cent. of the infants whose births are registered in the district, are unaccounted for in respect of vaccination.

**Disinfectants.**—During 1894, £3 16s. 0d. was expended in special disinfectants on account of infectious diseases, and £53 4s. 0d. was expended in carbolic acid powder and soluble carbolic fluid, chiefly used by the nightsoil men to deoderize the streets after the removal of midden-contents.

With reference to disinfection on account of infectious disease, the Medical Officer of Health points out that it is well to bear in mind that the placing of disinfectants about the patient's room cannot be relied on to prevent infection. To properly disinfect the air of a sick room it would be necessary to create fumes, which would be fatal to the patient. However, if used freely to the discharges of the patient, and added to the hot water used for washing bed clothes, floors, &c., disinfectants are undoubtedly of use.

**Common Lodging-houses.**—The Medical Officer of Health visited the common lodging-houses during the year. The Inspector paid 1023 visits of inspection. An average of 194 persons per night were accommodated in 1894. Although, in some instances too little space had been allowed, considering the curious shapes and inconvenient arrangements of the houses, the cleanliness and whitewashing was satisfactory, except in the case of one house, the keeper of which was warned. The keepers understand the consequences of failing to notify infectious disease in their houses, and come to the Inspector when anyone is ill. The two small-pox cases not having spread infection was due to their having been reported and immediately isolated. One fresh house was registered in 1894.

**Slaughter-houses.**—The Medical Officer of Health, in company with the Inspector, visited the slaughter-houses and

revised the list. There are at present 39 registered slaughter-houses in the Borough, of which 26 are in regular use and 3 are used occasionally. The Inspector paid 673 visits of inspection to these. In many, the floor is not as it should be. The state of the floor and lower part of the walls of a slaughter-house is, next to a plentiful supply of clean water, the most important consideration from a sanitary point of view. If there are cracks and interstices in the floor, however well the scrubbing is done after slaughtering, some of the animal fluids are bound to lodge, and by the time the next slaughtering comes round (especially in summer) these old fluids have become offensive and pollute the air. There is no reason why all imperfect floors should not be cemented over and made good. The cost to the butcher would soon be recovered by saving of time in necessary scrubbing.

**Diseased Meat.**—No seizure of meat was made during the year. The Medical Officer of Health had his attention specially drawn to two carcasses, but on examination they were not found unfit for human food. Sixty-seven pounds of fish were seized and destroyed as unfit for human food.

**Dairies, Cow-sheds, and Milk-shops.**—The Medical Officer of Health has also visited these and revised the register. There are now 57 registered milk-houses in the Borough. Perhaps these require more careful attention than either slaughter-houses or bakehouses, because milk is consumed by a great many without cooking, in exactly the condition that it leaves the milk-house.

The number of registered houses which satisfied all requirements as to cleanliness, ventilation and water-supply was 9. As regards the condition of buildings, air-space and drainage, 12 were classed as good, 13 as fair, 21 as indifferent, and 6 as bad. As regards cleanliness, 13 were classed as good, 31 as indifferent, and 8 as bad. As regards white-washing 31 were properly white-washed and 12 neglected. As regards water-supply, 20 were using town's water, 9 apparently good water, and 5 dangerous water.

Owing to the distance of some of the farms from town, it is difficult for the Inspector to make systematic inspections of them. However, they will all be visited again shortly, and the more careless reminded of their promises to put things in order. Where the premises are not put in order, further proceedings ought to be taken.

**Bakehouses.**—There are 57 bakehouses in the Borough. The Medical Officer of Health has not visited them yet, but intends to do so in the current year.

**Workshops.**—The inspection of workshops is among the duties of sanitary officials. A list of these has been prepared

by the Inspector, and the Medical Officer of Health hopes to visit them during the current year.

**Water-supply.**—During the year no complaints have been received about the town's water. The Medical Officer of Health has reason to believe it continues good, although no samples have been examined lately. "Recent experiments on the filters of the London Companies," writes the Medical Officer of Health, "indicate that the number of germs in the water seems to be independent of the age of filter bed, in fact, the cleansing of a sand filter interferes with its action, as the green film on the top has the most useful effect of arresting and cultivating the harmless germs which consume the organic matter in solution. We need therefore not be anxious that the filter beds should be too diligently renewed."

**Housing of the Working Classes.**—No action has been taken under the Housing of the Working Classes Act, 1890. Several houses have been inspected.

**New Houses.**—Seventeen new houses have been built, and plans have been passed in respect of 48.

**Elementary Schools.**—During the year there has been a good deal of activity in attending to the sanitary wants of schools. At St. George's School 13 water-closets have been constructed in place of 2 large privies. At London Road Infant Schools 12 water-closets have been constructed in place of 2 large privies. At St. Alban's School 9 water-closets have been constructed in place of 4 large privies. At Mill Street School 11 water-closets have been constructed in place of 6 large privies.

**Middens and Refuse-removal.**—In 1894, the number of complaints of nuisances from the tardy removal of midden refuse, &c., was 145. As far as this is a gauge it shows the work of emptying middens, &c., was fairly well in hand. The middens and ashpits belonging to many houses date back to a time when bye-laws as to construction were unheard of, and the shapes and sizes and situations of some of these receptacles make systematic emptying difficult; it is therefore not surprising that in past years there have been, from time to time, numbers of complaints of nuisance from this cause.

There are some courts and streets in the town where houses are crowded together and in consequence the ashpits are close to the back doors (in a few cases front doors) and where a full ashpit in summer is a serious nuisance and menace to health.

The Medical Officer of Health thinks the Committee will do well to consider whether it is not advisable to increase the expenditure on the systematic removal of refuse from the ashpits in the crowded parts of the town. This would be especially

beneficial during the spring and no doubt lessen the sickness and mortality from diarrhœa.

The wetness of some of the ashpit middens is another cause of nuisance. In many cases this is not due to either rain or ground water, but to the fact that many occupiers prefer to throw their slops into the ashpit instead of the drain. In these cases something can be done by warning, and if the fact that an occupant had thus caused a nuisance could be demonstrated, a summons might be applied for. When however an ashpit continues to be wet, from whatever cause something must be done to it. It must be filled up and cemented, or drained. Draining will lessen the pollution of the ground surrounding the wet pit, but the drain is likely to get blocked after a time, when the nuisance will recur, whereas filling the pit to the ground level and cementing it over, will prevent the dangerous infiltration into the ground. If excess of liquid be thrown into a pit the bottom of which is level with the ground, a nuisance results, but it is apparent at once and attention is called to it. The deep pit however is the site of a more injurious nuisance beneath the surface, which is not detected till the surrounding ground is soaked and can absorb no more. The quicker the work of filling to ground level the deeper ashpits is proceeded with, the better for the health of the town.

Six new sewers have been laid.

**Main Drainage and Sewage Disposal.**—In the Annual Report for 1886, it is recorded that Dr. David Page, a Local Government Board Inspector, after making an inspection of the town, put this as its first sanitary requirement. Since then it has been referred to in almost every report as imminent, but now it may be safely concluded that the work will be started during the year. The fact that many felt the Authority were not justified on entering on the large expenditure necessary, has been the chief cause of the delay. Thus in the long run the pressure put upon the Town Council by a neighbouring Board, to take the crude sewage out of the river Bollin, may prove a blessing in disguise. The Medical Officer of Health congratulates the Committee on not having committed themselves prematurely to any particular process for purification of sewage.

**Inspector's Report.**—The number of nuisances entered on the books in 1894 was 496, the number of nuisances removed was 507, the number of complaints received was 145. The number of preliminary notices and letters sent was 572, and the number of formal notices served was 132. The number of house drains repaired and cleansed was 153, and the number of sink waste-pipes disconnected was 40. There were 151 privies and ashpits repaired and improved, 74 new water-closets and 59 new dry-closets constructed. One person was summoned for an offence under the Public Health Act. There were 67 houses specially inspected on account of infectious disease, and to these

1016 visits were paid. There were 53 canal boats inspected. Forty samples of food were taken and submitted for analysis, and 4 persons were proceeded against for offences under the Sale of Food and Drugs Acts.

**Temperature and Rainfall.**—The Medical Officer of Health submits the following tabular statement with reference to temperature and rainfall during each month in the year. It is prepared from daily readings of the instruments in the old park, and has been corrected and supplied by Mr J. Dale.

| 1894.            | Temperature. |          |       | Total Rainfall. |
|------------------|--------------|----------|-------|-----------------|
|                  | Maximum.     | Minimum. | Mean. |                 |
| January ... ..   | 52·7         | 12·0     | 36·6  | 2·9             |
| February ... ..  | 54·2         | 24·3     | 39·7  | 3·7             |
| March ... ..     | 64·4         | 27·6     | 43·4  | 2·4             |
| April ... ..     | 70·0         | 30·8     | 49·3  | 1·25            |
| May ... ..       | 63·9         | 27·4     | 46·5  | 2·6             |
| June ... ..      | 79·2         | 37·8     | 55·7  | 2·98            |
| July ... ..      | 80·2         | 43·8     | 60·1  | 3·22            |
| August ... ..    | 67·7         | 45·4     | 56·6  | 4·16            |
| September ... .. | 65·7         | 31·7     | 51·0  | 0·5             |
| October ... ..   | 64·8         | 25·9     | 47·0  | 2·9             |
| November ... ..  | 57·8         | 28·8     | 45·0  | 2·5             |
| December ... ..  | 52·4         | 22·4     | 39·7  | 2·9             |
| YEAR - - -       | 80·2         | 12·0     | ...   | 32·0            |

## STALYBRIDGE.

### Municipal Borough.

Medical Officer of Health—DR. F. J. ROBERTS-DUDLEY.

Population at Census, 1891—26783.

Estimated population in middle of 1894—27583.

Area in acres—3135.

Birth-rate per 1000 living—29·4.

Death-rate per 1000 living—18·4.

Death-rate from seven principal Zymotic diseases—1·5.

Deaths under one year to 1000 births—150.

The constituent parts of this Urban District are as follow :—

|                                  | Area in Acres. | Population at Census. |
|----------------------------------|----------------|-----------------------|
| Part of Dukinfield ... ..        | 248            | 11831                 |
| Part of Staley ... ..            | 2202           | 7674                  |
| Part of Ashton-under-Lyne ... .. | 685            | 7278                  |

During 1894 the number of births registered in the Borough was 811, and the number of deaths registered (including 44 deaths in the Workhouse, Ashton-under-Lyne, of persons removed from the Borough, 12 deaths in the Infirmary, and one death in Hyde Hospital) was 510. Of the births 434 were males and 377 were females. Of the deaths 261 were males and 249 were females. The death-rate is very much below the mean death-rate of the District.

Forty-four deaths were recorded from the seven principal zymotic diseases, viz. : 1 small-pox, 3 measles, 3 diphtheria, 23 whooping-cough, 2 typhoid fever, and 12 diarrhoea. The principal zymotic diseases death-rate is very much below the corresponding mean death-rate of the District.

The Borough is divided into four wards—Lancashire, Staley, Dukinfield and Millbrook Wards. The general death-rate and the proportion of deaths among infants was highest in Dukinfield Ward and lowest in Millbrook Ward.

**Zymotic Diseases**—The cases of zymotic disease coming to the knowledge of the Medical Officer of Health were as follows :—4 small-pox, 18 scarlatina, 6 diphtheria, 6 membranous croup, 18 typhoid fever, 1 relapsing fever and 27 erysipelas.

**Small-pox**—The first case of small-pox notified was on March 31st, at the "Home," Crocker Hill. Two Cases were notified on June 7th, one at Jackson's Yard, Walmsley Street and the other at Stanley Square. A fourth case was notified on August 5th, at Hassall's Court, Water Road. The cases were at once removed to the Hyde Hospital, the bedding, &c. burnt, and the houses fumigated with sulphurous acid fumes. All the inmates of the houses were re-vaccinated. The disease did not spread, showing conclusively the value of isolation and re-vaccination of all the inmates of any house where small-pox breaks out.

**Preventing the spread of Infectious Disease.**—In all cases of zymotic disease the houses are at once visited by the Medical Officer of Health and Inspector of Nuisances. Printed instructions for the prevention of the spread of the disease are left at the houses, disinfectants are supplied, the houses are fumigated with sulphur, and in severe cases the bedding and clothing are burnt. In addition the premises are examined to ascertain their sanitary defects. On any defects being discovered, notice thereof is at once given both to the landlord and tenant, and to the Sanitary Committee. The latter immediately take measures to have the premises put in proper sanitary condition.

**Inspection.**—The Medical Officer of Health makes visits of inspection with the Inspector of Nuisances, and on many occasions they have been accompanied by the Chairman and other members of the Sanitary Committee.

**Sanitary accommodation at the Post Office.**—For two years the Medical Officer of Health abstained from remarking on this matter, as he was given to understand a new post-office was to be built. Hearing in June that all hope of a new building was abandoned he wrote the Surveyor to the post-office, calling his attention to the inefficient sanitary provision, for the male clerks, and the total want of provision for the convenience of the female clerks. He received a reply that the matter should have prompt attention, but nothing being done after two months he wrote again. To this letter he got no reply. Accordingly a report was made to the Sanitary Committee of the Borough, and the Town Clerk was instructed to forward the report to the Postmaster General. The receipt of the report was acknowledged, but still nothing has been done.

**The Sale of Food and Drugs Act.**—Under this Act 10 samples (5 of milk, 3 of butter, 1 of cheese and 1 of lard) were submitted for analysis. The Borough Analyst certified that all the samples were pure.

**Water-supply.**—The water supplied to the Borough is of the purest kind.

**Insanitary Property.**—Two houses in Market Street, one in Higher Tame Street, one in Heap Street, one off Stamford Street, and one in Arch Court, in bad sanitary condition, have been put in proper order under the superintendence of the Borough Surveyor.

**Houses closed.**—The following houses were closed, under Section 82 of the Stalybridge Extension and Improvement Act, as being unfit for human habitation, viz. : Nos. 2, 4, 8, 12, 14, 16, 18, 20, 22, 24, 26, 1, 5, 7, 11, and 13, Back King Street.

**Lodging-houses.**—The Medical Officer of Health has many times during the year visited all the registered lodging-houses within the Borough, and finds them in a fairly sanitary condition.

**Inspector's Report.**—The Inspector reports that 405 nuisances have been abated during 1894, and 49 houses have been fumigated. There were 77 smoke observations taken, but the Sanitary Committee took no action with regard to smoke nuisances. The emptying of ashpits is supervised. During the year there were 5657 emptyings. The number of loads removed was 8133½.

**Temperature and Rainfall.**—The Medical Officer of Health submits the following tabular statement showing the

mean temperature and the depth of rainfall during each month in the year. The results were recorded at Stalybridge.

| 1894.            | Temperature.              |                           |                            |                            | Rainfall<br>12 inches<br>above<br>ground. |
|------------------|---------------------------|---------------------------|----------------------------|----------------------------|---|
|                  | Maxi-<br>mum in<br>Shade. | Mini-<br>mum in<br>Shade. | 1 foot<br>below<br>ground. | 4 feet<br>below<br>ground. |   |
| January ... ..   | 42                        | 33                        | 33                         | 41                         | 3·26                                      |
| February ... ..  | 45                        | 34                        | 34                         | 41                         | 5·47                                      |
| March ... ..     | 52                        | 36                        | 36                         | 42                         | 3·38                                      |
| April ... ..     | 58                        | 43                        | 44                         | 47                         | 4·07                                      |
| May ... ..       | 54                        | 40                        | 45                         | 46                         | 2·29                                      |
| June ... ..      | 63                        | 50                        | 52                         | 51                         | 3·36                                      |
| July ... ..      | 69                        | 54                        | 58                         | 56                         | 2·73                                      |
| August ... ..    | 62                        | 51                        | 53                         | 56                         | 4·44                                      |
| September ... .. | 60                        | 46                        | 49                         | 54                         | 0·58                                      |
| October ... ..   | 53                        | 42                        | 44                         | 51                         | 4·29                                      |
| November ... ..  | 50                        | 42                        | 41                         | 48                         | 2·54                                      |
| December ... ..  | 45                        | 36                        | 36                         | 41                         | 3·73                                      |

## ALSAGER.

### Urban Sanitary District.

Medical Officer of Health—DR. H. CRUTCHLEY.

Population at Census, 1891—1912.

Estimated population in the middle of 1894—2300.

Area in acres—2241.

Birth-rate per 1000 living—22·1.

Death-rate per 1000 living—10·4.

Death-rate from seven principal Zymotic diseases—0·4.

Deaths under one year to 1000 births—98.

This is the first Report of the new Urban District of Alsager, the area it contains having hitherto formed a part of the Rural District of Congleton.

In 1894, the number of births registered in the district was 51 and the number of deaths registered in the district was 24. Both birth-rate and death-rate are very low. The number of deaths of infants under one year old was 5. Of the 24 deaths one was due to puerperal fever and one to erysipelas. There were also 3 deaths from bronchitis or pneumonia and two from heart disease.

**Cases of Infectious Disease.**—Five cases of infectious disease were notified, viz.: 1 diphtheria, 1 typhoid fever, 1 puerperal fever, and 2 erysipelas. In all 2 cases of diphtheria occurred, but they were both of a mild type. There were also a



few mild cases of influenza and of follicular tonsillitis. In the summer and autumn the District was unusually free from diarrhoea.

**Sewers and Sewage Treatment.**—The Medical Officer of Health, after several observations, concludes that since April there has been less sediment deposited, and less sewer gas evolved, and that the condition of the manholes is improved. He suggested that the sediment should be more frequently removed from the settling tanks, and he understands the suggestion has been acted upon. He also directed the attention of the Authority to the fact that one half of the filtration area, as laid out, is practically of little value. A sub-committee has been formed to consider the best way of dealing with this.

**Sewer Ventilators.**—The Medical Officer of Health recommended the closing of ground grids on the main thoroughfares, where practicable, and in substitution increasing the number of upright ventilators. This recommendation has, to a certain extent, been acted upon.

**Isolation Hospital.**—The Authority's attention was called to the desirability of providing a hospital for infectious disease, or entering into an arrangement for the conjoint use of one. Accordingly arrangements were made by which Alsager is able to use the Sandbach and Congleton Hospital at Arclid, about four miles from Alsager.

**Water-supply.**—The water-supply being admittedly inadequate for the requirements of an increasing population, measures have been adopted to increase it. The supply is derived from a shallow well, and the Authority have had this cleaned out and bored deeper. Whether the considerable increase resulting will be maintained, or whether this supply will be sufficient for even the near future, remains to be proved.

**Insanitary houses.**—On inspecting houses, the Medical Officer of Health found that in connection with the cottage property were a large number of leaking privies and other sanitary defects. Recommendations were made and in the main these have been acted upon.

**Butcheries and Bakeries.**—These have been carefully inspected, with satisfactory results.

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## ALTRINCHAM.

### Urban Sanitary District.

Medical Officer of Health—DR. A. GOLLAND.

Population at Census, 1891—12440.

Estimated population in middle of 1894—12888.

Area in acres—662.

Birth-rate per 1000 living—28·5.

Death-rate per 1000 living—18·3.

Death-rate from seven principal Zymotic diseases—1·7

Deaths under one year to 1000 births—144.

In 1894, the number of births registered was 368, and the number of deaths (excluding 8 deaths in the General Hospital of persons not belonging to the district) was 236. The birth-rate is about equal to the mean birth-rate of recent years, the death-rate is a little in excess of the mean death-rate of recent years. Of the 236 deaths 53 were among infants under one year old, and 57 were among persons of 65 years and upwards.

The number of deaths from the seven principal zymotic diseases was 22, viz:—5 from measles, 5 from scarlatina, 3 from diphtheria, 3 from whooping-cough and 6 from diarrhœa. There were also 3 deaths from membranous croup, one death from rheumatic fever, 30 deaths from phthisis, 50 from bronchitis or pneumonia, 16 from heart disease, and 2 from injuries. There was only one uncertified death.

**Measles.**—This disease not being notified, the number of cases which occurred is not known. It prevailed principally during the last quarter, and at the close of the year was subsiding.

**Scarlatina** manifested itself from time to time throughout the year, there being many fresh importations. In all 51 cases were notified, 19 of which were under 5 years of age. No less than 48 were removed to the Fever Hospital, where one died. Eight were convalescent, but still under treatment at the end of the year. The 51 cases occurred in 33 houses. The Hospital was of much use in checking the spread of scarlatina, as it has been in previous years. The town owes much of its freedom from serious epidemics to the free use of this hospital.

**New Disinfecting Apparatus.**—Efficient provision for the disinfection of clothing, bedding, &c., has been made during the year. It consists of a "Washington Lyon" steam disinfecter, which has been erected in a suitable building in the rear of the Fever Hospital, and replaces the imperfect apparatus which was previously in use. A covered van is provided for bringing the articles to the disinfecter.

**Diphtheria and Croup.**—Though there were 3 deaths from each of these diseases, there were only 4 cases of diphtheria and two cases of croup notified. The 4 known cases of diphtheria were in two houses. As regards one house the disease was clearly imported. One diphtheria case was removed to hospital.

**Whooping-cough** was most marked during the earlier part of the year, and was again rather prevalent towards the close.

**Typhoid Fever.**—Only two cases of this disease came to the knowledge of the Medical Officer of Health. They both recovered.

**Diarrhœa** was most prevalent in the second and third quarters. Of the 6 who died from the disease 4 were under 5 years of age.

**Phthisis.**—There were 30 deaths recorded from this disease—yielding a death-rate of 2·3 per 1000 living. The mortality was spread over the year. Some of these cases were sent to Altrincham from other districts, in late stages of the disease when recovery was quite hopeless. The Medical Officer of Health personally knew of 4 such cases during the year. Thus, owing to the suitability of its climate for phthisical cases, the town is credited with a higher mortality from phthisis than fairly belongs to it.

Other diseases of the respiratory organs were most fatal in the last quarter of the year. In spite of the very mild weather in October, November and December, nearly half of the deaths from bronchitis and pneumonia occurred during these months.

The year, though not a particularly healthy one, has run an ordinary course, and presents no special features for comment. A considerable amount of sanitary work has been done, with the result of getting rid of much that was unsatisfactory and unwholesome, and keeping in order many places which, if neglected, might easily become sources of danger to the community. All houses from which cases of infectious disease were notified, were disinfected. Numerous visits were made to these houses and others. The Medical Officer of Health thanks the Inspector of Nuisances for his constant and vigorous co-operation in sanitary matters.

**Common Lodging-houses** were duly inspected during the year and were found clean. In all 47 visits of inspection were made.

**Slaughter-houses** were also kept under supervision—47 visits of inspection were made. In respect of 2, notices to clean and whitewash the premises were served on the owners. The others were found clean.

**Dairies and Bakehouses.**—All cow-sheds and milk-houses were visited during the year and found in satisfactory condition, except in one instance, where it was necessary to serve a notice requiring the owner of a cow-shed to provide proper drainage for the same. All bakehouses were also visited and found satisfactory.

**Canal Boats.**—Sixty-four visits of inspection were made to canal boats. The certificates of registration showed there was accommodation on board for 204 persons. The boats were occupied by 80 males, 19 females, and 17 children under twelve years of age. There was no case of infectious disease on any of the boats, and all the cabins, with the exception of 3, were clean and decent. In respect of these 3, notices were served on the owners.

**Nuisance Abatement.**—A very large number of nuisances were abated in 1894, a considerable proportion of the work being done without the serving of formal notices. Thirty five yards and passages were paved and 7 brick drains were replaced by properly jointed pipe drains. Thirty-five yard drains and 9 cellar drains were put in order, and 13 back yards were paved. Thirty-one privies and ashpits were pulled down and reconstructed, 47 ashpits were roofed and ventilated, 84 ashpits were provided with proper doors, 10 leaking ashpits were put in order, 9 ashpits, 2 privies and a W.C. (defective in various ways) were put in order, and 2 W.C's. without water-supply were provided therewith. Two sink waste-pipes were disconnected. Six accumulations of offal or horse manure were removed. In 4 cases the removal of animals, so kept as to be a nuisance, was obtained. In 2 cases the repair of dwelling-house roofs was obtained. Five notices were served in respect of overcrowding, and the nuisances were abated. Three area-grids and one house-flooring, broken and dangerous, were repaired. One person was proceeded against and fined ten shillings for keeping a dirty house. Three notices in respect of smoke nuisances were served.

Forty-three occupiers were reported for letting their chimneys get on fire. Of these 30 were fined by the justices, and 12 were cautioned. One case was dismissed.

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## HIGHER BEBINGTON.

### Urban Sanitary District.

Medical Officer of Health—DR. G. A. KENYON.

Population at Census, 1891—1421.

Estimated population in middle of 1894—1508.

Area in acres—699.

Birth-rate per 1000 living—25·2.

Death-rate per 1000 living—13·2.

Death-rate from seven principal Zymotic diseases—1·3.

Deaths under one year to 1000 births—26.

The area of the whole of Higher Bebington is 944 acres, but 245 of these are included in the County Borough of Birkenhead, leaving 699 acres in the Urban District of Higher Bebington.

In 1894, the births registered in the district numbered 38, the deaths (including one death in the Workhouse belonging to the district) numbered 20. The death-rate is low, and the proportion of deaths among infants is very small.

There was one death from scarlatina and one from measles. These both occurred in the same family, and were the only deaths from zymotic disease. There were also 2 deaths from phthisis and 3 from heart disease, and there was one death from bronchitis.

There were four cases of infectious disease notified, viz. : 3 scarlatina and 1 diphtheria. The cases of scarlatina occurred respectively in July, September, and December. The cases were duly inquired into and proper precautions taken and there was no extension of the disease. One case was removed to the hospital.

The Medical Officer of Health made a general inspection of the district in June, and was pleased to find a substantial improvement had been made in several places by the conversion of privies into water-closets—six privies were converted during the year. This work of conversion is being proceeded with.

The district is supplied throughout with water from the Wirral Water Works. In April a sample was submitted to the County Analyst, and his report shews it to be of a very high degree of organic purity.

The district is on the whole well sewered, and the sewers are flushed as required.

Two reported cases of overcrowding were inquired into and found not to be of a serious character. In both instances the house was clean and occupied solely by the members of one family.

The ashpit emptying is done by a contractor engaged by the Board.

The removal of nuisances is promptly attended to by Mr. Lloyd, the Inspector, who gives a very complete report of the work done in his department.

There are 2 bakehouses and 12 registered dairies and cow-sheds, all regularly inspected. There are no slaughter-houses and no lodging-houses in the district.

Five houses were disinfected after infectious disease.

The handbills issued by the County Council, giving precautions against the infection of phthisis or consumption, were distributed to every house in the district.

The district is contributory to the Joint Hospital Board, thus having accommodation for infectious disease.

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## LOWER BEBINGTON.

### Urban Sanitary District

Medical Officer of Health—DR. G. A. KENYON.

Population at Census, 1891—5216.

Estimated population in middle of 1894—5503.

Area in acres—1054.

Birth-rate per 1000 living—33·0.

Death-rate per 1000 living—16·3.

Death-rate from seven principal Zymotic diseases—3·2.

Deaths under one year to 1000 births—131.

This Urban District includes the whole of New Ferry.

In 1894, the births registered in the district numbered 182, the deaths (including 2 that occurred in the Fever Hospital and 5 in the Workhouse, belonging to the district) numbered 90. The birth-rate is fairly high. The death-rate is low, yet the death-rates of 1891, 1892 and 1893 were even lower. The proportion of deaths among infants is not exceptionally large.

There were 19 deaths from zymotic diseases, viz:—8 measles, 2 scarlatina, 1 diphtheria, 1 typhoid fever, 1 puerperal fever, 1 whooping-cough, 1 death from erysipelas, and 4 infantile diarrhœa. There were also 6 deaths from phthisis, 15 from bronchitis or pneumonia, 8 from heart disease and 1 from injuries. The mortality from zymotic disease was chiefly at New Ferry and on the east side of the railway.

There were 76 cases of infectious disease notified, viz.:—58 scarlatina, 7 diphtheria, 6 typhoid fever and 5 erysipelas. Of these 41 cases of scarlatina and 4 of typhoid fever were removed to hospital. Thus 70 per cent. of the scarlatina cases and 66 per cent. of the typhoid cases were isolated in hospital. This, the Medical Officer of Health remarks, reflects great credit on those specially concerned—the medical practitioners who urged removal, the people who submitted to be separated from their children and relatives, and the hospital authorities for the confidence they must have inspired. Although the total of scarlatina cases seems a large number there was no great spread of the disease at any time. In March and August the disease was prevalent, and cases were scattered throughout the year. The proportion of fatal cases was small. Mr. Young the Surveyor and Inspector saw to the disinfection of infected houses and the remedying of sanitary defects. Only in very few cases was there recurrence of the disease after early removal to hospital. The disease was not spread by milk or water supply. It was prevalent in adjoining districts.

Measles was epidemic in the spring. Acting on the advice of the Medical Officer of Health the managers closed the New Ferry School for several weeks in March, with a view to check the spread of the disease. These Schools were at the same time thoroughly cleansed and colour-washed. The Schools in Bebington village were closed, with the same object, in May, for three weeks.

The Medical Officer of Health has visited the district from time to time during the year, and made special and general inspections.

The duties of the Surveyor and Inspector are carried out energetically, as the following report indicates. Sixty-nine privies have been converted into water-closets, 10 defective and foul water-closets have been put in repair, 7 defective and foul drains have been made good and three foul cisterns have been emptied and filled in. Three notices have been served on tenants for slaughtering cattle on unlicensed premises, and three

notices have been served for the removal of cattle. Two convictions were obtained for improperly keeping swine. Two notices were served for the prevention of overcrowding.

Three insanitary dwellings have been demolished in the Wynt, in completion of the process against insanitary property, under the Housing of the Working Classes Act, referred to in the last Annual Report.

Several notices were served in respect of the improper deposit of night soil from Birkenhead, and the notices were duly followed up.

The emptying of ashpits has been efficiently carried out by the servants of the Board, under Mr. Young's direction.

Every house in the district is supplied with water from the mains, except four in Cross Lane, Bebington; and steps are being taken to supply these.

The milk-houses and slaughter-houses continue to receive careful attention and are generally well kept.

The district is efficiently sewered and a first-rate portable tank is used for flushing.

The Inspector is very attentive to his duties, and considerate and firm in carrying them out.

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## BOLLINGTON.

### Urban Sanitary District.

Medical Officer of Health—Dr. J. ALLEN.

Population at Census, 1891—3913.

Estimated population in middle of 1894—3913.

Areas in acres—494.

Birth-rate per 1000 living—27·8.

Death-rate per 1000 living—14·5.

Death-rate from seven principal Zymotic diseases—1·7.

Deaths under one year to 1000 births—137.

This Urban District forms only a part of the Township of Bollington. The remaining part (797 acres, having a population of 1422) till recently formed a portion of the Macclesfield Rural Sanitary District. At the Census of 1871 the Bollington Local Board District, with Bollington Cross and Kerridge, contained a population of 5038. In 1881 the population of this area was 5464, and in 1891 it was 5335. The Local Board District had a population of 3666 in 1871, 3963 in 1881 and 3913 in 1891. The population does not appear to have increased appreciably since then.

After the passing of the Parish Councils Act an attempt was made to induce the inhabitants of the Urban and Rural portions of the Township of Bollington to agree to amalgamation for the better and more economical government of the Township. This, however, was unsuccessful, the rural portion

preferring to set up a Parish Council of its own, though not having drainage, water-supply or lighting. This Council consists of twelve members and is called the Kerridge Parish Council. The rateable value of the undivided Township of Bollington, being about £15500, would have made it possible to have carried out certain necessary improvements, which the Medical Officer of Health fears neither portion will be able to effect apart.

In 1894 the births registered in the Bollington Urban District numbered 109, and the deaths numbered 57—both numbers being exactly the same as those recorded in 1893. The death-rate is considerably below the mean rate of the last ten years. Seven of the deaths were certified as due to scarlatina, 1 to erysipelas, 5 to phthisis, 7 to bronchitis or pneumonia, 4 to heart disease, and 1 to injuries.

**Infectious Disease.**—The number of cases of infectious disease notified was 69, viz. : 59 scarlatina, 1 typhoid fever, 1 puerperal fever, and 8 erysipelas. Notification of infectious disease has been compulsory in the district since January, 1890.

**Scarlatina** was present from January to September. Thirty-five of the cases occurred to the east of the Canal and Aquaduct, and 24 to the west of the Canal and Aquaduct. Of the whole number infected 24 were under five years of age. The first case (a mild one) occurred on January 19th, in Queen Street, and the next on February 12th, in Park Street. Early in March a number of fresh cases appeared, all except one being in the eastern part of the district. By the end of this month there had been 18 cases, 3 of which terminated fatally. The disease was by this time epidemic and especially prevalent among school children, while there was no isolation hospital in or near the district, so that it was thought best to close the elementary schools for a month. The closing had evidently a beneficial effect in checking the spread of the disease, as there was only one case during April. Between May 27th and June 7th, 12 cases were notified, all occurring in the western part of the district. Referring to this fresh outbreak, the Medical Officer of Health reported on June 5th, "The source of infection would seem to have been in that portion of Bollington Cross which is in the Rural Sanitary District of the Macclesfield Union. It is very unfortunate that an invasion of this nature should take place from a part of the Township of Bollington over which the Board has no control, at a time, too, when the rest of the district is becoming free from the disease, and affords a striking example of the urgent necessity that exists for placing the whole Township under one Sanitary Authority." Further cases of scarlatina appeared from time to time in different parts of the district until September 18th. During this epidemic the Medical Officer of Health felt the need of an apparatus for



disinfecting bedding, &c. The Inspector distributed disinfectants liberally in all cases, and carried out instructions with regard to fumigation and otherwise.

**Erysipelas.**—Several of the 8 cases reported occurred on premises found on inspection to be in an insanitary condition. Disinfectants were supplied in every case. Only one case proved fatal. This was an infant at Lower Houses. Another infant was attacked at a house in Princess Street where there had been scarlatina.

**Fevers.**—The only case reported of typhoid fever occurred in Henshall Road. The source of infection could not be traced, but the premises were found to be badly drained. The patient recovered. The only case reported of puerperal fever occurred in Palmerston Street. The patient, who had had twins, recovered after a long and dangerous illness.

**Small-pox.**—An outbreak of this disease, of a modified type, took place in a semi-detached house in Cow Lane, Kerridge, Bollington, just outside the Urban District, in July. As several of the inmates left the house in question, in order to escape infection, and took refuge in Park Street, which is within the Urban District, the Medical Officer of Health took steps to have these re-vaccinated, and the whole family carefully watched. In this way the disease was kept out of the Urban District. A special Report on this outbreak was made at the time and referred to the Local Government Board.

**Inquests.**—Two inquests were held during the year. The first was on the body of an old woman—the cause of death was found to be an accidental injury. The second was on the body of a woman of 40. The woman was the mother of a large family, and her death took place soon after childbirth, no medical man having been in attendance. Death was ascribed to exhaustion.

**Hospital Accommodation required.**—During the prevalence of scarlatina there were many patients who could not be properly housed and isolated at home. Yet these remained at home as sources of infection to their families and neighbours. The Medical Officer of Health believes that if there had been a hospital near at hand to which they could be removed, the outbreak would have been less severe and perhaps some lives saved. The Urban District being liable to be infected by zymotic diseases imported from the Kerridge District, the proper course would be to construct a Joint Hospital for the use of patients from both Kerridge and Bollington. The erection of a hospital is a matter of urgency and would be far better undertaken, at a time, like the present, when zymotic disease is absent, than done hurriedly in a period of panic. Indeed it is now generally considered that notification is not of much use without a hospital.

**BOWDON.****Urban Sanitary District.**

Medical Officer of Health—DR. P. H. MULES.

Population at Census, 1891—2792

Estimated population in middle of 1894—2840.

Area in acres—850.

Birth-rate per 1000 living—12.3.

Death-rate per 1000 living—8.8.

Death-rate from seven principal Zymotic diseases—1.7.

Deaths under one year to 1000 births—57.

The number of births registered in this district was 35, and the number of deaths was 25. The birth-rate and death-rate are usually low in Bowdon—during 1894 they were exceptionally low.

Eleven cases of infectious disease were notified, that is, 10 cases of scarlatina and 1 case of erysipelas. One of the cases of scarlatina proved fatal. It was not found possible to trace the source of this disease, but the type was bad, and two of the nurses employed were stricken with septic throats, one of the two being removed to the infectious disease hospital.

The case of typhoid fever, which appears in the death-return, is the only case which came to the knowledge of the Authority. This and one other are the only cases of typhoid fever since the sharp outbreak of the disease which occurred six years since.

A mild type of measles was epidemic in the district during the year and in consequence the Church Schools were closed for a fortnight. However as the weather was mild chest complications were exceptional, and out of a large number of cases but two ended fatally.

The only other fatal case of zymotic disease was one of diarrhoea in a very young child.

With reference to two fatal cases of phthisis reported the Medical Officer of Health remarks that “these tuberculous cases are a new experience with us and appear to have developed with the growth of the consumption hospital in our midst. The authorities of that institution appear to have become aware that tubercle is an infectious disease capable of being spread in various ways. They have, I learn, now restricted the patients from wandering around the township and sowing tubercle on every pathway. This restriction is much to be desired and a continuance commended.”\*

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\* In the last Annual Report of the Medical Officer of Health for Bowdon, he pointed out that phthisical visitors were attracted to Bowdon and contiguous districts by the Consumption Hospital, and that an increase of tuberculous affections among permanent residents could scarcely be doubted. He added that this need not occasion wonder, considering the infectious nature of tuberculosis and its easy transmission in dust, especially by means of phthisical sputa.

On July 17th, 1894, shortly after this Report was printed and issued, the County Medical Officer of Health received a communication from Dr. Ransome, Physician to the Manchester Hospital for Consumption and Diseases of the Throat. In this he protests against an accusation, unsupported by any figures, and calculated to do great harm to a most valuable institution, being made in a public Report. He believes the accusation to be "absolutely without foundation," on the following grounds:—

1. That care has always been taken with regard to the sputum.
2. That no case of phthisis has ever arisen among the servants, nurses or other attendants of the Hospital.
3. That female patients have been kept as servants, for a year or more after being cured of bacillary phthisis, without any return of the disease.
4. That (so far as Dr. Ransome's observation goes) there have been no cases of the disease that have originated in any of the houses surrounding the Hospital, or anywhere near it.

On December 26th, Dr. Ransome addressed a second letter to the County Medical Officer of Health, sending it under cover to Dr. Sidebotham, who represents Bowdon on the County Council. In this he says "owing to the courtesy of the Registrar General, I have, after some delay, succeeded in obtaining a return of all the deaths from the disease in Bowdon, in each year from April, 1885, to March, 1893. I am not allowed to mention any names, but I send you a tabulated analysis of the return:—

**Deaths from Phthisis in Bowdon in the 9 years ending  
March 31st, 1893.**

| Years ending March 31st. | 1885     | 1886     | 1887     | 1888     | 1889     | 1890     | 1891     | 1892     | 1893     | Total.    |
|--------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| Low lands .. .. .        | 0        | 2        | 0        | 3        | 0        | 0        | 1        | 3        | 0        | 9         |
| High lands ... .. .      | 0        | 2        | 3        | 1        | 0        | 4        | 2        | 1        | 0        | 13        |
| Hospital for Consumption | —        | —        | 2        | 5        | 0        | 0        | 0        | 3        | 0        | 10        |
| <b>Total</b> ... .. .    | <b>0</b> | <b>4</b> | <b>5</b> | <b>9</b> | <b>0</b> | <b>4</b> | <b>3</b> | <b>7</b> | <b>0</b> | <b>32</b> |

and I affirm—

1. That no death from phthisis took place in these nine years, within several hundred yards of the Hospital.
2. That the number of deaths from this cause has not increased in Bowdon, since the establishment of the Hospital in Bowdon.
3. That, out of the total number dying in that period, six were imported cases, *i.e.* they had contracted the disease elsewhere, three others were domestic servants, and therefore probably also imported, and one (age 63) is marked as doubtful. Only three cases on the higher ground and nine on the lower clay-lands remain, as the total phthisis death-rate of the community during the nine years.

"I venture to appeal to you as to whether these facts and the accompanying table do not show, (1) that Bowdon is an exceptionally good place for a Consumption Hospital, and (2) that there is no evidence that the disease has spread there, since the advent of the Hospital in the year 1885.

"I may add that I have ascertained that in the previous nine years 1876 to 1884, there were 22 deaths, 11 on the high ground and 11 on the surrounding clay lands, most of the former being imported cases."

"The river Bollin is as usual sewage laden," but the Medical Officer of Health understands that strenuous efforts are being made to induce Macclesfield to cease from polluting the

river and this may be followed by a general improvement in the condition of the waterway.

The water-supply is derived from Manchester, nothing therefore need be said as to its quality.

Examinations of the poorer parts of this district have as usual been made.

The willow-beds, where the sewage is treated, have been frequently visited. The desirability of continuing to deal with the sewage in this way is an open question. During the winter there is no root action, as is evidenced by the enormously increased area of the sewage flow compared with the area of flow during the rest of the year. It is noted also, that the channels become lined with a layer "of paper-like consistency and slight porosity," this necessitating "continual scraping and close attention, or it acts like glazed pipes, conveying unchanged sewage to the effluent."

## BREDBURY AND ROMILEY.

### Urban Sanitary District.

Medical Officer of Health—DR. F. CANT.

Population at Census, 1891—5281.

Estimated population in middle of 1894—6009.

Area in acres—3725.

Birth-rate per 1000 living—29·9.

Death-rate per 1000 living—15·6.

Death-rate from seven principal Zymotic diseases—1·4.

Deaths under one year to 1000 births—122.

Bredbury (including Woodley, Hatherlow, Castle Hill and Bredbury Green) has an area of 2536 acres, and the population at the Census was 3901. Romiley (including Greave) has an area of 1189 acres, and the population at the Census was 1920. The estimated population of Bredbury is 4001, and the estimated population of Romiley is 2008.

In Bredbury there were 119 births and 60 deaths registered, and there were 97 cases of infectious disease notified, of which 11 were removed to hospital.

In Romiley there were 61 births and 34 deaths registered, and there were 26 cases of infectious disease notified, of which one was removed to hospital.

In Bredbury the birth-rate was 29·7 and the death-rate 14·9. In Romiley the birth-rate was 30·3 and the death-rate 16·9.

**Infectious Disease notified.**—The cases notified in Bredbury were as follows:—84 scarlatina, 4 diphtheria, 1 membranous croup, 3 typhoid fever, and 5 erysipelas. The cases notified in Romiley were as follows:—18 scarlatina,

3 diphtheria, 4 membranous croup, and 1 typhoid fever. In Bredbury there were two deaths from scarlatina and one from diphtheria. In Romiley there was one death from diphtheria and there were four deaths from membranous croup.

In the whole district the death-rate from the seven principal zymotic diseases, taken together, is equal to 1·4 per 1000 living. The death-rate from phthisis alone is also 1·4.

**Scarlatina.**—Occasional cases of scarlatina were notified during the spring and summer, chiefly in Romiley and Hatherlow. Early in October the disease appeared in Bredbury, and spread rapidly among the children attending St. Mark's School. The schoolmaster and teachers were at once put on their guard, and every child was examined, with the result that three in one class showed signs of having recently had scarlatina, and were at once sent home and isolated till desquamation was completed. Nearly all the cases for the week before and after were in the same class at school, and (as might have been expected) the disease soon spread wider. The school was then closed for ten days, and well swept, dusted and disinfected. This appeared to have a decided influence in checking the course of the disease, but a large proportion of the scholars were absent when the school re-opened. This school was closed earlier than usual for the Christmas holidays, and again thoroughly cleansed and scoured. About the same time a severe frost set in and lasted several weeks. There was a marked diminution in fresh cases after Christmas. But two were notified in the week beginning December 26th, since which there have been only a few scattered cases. During the epidemic every case was visited, and where isolation and satisfactory nursing could not be obtained at home the patients were sent to the hospital at Hyde. The disease was of a mild type. As regards the infectious children attending St. Mark's School, the Local Board made complaint to the parents, and received in reply letters explaining the matter and expressing regret. Accordingly no legal proceedings were taken. The Medical Officer of Health hopes that after such an experience parents will more fully understand the importance of watchfulness and early notification.

**Abatement of Nuisances.**—Both the Medical Officer of Health and the Inspector visit every part of the district frequently, and draw attention to any sanitary defects discovered. In many cases these are attended to without further trouble; in all others written notices requiring abatement are sent, and the cases entered in the Inspector's book. These notices are read at the monthly meeting of the Sanitary Committee, and any further action is arranged for by the Committee. According to the Inspector's book, 61 notices were sent, of which 28 were satisfactorily attended to, 25 partly attended to, and 8 are not attended to yet. The rule that all ashpits shall be covered

over and the bottoms raised to the level of the surrounding ground has been strictly enforced, the number roofed over up to the end of the year being 25. Three cases of overcrowding were dealt with, satisfactory changes being made in each case.

Two cottages at Greave were condemned as unfit for human habitation.

**Dairies and Cow-sheds**, of which there are 55, were visited four times in the year. They are in a satisfactory state generally.

**Slaughter-houses**.—These have been considerably improved as to drainage and general cleanliness, and are now in a much better state than formerly. One had to be closed altogether, as it was a room, and communicated directly with the rest of the house. In another case notice was sent requiring certain alterations, or removal to a more suitable site.

**Sanitary Accommodation at Schools**.—The new sanitary accommodation at Hatherlow School continues to work satisfactorily. The managers of St. Mark's School, Bredbury, have made considerable improvements too. The whole of the drains have been relaid and connected with the main sewer in Redhouse Lane, and five new "wash-out" closets have been provided.

**Water-supply**.—This has been well maintained, except that in the higher parts of the district there have been complaints of deficiency of pressure, some of the taps only yielding a supply during the night, when the water is not being drawn off elsewhere. For this the Stockport Water Works Company were in default. They were written to, and some improvement was made; but the pressure is still unsatisfactory. Seeing this, the owner of the higher land collected the water from several springs in Werneth Low, the water of which was analysed and found good, and laid pipes from there to new houses now being erected in Salter's Lane, Woodley. These pipes will probably be laid further, supplying other houses in the higher part of the district where water is needed. The main drains are flushed in all parts of the district once a month, 30,000 gallons of water per month being used for this purpose.

During the year four samples of water were sent for analysis to the County Analyst. The sample from the town's main was found very satisfactory; a sample from Greenhead well, Bredbury Green, was also found satisfactory; a sample from Paddin Brook well, Romiley, was found unsatisfactory, and the well was closed; and a sample from an old spring and well, Green Lane, Romiley, was found unsatisfactory, and the use of the water was stopped for human beings, but allowed for a cattle trough. Nine cottages, which had been using water from Paddin Brook well, were supplied with town's water. In addition, the town's water has been connected to 13 new houses in Romiley, and 15 new and 6 old houses in Bredbury.

**Main Drainage.**—The system of main drainage, referred to in the last two Annual Reports, has been considerably advanced, especially that portion intended for the use of the Romiley district, for which there was the most need. About two-thirds of a mile of this is already finished, and about a third of a mile is in course of construction. It commences near Hatherlow Chapel, and passes along Green Lane and Stockport Road, Romiley, as far as the post-office. Up to the present 42 houses have been connected with it, of which 14 are on the waste-water flushing system, having a 5-gallon flush discharged mechanically. This is the system which has found most favour with the Local Board, and a resolution has been passed making its adoption compulsory wherever it can be applied. The plan for the main drainage of the Bredbury part of the district has been advanced somewhat; but owing to the difficulty of purchasing a site for outfall works the work has been retarded. A Provisional Order to enable the Sanitary Authority to put in force the compulsory powers of purchase of the Lands Clauses Acts was applied for and granted on March 31st, 1894. After this the serious illness of the owner of the site chosen at Broadmeadow, Bredbury, and the negotiations as to disturbance of a rifle range, delayed the completion of the purchase. In the meantime, the Local Board made efforts to secure the only other available land near Vernon Park, but the Stockport Corporation stepped in and secured it over their heads, and subsequently made overtures to Bredbury to connect to the Stockport scheme. Information as to area, population, probable quantity of sewage, &c., has been furnished to the Stockport Corporation, and the matter is now under their consideration.

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## BROMBOROUGH.

### Urban Sanitary District.

Medical Officer of Health—DR. G. A. KENYON.

Population at Census, 1891—1662.

Estimated population in middle of 1894—1761.

Area in acres—1555.

Birth-rate per 1000 living—31·2

Death rate per 1000 living—9·6.

Death-rate from seven principal Zymotic diseases—0·5.

Deaths under one year to 1000 births—90.

This Urban District includes Bromboro' Pool.

In 1894 the births registered in the district numbered 55; the deaths (including three occurring outside the district among persons belonging thereto) numbered 17. The death-rate is very low, and the proportion of deaths among infants is small. The adult deaths include one from phthisis, two from bronchitis, and one from injuries.

The only death from zymotic disease was one from scarlatina; but another case of scarlatina died from an accidental scald while being bathed.

Thirty-three cases of infectious disease were notified, viz.:—30 of scarlatina, two of typhoid fever, and one of diphtheria.

**Scarlatina.**—There were two outbreaks of this disease during the year. The first occurred in the summer months, at the Pool village, and affected four households only. This disease was prevented from spreading by prompt removal of the patients to hospital, disinfection of infected houses, and the closing of the schools for the holidays a little earlier than had been intended. However, several months later the disease recurred in one of these houses. The second outbreak commenced suddenly among children attending Bromboro' village school, in November. One household was affected on November 3rd, one on the 18th, three on the 20th, one on the 22nd, two on the 24th, and four on the 25th. On December 17th another household was affected, on the 20th two households, and on the 28th one household. The school was closed by the advice of the Medical Officer of Health on November 21st, and has since been thoroughly cleansed and whitewashed. A large proportion of the cases were at once removed to hospital, and disinfection and cleansing of the infected houses was promptly done. In one family six children were attacked almost simultaneously and removed to hospital. The outbreak is not attributable to the milk (for this was supplied to the families attacked from several different persons), nor to the water. It would seem to have been at first in some way closely connected with school attendance. The case notified on November 3rd was at once removed to hospital, and the other children belonging to the same family were kept from school for a fortnight. These children returned to school a little before the outbreak began, but too short a time before to be the likely cause of it, especially as none of them were themselves attacked. The schools have not yet been re-opened (January 10th, 1895). It is noteworthy that scarlatina was very prevalent in neighbouring localities at the time, so that the Fever Hospitals at Spital and Chester were full of scarlatina cases.

The cases of typhoid fever and diphtheria were also duly investigated and the usual precautions taken.

The Medical Officer of Health has visited the district from time to time and made special and general inspections; more particularly in respect of the mill-dam and the Magazines village. The mill-dam was found to be practically free from sewage contamination and the deposits of mud chiefly composed of earthy and vegetable matters, which should be removed or kept submerged to avoid cause for complaint or nuisance. The Magazines village was ascertained to be in want of good water, and some



rectification of the sanitary arrangements: the attention of the proprietors is being very fully directed to the matter.

The system adopted by the Board for the removal of refuse, works satisfactorily. During the year but one privy has been converted into a water-closet.

There are six milk sellers on the register, whose premises are visited by the Inspector about four times a year. The premises are whitewashed every six months and are all in good condition. The two bakehouses in the district are also kept clean and in good order.

The sewers are all in proper working order and are flushed regularly once a week.

No cases of overcrowding have been reported. No prosecutions, from any cause, have been undertaken.

The only houses deficient in proper water-supply are those at the Magazines village.

Mr. Gittins, the Inspector, is prompt and attentive to his duties. He makes a house-to-house inspection once a month, taking the district in sections.

## BUGLAWTON.

### Urban Sanitary District.

Medical Officer of Health—Dr. P. M. DAVIDSON.

Population at Census, 1891—1382.

Estimated population in middle of 1894—1382.

Area in acres—2911.

Birth-rate per 1000 living—38·3.

Death-rate per 1000 living—18·8.

Death-rate from seven principal Zymotic diseases—1·4.

Deaths under one year to 1000 births—169.

During the year 53 births were registered. The birth-rate for 1894 is 10·8 above the mean birth-rate of the six years 1888-93. During the year 26 deaths were registered. The death-rate for 1894 is 2·6 above the mean death-rate of the six years 1888-93. Of the births 24 were males and 29 females. Of the deaths 7 were males and 19 females. Nine deaths were of infants under one year old. The infant mortality is thus very high, but when the circumstances of these deaths are considered the usual significance of such a high rate is discounted, so far as the question of the proper care and treatment of the children is concerned. Three of the nine children were prematurely born and lived respectively 2, 2 and 9 days. One was born with a condition of the lungs which rendered it impossible for it to live, and one was asphyxiated at the time of birth. In none of the nine cases does it appear that the death could have been influenced by any bad sanitary conditions to which the deceased was exposed subsequent to birth.

It will be observed that the deaths of females were nearly three times as numerous as those of males. The explanation of this is, no doubt, that females being almost exclusively employed in the factories, the number of women living in the district is always much greater than the number of men.

**Zymotic Diseases.**—The following cases of zymotic disease came under the notice of the Medical Officer of Health:—16 scarlatina, a few cases of diarrhœa and a considerable number of whooping-cough. There was one death from diarrhœa and a one from whooping-cough. The zymotic death-rate was above the mean death-rate of the six years 1888-93.

**Scarlatina** was imported into the district in March by a child who had been staying with relatives outside the district. The house where the child lived was sufficiently large to admit of complete isolation, and notwithstanding there was a large family of young children in it, none of them became infected. In August there was an outbreak among the children attending Key Green Infant School. Fifteen children were affected, nearly all simultaneously. It was found that in June a child from Lancashire, suffering from what was afterwards proved to be scarlatina, had stayed some days in a house at the Cloudside, one of the children from which attended the Key Green School. Early in July this last child was kept at home for a few days because it was not very well and had a rash, and then returned to school. His skin was found to be desquamating at the time the outbreak among the other children was discovered, and there can be no doubt as to his having infected them all. The school was closed for several weeks, and from the time it was re-opened up to the end of the year no fresh case occurred. The outbreak was confined to the Cloudside.

**Whooping-cough.**—An outbreak of this disease of a mild character, confined to Church Bank and the immediate neighbourhood, began in September and was virtually over by the end of November. Late in December the disease again appeared in a more severe form, and was then confined to Cloudside and that neighbourhood. This outbreak was in progress at the close of the year.

**Influenza** was epidemic in January and February, and cases occurred at intervals throughout the year. There was only one death from influenza.

**Water-supply.**—Although there was less suffering than usual from insufficiency of water in 1894 owing to the greater rainfall, the insufficiency was felt very much in some places. The Local Government Board has now approved of the proposed water scheme, and the Medical Officer of Health hopes to be able to say in his next Annual Report that there is an abundant and excellent supply for the whole district.

**Notification of Infectious Disease.**—The Infectious Disease Notification Act has been in force for two years but only about three notifications have been made to the Medical Officer of Health in that time, and these were not received in any instance earlier than a week after the cases had in other ways come under notice. It would almost seem that neither medical men nor householders fully appreciate their obligations under this Act. The Medical Officer of Health called attention to this matter some time ago. When the next instance of neglecting to notify is brought to his knowledge, he will ask the Authority to take proceedings against the person in default, whoever he may be.

**General Sanitary Work.**—The general sanitary work was well attended to, and the ashpits and privies were kept in good order.

The Medical Officer of Health visited the whole district several times in the course of the year.

**Hospital Provision.**—The matter of providing a hospital for the isolation of infectious cases has been before the Authority. The population of the district is so small that the expense of building and maintaining a hospital would be very considerable. The Medical Officer thinks it will be better to let the question rest for a short time, as it is probable a hospital will be built for Congleton, and the Buglawton Authority might then be able to arrange for the isolation of their cases more economically.

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## CHEADLE AND GATLEY.

### Urban Sanitary District.

Medical Officer of Health—DR. J. H. GODSON.

Population at Census, 1891—7782.

Estimated population in middle of 1894—8098.

Area in acres—5812

Birth-rate per 1000 living—24·9.

Death-rate per 1000 living—13·0.

Death-rate from seven principal Zymotic diseases—1·1.

Deaths under one year to 1000 births—128.

This Urban District was constituted by a Local Government Board Order, which came into operation in August, 1886. It was formed by uniting Stockport Etchells (including Gatley) with part of Cheadle (including Cheadle Hulme, Outwood, and part of the former parishes of Cheadle Bulkeley and Cheadle Moseley). The area and population at Census of these two portions of the district are as follows:—

|                          | Area in<br>Acres. | Population at<br>Census. |
|--------------------------|-------------------|--------------------------|
| Stockport Etchells ..... | 1572              | 1444                     |
| Part of Cheadle.....     | 4240              | 6808                     |

From the population of Stockport Etchells should be deducted 156 enumerated in the Barnes Convalescent Hospital, and 314 enumerated in the Royal Lunatic Asylum, thus making the population of Stockport Etchells at the time of the Census 974.

The Annual Report of the district for 1894 is presented by Dr. J. H. Godson, in conjunction with his father (Dr. A. Godson), who resigned the post of Medical Officer of Health in October.

In 1894 the number of births registered in the whole district was 202, and the number of deaths registered in the whole district (exclusive of those in the Convalescent Hospital and Lunatic Asylum, and inclusive of one death in Hyde Hospital) was 106.

The number of deaths from zymotic diseases was as follows:—1 small-pox (at the Hyde Hospital), 1 scarlatina, 2 diphtheria, 2 membranous croup, 3 measles, 1 puerperal fever, 1 erysipelas, and 1 diarrhœa.

The birth-rate is low. The death-rate and zymotic death-rate are very low.

The district is almost entirely an agricultural and residential one. The few trades carried on locally are all healthy trades. As regards these there was no alteration or increase in the number during 1894. The health of the operatives is good.

**Cases of Infectious Disease Notified.**—As in 1893, almost every case of infectious disease was introduced into the district from the neighbouring towns, Manchester and Stockport, and in that part of the district which adjoins the Borough of Stockport the majority of the cases occurred. The number of cases of infectious disease notified in 1894 was 52, viz.:—2 small-pox, 28 scarlatina, 9 diphtheria, 2 membranous croup, 2 typhoid fever, 2 puerperal fever, and 7 erysipelas.\* As soon as each case was notified the Medical Officer of Health at once visited the house, and, with the Medical Attendant and the aid of the Inspector, took all possible precautions to prevent the spread of the disease. The results were fairly successful considering the means for checking the spread of infection at the disposal of the Medical Officer of Health and the lack of a hospital for infectious diseases.

**Small-pox.**—Of the two cases notified, one was only suspected of being the disease. The other case was contracted in the Borough of Stockport, where the patient worked. His home was in Adswold, Cheadle. He was immediately removed to the Hyde Hospital, where he died. All the members of his family were vaccinated, and the house was thoroughly disinfected. None of the family took the disease. Beside the cases

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\* There were also 4 cases of erysipelas and 1 case of scarlatina at the Convalescent Hospital, which were removed to Monsall Hospital. No cases of infectious disease were notified from the Lunatic Asylum.

notified a case occurred in June at Stockport, among the men employed on the Stockport Sewage-Outfall Works, in this district. The Medical Officer of Health, together with the Stockport Medical Officer of Health, made an inspection of all the men employed at the Works, and re-vaccination was advised. No other case occurred.

**Scarlatina.**—The number of cases of scarlatina reported indicate that the disease was not very prevalent. Most of the cases occurred at the Stockport border of the district, and there the disease was communicated owing to the want of proper means of isolation. For instance, on visiting houses the patient was found in the same room as the other children. The disease was of a mild type.

**Diphtheria.**—Most of the cases of diphtheria were not of a serious nature, but two were fatal. In one of these the drainage of the house was defective, and ran in close proximity to a well which supplied water to the household. Most of the other cases occurred in the very wet part of the summer and seem to have arisen from climatic causes.

**Erysipelas.**—The cases of this disease notified were mostly facial and idiopathic. The only fatal case was that of a baby a few days old.

**Hospital accommodation required.**—As regards hospital accommodation for infectious disease, the Medical Officer of Health repeats what has been stated in former Reports, that there is none. The Hyde Corporation consent to receive cases of small-pox in their Hospital so far as their accommodation will allow,—but there is no arrangement at all for other cases of infectious disease. No steps were taken by the Local Board to make the needed hospital provision, but doubtless the matter will receive the attention of the Urban District Council. The Medical Officer of Health notes that in the Report of the County Medical Officer of Health on Isolation Hospitals it is stated that there is reason to expect Cheadle and Gatley may find accommodation at Monsall Hospital. He does not think this expectation is likely to be realized. The Convalescent Hospital and Asylum are connected with the Monsall Hospital, and send their infectious cases to the Monsall Hospital. It is to these cases no doubt that the County Medical Officer refers, when he says in his Report that cases are reported to have been sent to Monsall from Cheadle and Gatley.

**Water-supply.**—The water-supply obtained from the Stockport Water Works Company is sufficient. Since the last Annual Report was issued, Dr. Porter, Medical Officer of Health for Stockport, has made a very full report on the water supplied by the Water Works Company. The samples that were tested were found on the whole to be good.

**New Houses.**—During the year 19 new houses have been erected and inspected by the Surveyor. The requirements of the bye-laws have been duly observed. The new houses were all supplied with water-closets.

**Main Drainage.**—During the year about  $1\frac{1}{4}$  miles of new sewers were laid in the main roads and private streets, and all the houses abutting on these streets were connected therewith. The houses directly affected by these improvements number 193. There is now only one part of the district in which new sewers have to be constructed to complete the main drainage scheme.

**Dairies and Cow-sheds.**—Regulations applying to these were issued in December by the Local Board. The Medical Officer of Health, in company with the Inspector, visited the dairies and cow-sheds in the district, 54 in all. They are now being registered and supplied with the Board's Regulations, and the Medical Officer of Health and the Inspector will see that these are strictly observed.

**Slaughter-houses.**—These are still unlicensed. The Medical Officer of Health with the Inspector visited them. They were found to be better kept than in the past, but as regards some there is still room for further improvement. There are 5 slaughter-houses in the district. No new ones have been built and none closed during the year.

No unwholesome food as far as is known, has been exposed for sale in the district.

There are no common lodging-houses in the district.

**Inspector's Report.**—The Inspector reports that during the year 37 complaints were received, 1500 houses and premises were inspected, and 600 houses and premises were re-inspected. Thirty orders were issued requiring sanitary amendment of houses, &c., 18 houses, &c., were cleansed, repaired and whitewashed, and 9 were disinfected. In 44 houses the drains were repaired, cleansed, trapped, &c., and 410 houses were re-drained, the drains being properly ventilated and trapped. Four closets were supplied with water, 9 were provided and 21 repaired. Ten new cisterns were erected, and 4 pump-wells were cleansed, repaired and covered. Two new dust bins were provided, and 27 dust bins were repaired, cleansed, &c. Seven animals kept so as to be a nuisance, were removed.

The emptying of ash-pits, &c. is supervised. The number of loads of refuse removed during the year was 3018.

The work of paving and lighting private streets has been continued. There are still some in a very bad condition requiring attention as soon as possible.

**Recreation Ground.**—During the summer a field was kindly lent by a gentleman for a common recreation ground, and it was much used and appreciated by the children. It is to be

regretted that the owner could not, owing to the situation of the field, continue to allow it to be used. From private information the Medical Officer of Health understands that funds for purchasing a recreation ground are likely to be partly provided by some residents in the district.

**Cemetery.**—The Medical Officer of Health again draws attention to the overcrowded state of the churchyard. As was stated in the last Annual Report, the early provision of a suitable burying-ground is very necessary.

The whole district is inspected from time to time and reports as to its state are made, and advice given, monthly. The health of the district has been good, and the amount of general sickness at the end of the year was much below the average.

## CHORLEY.

Urban Sanitary District

NOW

## ALDERLEY EDGE

Urban District.

Medical Officer of Health—DR. G. W. DOWLING.

Population at Census, 1891—2270.

Estimated population in middle of 1894—2270.

Area in acres—589.

Birth-rate per 1000 living—18·9.

Death-rate per 1000 living—11·8.

Death-rate from seven principal Zymotic diseases—1·3.

Deaths under one year to 1000 births—69.

The Urban Sanitary District of Chorley, now called the Urban District of Alderley Edge, is formed out of a part of Chorley, a part of Fulshaw and a part of Bollin Fee. The two latter include a formerly detached part of the parish of Pownall Fee. The area and population of these three portions of the district appear to be as follows:—

|                        | Area in<br>Acres. | Population<br>at Census. |
|------------------------|-------------------|--------------------------|
| Part of Chorley ...    | 476 ...           | 1838                     |
| Part of Fulshaw ...    | { 113 }           | 155                      |
| Part of Bollin Fee ... |                   | 277                      |

The number of births registered in the district, in 1894, was 43. The number of deaths registered in the district, in 1894, (excluding 3 deaths occurring in the district, but not belonging thereto) was 27. Birth-rate and death-rate are both very low. Of the 27 deaths, 1 was due to diarrhœa, 2 were due to diphtheria, 3 to phthisis, 2 to pneumonia or bronchitis, and 4 to heart disease.

**Infectious Disease.**—There were 17 cases of infectious disease notified, viz. : - 8 scarlatina, 4 diphtheria, 4 erysipelas, and 1 measles. In the cases of diphtheria the cause was traced to a defective cesspool. A plan is now under consideration for the removal of this cesspool and some others, and connecting the houses with the main drainage system.

**Bakehouses and Dairies** have been inspected and found to be in satisfactory condition.

**Water-supply**—The quantity has been ample, and the water has not been so extremely hard as in 1893. During the year 33 samples of water have been taken from pumps and wells in the district, and analysed. Of these 3 were condemned as bad and the wells were ordered to be closed.

**Sewers and Drains** continue to work well. Three automatic flushing tanks have been put down. The effluent from the sewage farm has been of a satisfactory character throughout the year.

**Middens, &c.**—Several of the privy-middens in the district are too near dwelling houses, and require converting into water-closets and dry ashpits.

The roads have been maintained in very good condition. One new street has been made, connecting London Road with Trafford Road.

## DUKINFIELD.

### Urban Sanitary District

Medical Office of Health—DR. J. R. S. PARK.

Population at Census, 1891—17408

Estimated population in middle of 1894—17800.

Area in acres—1412.

Birth-rate per 1000 living—31·0.

Death-rate per 1000 living—17·7.

Death-rate for seven principal Zymotic diseases—0·9.

Deaths under one year to 1000 births—186.

This Urban District contains only a part of the civil parish of Dukinfield, the remainder being part of the Municipal Borough of Stalybridge.

In 1894, the number of births registered was 552, and the number of deaths registered was 315. Of the births 261 were males and 291 were females. Of the deaths 142 were males and 173 were females. The mean birth-rate for the six years, 1888-93, was 30·5. The mean death-rate for the six years, 1888-93, was 21·2. Thus the birth-rate in 1894 was 0·5 above the local mean rate, and the death-rate in 1894 was 3·5 below the local mean rate. The birth-rate was lowest (22·4) in the first quarter, and highest (36·4) in the last quarter. The



death-rate was lowest (16.8) in the third quarter, and highest (18.6) in the first quarter.

The number of illegitimate births was 19. The number of deaths of infants under one year old was 103.

The number of deaths, in 1894, ascribed to the seven principal zymotic diseases was 17, viz : 7 scarlatina, 1 diphtheria, 1 measles, 2 typhoid fever, 2 puerperal fever and 4 diarrhoea. The mean death-rate for the seven principal zymotic diseases for the six years, 1888-93, was 2.3. Thus this death-rate was in 1894 less than half the mean rate.

**Cases of Infectious Diseases Notified.**—During 1894, the number of cases notified was 118, viz : 2 small-pox, 68 scarlatina, 9 diphtheria, 6 croup, 11 typhoid fever, 2 puerperal fever and 20 erysipelas. Ten cases were notified in the first quarter, 26 in the second quarter, 20 in the third quarter and 62 in the fourth quarter.

The Infectious Disease (Notification) Act was adopted in November, 1892. Only the diseases named in the Act are required to be notified. The number of cases notified in 1893 was 126.

In all cases notified the houses and clothing are fumigated with burning sulphur and disinfecting powder is supplied ; but in very few cases was isolation at home possible. Without means of isolating cases the Act requiring notification is of comparatively little use.

**Hospital Accommodation required.**—The accommodation arranged for consists of two beds at the Hyde Hospital for which a preliminary fee of £22 is paid. In addition there is a charge of £2 2s. 0d. per case for medical attendance in hospital, and 1s. 6d. a day for food. Only cases of small-pox are sent. There is no doubt the Hyde Hospital has been of inestimable benefit in checking the spread of small-pox. but the accommodation arranged for is ridiculously too small and the Hospital is too far away. Then, isolation is needed for other cases as well as small-pox—notably for scarlatina. The Medical Officer of Health requests the Authority to take into consideration the building of an Infectious Hospital. He agrees with the County Medical Officer of Health that 18 beds should be provided. It would perhaps be more economical for Dukinfield to join with Stalybridge and the Ashton Rural District in building a joint hospital, providing 50 beds.

Several cases have occurred showing the need of accommodation for scarlatina patients. In one case a widow had a lodger suffering from the disease, and though her livelihood was thus interfered with, the Workhouse Authorities would not take charge of the patient. In another case a domestic servant was the sufferer, and her master could not send her to hospital unless he was willing to pay three or four guineas a week for her.

**Disinfecting Apparatus required.**—The Authority is not yet provided with any disinfecting apparatus. This is an important matter and should not be neglected.

**New Bye-Laws required.**—The bye-laws in use in the District were adopted in 1857, that is 18 years before the passing of the Public Health Act of 1875, and are not now up to date. A Committee has been appointed to arrange suitable bye-laws.

**Small-pox.**—Two cases of this disease were notified during the year, one in July and the other in August. Prompt action was taken, both cases being removed to the Hyde Hospital, where they recovered. The disease was not communicated to anyone.

**Measles** only caused one death in 1894. In 1893 there were 8 deaths from this disease, and in 1892 there were 3 deaths. Though measles is not required to be notified, it is a preventable disease, and parents should endeavour as far as possible to isolate their children when suffering from measles.

**Scarlatina.**—Of the 68 cases of scarlatina reported 42 occurred in the last quarter of the year. Of the 7 deaths, 2 took place in the third quarter and 5 in the last. In some houses 2, 3, and 4 cases were notified. There was one instance of 5 cases in a house.

**Diphtheria and Croup.**—In the first quarter there was 1 case of diphtheria reported, in the second quarter 3 cases of diphtheria and 3 of croup, in the third quarter 2 cases of diphtheria, and in the last quarter 3 cases of diphtheria and 3 of croup. One case of diphtheria and 3 cases of croup proved fatal. During the six years, 1888-93, the mean annual number of deaths from these two diseases together was 3.1. It is difficult to explain why, in spite of improved sanitary precautions, the mortality from these diseases increases throughout the whole country. The Medical Officer of Health thinks that compulsory attendance at school has much to do with this increase, and he suggests that parents and schoolmasters should absolutely prohibit children attending school when suffering from even a seemingly simple sore throat.

**Typhoid Fever.**—There were 2 cases notified in the first quarter, 2 in the second, 2 in the third and 5 in the last. Typhoid fever may be considered a type of preventable diseases, and its absence or presence indicates the good or bad sanitary state of a district. It is thus satisfactory to know that in recent years the number of cases of this disease has appreciably diminished.

**Diarrhœa** caused only four deaths in 1894. During the six years, 1888-93, the mean annual number of deaths from diarrhœa was 12.5. In some districts diarrhœa is notifiable.

The Medical Officer of Health is not in favour of requiring its notification until urgency demands such a step, as in the summer of 1893, when choleraic diarrhœa was made notifiable temporarily.

**Notification to Schools.**—When an infectious disease is notified as occurring at a house, the Inspector communicates at once to the master of the school where the children from the house attend.

**The question of infection by Books.**—The Medical Officer of Health thinks it would be advisable to send a similar communication in future to the librarian of the Free Library. There is no doubt that infectious disease can be communicated by means of books.

There were no deaths from whooping-cough and none from influenza during the year.

**Phthisis** is responsible for 16 deaths in 1894. This number compares favourably with 32 deaths in 1893, and 29 in 1892. The employment of workpeople in the cotton mills (particularly in card-rooms), in coal pits, and in spindle-works, tends to develop phthisis and other chest diseases. Though it is an open question whether phthisis is hereditary or not, there is no doubt the tendency to it may be inherited in the form of constitutional weakness, or of a narrow contracted chest. "The spores which cause this disease are found in the air-borne dust, especially in rooms inhabited by phthisical patients. According to Bollinger, the daily sputa of a single patient may contain 20 millions of these germs, and drying for months will not destroy their virulence. The prevalence of the pulmonary form of phthisis, and its close relation to air conditions, are not without significance, as pointing to air-borne infection." The germs are found not only in the air and dust, but also on the walls of rooms occupied by phthisical persons. Every precaution should be taken to isolate as much as possible those suffering from phthisis, and to have the rooms well disinfected.

**Water-supply.**—The Dukinfield Local Board are joint owners with the Corporations of Ashton-under-Lyne and Stalybridge of the district Waterworks. The water is gathered from the springs and streams in the Swineshaw Valley. It is pure and abundant. The average daily supply during the year is 340,000 gallons, or a little over 19 gallons per head of the population.

**Disposal of Excreta and Refuse.**—The sanitary accommodation provided for houses in the district is of three kinds—midden-privies, pails and w.c.'s. Although there are still many of the old midden-privies, wet and open, all new property is required, if possible, to have w.c.'s. The excreta from the pails is taken to farms, and in particular to the Board's sewage farm; and the contents of the midden-privies is gathered

and tipped on the sewage farm between 11 p.m. and 6 a.m. At present the closets are flushed into the sewers, and then into the river. In the near future all sewage will be treated at Bradley Hurst farm, consisting of upwards of 60 acres of land in a most favourable position as an outlet to the sewage of the district.

The district is regularly and systematically scavenged. The street-sweepings are conveyed to some waste land off Furness street and to Bradley Hurst, and all refuse from shops &c., is removed to the tip at the farm.

The Medical Officer of Heath suggests that the Authority should take into consideration the erection of a "destructor" to cremate the refuse.

**Joint Sewage Scheme.**—The neighbouring Corporation of Stalybridge have decided to unite with Dukinfield to form a joint sewage scheme, and the sewage of the two districts will be treated at Bradley Hurst farm before it is allowed to enter the river.

**Sewage of Ashton-under-Lyne.**—It is to be regretted that the Corporation of Ashton-under-Lyne, on the opposite side of the river, could not see their way to building their sewage-disposal works, if not on Bradley Hurst Farm, at all events somewhere in the vicinity. Ashton has, however, purchased a plot of land called Plantation Farm (much nearer to the population of Dukinfield) which it intends to use for the disposal of its sewage.

**A polluted River.**—Dukinfield is situated on the left bank of the river Tame, a tributary of the river Mersey, and the Tame is at present nothing more or less than an open sewer, into which flows, in addition to the sewage of the district, the liquid refuse from the different industries which are carried on on both sides of the river. The industries referred to are cotton mills, iron works, hat works, dye works and dry-soap works. The waste liquor discharged from the three last named works has a very deleterious effect on the water. It is hoped that in a very short time, as the result of the sewage schemes above referred to, the condition of the river will be considerably improved.

**Inspector's Report.**—The Inspector furnishes a list of many nuisances dealt with, including 88 defective drains altered, 64 defective ashpits altered, 64 poultry (so kept as to be a nuisance) removed, 3 pig-sties improved and 24 miscellaneous nuisances abated. Sixty-one summonses were issued for firing chimneys, and one summons was issued in respect of a smoke nuisance. Some practical means of regulating the quantity of dense smoke to be allowed from mill-chimneys, is needed. The Inspector also supervised the scavenging. The number of loads of street sweepings removed was 1492. The number of loads of dry ashes removed was 844, the number of loads of refuse from

the midden-privies was 4707, and the number of loads of excreta removed was 698.

**Canal Boats.**—There is a mile of the Peak Forest Canal running through the district. The Inspector paid 36 visits to this, and inspected 27 canal-boats. He also issued 4 notices for breach of regulations, under the Canal Boats Act. The Canal seems to be a convenient place for drowning dogs, for during the year the Inspector removed 140 carcasses of these animals.

There are no offensive trades carried on in the district, and there are no common lodging-houses or tenement lodging-houses. There are very few back-to-back houses, and only about 3 cellar-dwellings.

**Dairies, Cow-sheds and Milk-shops** are periodically inspected. There are 15 in the district, and 44 visits of inspection were made during the year. The premises, fixtures, milk-vessels, &c., were found scrupulously clean, and, with one or two exceptions, the lighting, ventilation, draining, and water-supply were satisfactory.

Samples of milk (and some other foods) were submitted to the County Analyst, and in several cases the sample was reported to be adulterated and proceedings were taken.

**Bakehouses and Slaughter houses** are also regularly inspected and reported on. The bakehouses are kept in good sanitary condition. There are 15 slaughter-houses, 9 of which are being used at present. Thirty-six visits of inspection were made to them during the year. As a rule they are kept clean, but many have not sufficient air-space or light, and are in objectionable places. The Medical Officer of health trusts the necessity for a public abattoir will be considered by the Health Committee.

**Vaccination.**—The following return is submitted respecting the vaccination of children whose births were registered in the district in 1894:—

|                                      |     |     |
|--------------------------------------|-----|-----|
| Successfully vaccinated              | ... | 155 |
| Insusceptible of vaccination         | ..  | 2   |
| Died unvaccinated                    | ... | 79  |
| Postponed by medical certificate     | ... | 6   |
| Left the District or cannot be found | ... | 6   |
| Outstanding or unaccounted for       | ... | 304 |
|                                      |     | —   |
| Births registered                    | ... | 552 |

**Open Spaces and Play-grounds.**—A Committee has been appointed with the object of obtaining open spaces and play-grounds for the benefit of the people, and more especially the children, of the district.

**Cemetery.**—The Local Authority are joint owners with the Ashton-under-Lyne Corporation of a large cemetery, situated in Dukinfield, which is sufficient, not only for present needs, but for the requirements of many years to come.

**HOLLINGWORTH.****Urban Sanitary District.**

Medical Officer of Health—DR. W. E. S. BURNETT.

Population at Census, 1891—2895.

Estimated population in middle of 1894—2895.

Area in acres—2086.

Birth-rate per 1000 living—23·8.

Death-rate per 1000 living—13·1.

Death-rate from seven principal Zymotic diseases—0·3.

Deaths under one year to 1000 births—130.

In 1894, the number of births registered in the district was 69 and the number of deaths registered in the district was 38. Nine of the deaths were of infants under one year old, and 8 were of persons 65 years old and upwards.

Of the deaths one was due to croup, one to erysipelas, one to diarrhœa and one to phthisis. There were also 8 deaths due to pneumonia or bronchitis and 4 to heart disease.

**Notification of Infectious Disease.**—The number of cases notified was 15, viz : 3 small-pox, 3 scarlatina, 1 diphtheria 1 membranous croup, 3 typhoid fever, and 4 erysipelas.

**Small-pox.**—One of the 3 cases of this disease occurred in January and 2 in April. The source of the first case could not be definitely traced, but as there had been a case of this disease in the same block of cottages a few months previously, it presumably originated from that. The second case was in Woolley Lane, and it was brought there by a young man who was employed at Colne, in Lancashire, the disease being fully developed on his arrival. These cases were immediately removed to the Hyde Isolation Hospital, all the healthy members of the family were re-vaccinated, and all (with the exception of two who were suffering from sub-acute rheumatism at the time) left the house, after changing their clothes, and remained with some relatives for several weeks until all danger of infection had passed. One of the two who remained in the house was subsequently attacked in a very modified form, and was also dispatched to the hospital at Hyde. The house and bedding were disinfected with sulphur fumes the same day. The measures used to check the disease were effectual, for no further case occurred.

**Scarlatina.**—The first case of this disease was in Woolley Lane, the second in Market Street. The latter was followed by another case in the same house. These premises were specially inspected, but in neither instance could the cause of the disease be ascertained.

**Diphtheria and Croup.**—The only case of croup notified, occurred in Cannon Street in June, and proved fatal. The only case of diphtheria notified, was in Woolley Lane in

December. The premises where the diphtheria occurred were damp and in a very insanitary condition.

**Typhoid fever.**—One of the 3 cases of this disease was notified in January, one in February and one in December. The Medical Officer of Health attributes the first case to drinking water from a trough, close to a public road, in connection with the Co-operative School. This trough of water is fouled by the school children and by unknown elements in the form of dust, and ought to be done away with as unfit for drinking purposes. The premises in Water Lane, where the second case occurred, were (as previously reported) in a very insanitary condition. The house wall formed one side of a midden-privy, and as foul emanations were occasionally noticed in the house, soakage to a considerable extent had doubtless taken place into the foundations. In the last case, which occurred in Market Street no apparent cause could be discovered.

**Erysipelas.**—Of the four cases notified, one occurred in Green Lane in March, the second in Market Street in July, and the two last in Taylor Street and Sofa Row respectively, in December. These cases were all investigated, and in two instances alterations were suggested to remedy insanitary defects then existing. Erysipelas is undoubtedly connected with insanitary surroundings, such as over crowding, defective drainage and insufficient ventilation. When any of these conditions are brought under the notice of the Authority, they should have prompt attention.

**Isolation and Disinfection.**—In all cases of infectious disease, the patients are isolated as far as possible, and the house, clothes, and bedding disinfected. Disinfectants are supplied gratuitously. Healthy children residing in infected houses are prohibited from attending school, or playing with other children until all possibility of their infecting others is past.

**Water-supply and Milk.**—The water-supply has been abundant and good throughout the year. There are no milk-shops in the district, the milk being supplied from farms outside.

**Inspection.**—The district has been inspected periodically by the Medical Officer of Health and Inspector, particular care having been given to those parts most needing attention. Slaughter-houses have been duly inspected.

There are no offensive trades carried on in the district.

**Middens, &c.**—A large number of midden-privies in the district are very badly constructed, being much too large, roofless and not watertight. In wet weather these are converted into cesspools of a very filthy character, the fluid portion frequently oozing through the midden-walls. Reference has previously been made to this matter, but as the present District Council is principally composed of new members, the Medical

Officer of Health thinks it desirable to state in detail what alterations should be effected. The bottoms of the midden-privies referred to should be raised to the ground level, the floor and sides should be flagged or built of hard brick, laid in cement or puddled clay, to prevent soakage into the surrounding soil. Rain should be excluded by roofing the middens, and adequate ventilation should be provided.

**Emptying Middens** is still carried out in a very unsatisfactory manner. The emptying should be done systematically at regular intervals not exceeding a month. The work would be better done by employés of the Council.

**Nuisance Abatement.**—Fifteen formal notices for the abatement of nuisances have been served during the year. These had reference chiefly to the reconstruction of defective house-drains, the cleansing and rebuilding of middens, &c. In ten cases sink waste-pipes were disconnected, and gully-traps put in. The Inspector also obtained the abatement of a number of nuisances without formal notices being sent.

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## HOOLE.

### Urban Sanitary District.

Medical Officer of Health—DR. W. C. WATSON.

Population at Census, 1891—3329.

Estimated population in middle of 1894—3329.

Area in acres—331.

Birth rate per 1000 living—33·9.

Death-rate per thousand living—16·8.

Death-rate from seven principal Zymotic diseases—1·8.

Deaths under one year to 1000 births—177.

This Urban District is only part of the parish of Hoole; the remaining part (419 acres, and having a population of 174) forms a part of the Chester Rural District.

The population of the Urban District was 3892 at the Census, but from this has been deducted 563, the population of the Chester Union Workhouse, which is situated in this district.

In 1894, the number of births registered was 113, and the number of deaths registered was 56. Both birth-rate and death-rate are lower than the corresponding mean rates of recent years in the district. Seven deaths were due to zymotic diseases, viz. : 3 diphtheria, 1 typhoid fever, 1 puerperal fever, 1 erysipelas, and 1 diarrhœa. All these were carefully investigated. There were also 6 deaths from phthisis, 13 from bronchitis and pneumonia and 5 from heart disease.

**Cases of Infectious Disease notified.**—The number of cases of infectious disease notified in the district was 24, viz. : 1 small-pox, 15 scarlatina and 6 diphtheria. The small-pox case



was imported. As soon as notified it was removed to the Hospital, Chester, and no other cases occurred. The patient made a good recovery. All the 15 cases of scarlatina recovered—6 were removed to the fever wards of the Chester Infirmary. There were also five cases of infectious disease notified in the Workhouse, viz. : 1 small-pox, 2 scarlatina and 2 erysipelas. All these cases were promptly removed to Hospital. The small-pox was caught outside the district. A death from typhoid fever and a death from diarrhœa took place in the Workhouse. Twenty-four cases of measles occurred in the Workhouse, and all recovered.

**Ashpits, &c.**—A large number of ashpits and privies have been improved, either by converting them into water-closets or draining and covering them. A few still remain to be dealt with, the owners having been served with notices. Scavenging periodically is well carried out.

Four new houses are in course of erection. The offices and boardroom have been completed and are in use.

Six streets have been adopted and re-made, and 3 private streets have been macadamized and the footpaths thereof paved.

**Nuisance Abatement.**—Fifty-three notices have been served for the abatement of nuisances of various kinds.

**Milk-houses.**—All the milk-houses in the district (12) have been regularly inspected.

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## HOYLAKE AND WEST KIRBY.

### Urban Sanitary District.

Medical Officer of Health—DR. G. A. KENYON.

Population at Census, 1891—6545.

Estimated population in middle of 1894—7513.

Area in acres—2019.

Birth-rate per 1000 living—27·1.

Death-rate per 1000 living—15·0.

Death-rate from seven principal Zymotic diseases—0·9.

Deaths under one year to 1000 births—112.

This Urban District consists of West Kirby, Little Meolse (including Hoylelake and Hilbre Island\*), Hoose, Great Meolse,

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\* This island appears on the Ordnance Map as a detached part of the former civil parish of St. Oswald, now incorporated with that of Chester, but it is treated as a part of Little Meolse owing to its having been rated to this parish for the maintenance of the poor.

and part of Grange. The area and population at the date of the Census are given as follows:—

|                      | Area in<br>Acres. | Population<br>at Census. |
|----------------------|-------------------|--------------------------|
| West Kirby ... ..    | 482               | 2441                     |
| Little Meolse ... .. | 711               | 1962                     |
| Hoose... ..          | 108               | 1658                     |
| Great Meolse... ..   | 695               | 456                      |
| Part of Grange .. .. | 23                | 28                       |

The Urban District was created by an order of the Cheshire County Council, which was confirmed by the Local Government Board, dated January 15th, 1891.

The portion of the Urban District now regarded as Hoylake is Little Meolse, Hoose and Great Meolse; the portion now regarded as West Kirby is West Kirby and part of Grange.

In 1894 the births registered in the district numbered 204; the deaths (excluding one death not belonging to the district) numbered 113. Of the deaths 59 were in Hoylake, and 54 were in West Kirby. Both birth-rate and death-rate are fairly low, as they were in 1892 and 1893. The estimate of the population has been made with care, taking into account the newly occupied houses. During the year, according to the rate-books, the newly occupied houses numbered 60, viz., in Hoylake 37, and in West Kirby 23.

The Hoylake mortality includes a death from diphtheria, 1 from typhoid fever, 4 from diarrhœa, 7 from phthisis, 8 from bronchitis or pneumonia, 3 from heart disease and 2 from injuries.

The West Kirby mortality includes a death from measles, 13 from phthisis, 11 from bronchitis or pneumonia, and 3 from heart disease.

The cases of infectious diseases notified were 79 in Hoylake and 32 in West Kirby. The cases notified in Hoylake were 53 of scarlatina, 18 of typhoid fever, and 8 of erysipelas. Of these 25 scarlatina cases and 3 typhoid fever cases were removed to the Spital Hospital. The cases notified in West Kirby were 1 of small-pox, 17 of scarlatina, 3 of diphtheria, 8 of typhoid fever, and 3 of erysipelas. Of these 8 scarlatina cases and 8 typhoid fever cases were removed to the Spital Hospital. Five children who came into the district with the infection of scarlatina among them, from Wallasey, were removed to the Wallasey Fever Hospital. In addition to the scarlatina reported under the Infectious Disease (Notification) Act a few other cases came to the knowledge of the Medical Officer of Health, some persons notified who were not removed infecting other members of the families to which they belonged. There was no death from scarlatina among the people of the district, but a child removed from the Convalescent Home, West Kirby, died at the Spital Hospital. Most of the scarlatina cases were very mild ones. Cases occurred at intervals throughout the

year, but in October and November the disease was more generally prevalent. It was to a great extent kept in check by prompt removal of cases to hospital.

The small-pox case was notified on December 17th, and occurred at a gentleman's house where isolation was practicable. The patient had recently arrived from Dublin. All proper precautions were taken, and the disease did not spread.

Out of the 8 cases of typhoid fever at West Kirby, 4 were in one house, and removed at nearly the same time.

All cases of infectious disease were duly investigated, and measures taken for the discovery and remedy of insanitary conditions, as well as for disinfection. There was very rarely any recurrence of the disease after a case had been removed to hospital and the premises had been disinfected.

Having regard to the free communication with Liverpool and Birkenhead many of the cases of infectious disease in the district may be looked upon as imported.

The Medical Officer of Health has visited the district many times, making general and special inspections, and investigating cases of infectious disease. In particular, he made full inquiry as to the conditions of the shore at the outfall of the sewers, and reported on this and on the analysis made by the County Analyst in connection therewith. He was able to show that apprehensions, which had been expressed by some, had little or no foundation in fact.

Ashpits are emptied every three weeks by men in the direct employ of the Board. The use of movable receptacles is encouraged, and these are emptied weekly.

The removal of nuisances is promptly attended to by Mr. Foster, the Surveyor and Inspector, who gives a very complete and satisfactory report of the work done since his appointment in the middle of the year. He states that the sewers are in good order, and are flushed weekly during summer, and fortnightly in winter. Sanitary defects have been removed or are in process of remedy on 73 premises; among these are the conversion of 28 privies into water-closets.

Three hundred yards of new sewer have been laid during the year, chiefly in Valentia Road and Cable Road.

Ninety-nine houses have been built or are in course of erection, of which 75 are at Hoylake and 24 at West Kirby. The District Council have now in hand the paving and macadamizing of 14 private streets and 11 back passages.

The District is well supplied with water from the West Kirby Water Works (deep wells),

Most of the milk supplied in the district is from farmers residing outside, consequently there are not many milk-houses in Hoylake and West Kirby. "So far as known, they are in good order, but the register requires reconstruction, and regulations should be issued."

## LYMM.

## Urban Sanitary District.

Medical Officer of Health—Dr. J. M. Fox.

Population at Census, 1891—4995.

Estimated population in middle of 1894—5600.

Area in acres—4375.

Birth-rate per 1000 living—25·3.

Death-rate per 1000 living—13·7.

Death-rate from seven principal Zymotic diseases—0·7.

Deaths under one year to 1000 births—126.

The Medical Officer of Health begins this and other Reports with a reference to the change of name of the Authority, the Local Board being now the District Council.

“There is a suggestive meaning” he writes “in the word Council, and Councillors may pardon me for reminding them of its derivation.”

“The word Council is derived from the Latin—first, the familiar prefix *con*, which signifies together; and, second, the word *cilia*, which is the Latin name for the edges of the eyelids. Thus we have the word Council or Council, or eyelids placed together. I suppose no more beautiful instance of perfect apposition can be found either in Divine or human machinery than the easy and faultless adjustment of the eyelids, one to another, in all varieties of the animal world. Let us hope that our future consultations may be in harmony with the meaning expressed in the derivation of the new descriptive title by which the old Board will in future be known. May a further result also be found in the applicable use of the similar word counsel, which (also derived from the Latin) signifies the result of council, or a leaping and bounding together in harmonious action.”

“It is the first aphorism of Hippocrates, perhaps the oldest physician whose teaching has come down to us, that whilst science lives on, human life is brief and subject to change. Thus the Local Board is dead. Long live the District Council!”

“But what we have to bear in mind is, that whether the life of our new Council be long or short, and by whatever newly-constituted body it may be superseded, the aim of all of them, past, present, and future, should be the same, namely, the progressive achievement of the sanitary advantage of every member of every administrative district. The course upon which this great enterprise must proceed will not change with the varying changes of constituted Authorities, but will advance upon the old lines, only more widely, firmly, and accurately drawn.”

“There is nothing to the mind of your Medical Officer of Health more certain than that a period of sanitary perfection will some day dawn upon, and endure in, the world. But this consummation must not be violently rushed on at the cost of creating undesirable cries of injustice, or periods of social tumult, either by the pursuit of mistaken ways, or even of right ones

before science and the times are ripe. But it must no less be the object of all to leave no reasonable effort unexerted to prevent as many intervening accidents to life and health as possible."

"There is one specially weak spot upon which I could wish this Council and myself to have a *locus* for beneficial action. I allude to the great plague of Intemperance. In future dealing with this terrible evil, we have a slightly advanced *locus* in the new position that the Chairman of every Urban and Rural District Council is now a magistrate. In speaking from a long and very varied experience, I have years since been driven to the conclusion that sanitary evils the most shocking to the senses and to every sympathetic feeling, like the most shocking brutal crimes, are the result alone of this accursed and hitherto invincible vice. So far as sanitary administration is concerned, this vice stands in our way as an insurmountable obstacle to improvements the most necessary and urgent."

"Existing agencies," it is pointed out, "except perhaps the Society for Prevention of Cruelty to Children, with its valuable staff of Inspectors, fail to reach the individual abodes of squalor, wretchedness, destitution, disease, and preventable deaths, all which daily come under the systematic scrutiny of the Officers of your Council. There is a medicine which we now see largely advertised in our newspapers, called Homocea, the special merit of which medicine is alleged to be that it may be applied to the offending spot. This expresses exactly what I think we want in regard to the terrible curse of Intemperance; and to the devising of some surer, swifter, and more direct method of operating beneficially on the offending spot, I would pressingly urge members of the Council to give their earnest consideration."

In 1874 there were 142 births and 77 deaths registered in the district. The birth-rate is lower than usual, the general death-rate is very low, and so is the zymotic death-rate.

The number of cases of infectious disease notified during the year was 20, viz.: 11 scarlatina, 1 diphtheria, 3 croup, 1 typhoid fever, 1 continued fever, and 3 erysipelas. There were 2 deaths from diphtheria and two from croup. There was one death from whooping-cough and one from diarrhœa. In all instances of infectious diseases, inspections were made, proper precautions taken to prevent the spread of the disease, and disinfectants were supplied.

**Infantile Mortality.**—Eighteen of the deaths recorded in 1894 were of infants under one year old, viz.: 5 pneumonia, 6 debility, atrophy or marasmus, 4 convulsions, 1 whooping cough, 1 meningitis and 1 gastritis. A large majority of these must be considered as preventable deaths.

"It is little known how rare an article of diet milk is in the households of the poor. Had this not been the case, many of these lamentable deaths would have been obviated. And yet, in the expansive breasts of every mother, how Nature teaches the obvious lesson!"

“For poor people to aver that they cannot afford milk is a palpable falsehood, when it is known that the cost of a glass of beer would furnish an average sized family with sufficient skimmed milk for an entire day’s consumption ; and the prejudice against skimmed milk is only comparable to a person refusing the lean of meat, the essence of its nutriment, because he cannot get any fat, which is only its condiment.”

**Housing of the Working Classes Act.**—It must be placed on record that an effort was made to remove a block of houses, adjudged by the Medical Officer of Health and he thinks by the Board, to be not only unfit for human habitation, but also incapable of being made fit. This effort was initiated under the direction of the Housing of the Working Classes Act, 1890, but the aim of the Board failed of accomplishment.

**Sanitary Work** has been pursued in Lymm, in 1894, with the same energy and success as of old. The outlying portions of the district have not been neglected. Heatley is now provided with excellent means of sewage, and the water mains have been extended through Heatley and Statham.

**Isolation Hospital needed.**—The Local Board did their best to secure for Lymm an isolation hospital for cases of small-pox. Insurmountable difficulties especially as to site stood in the way, these difficulties will have to be resolutely dealt with and overcome by the new Council. The Council have full power to purchase land for a site. However embryonic a form the Hospital may, in the first instance, assume, the district is bound to have some provision of this nature.

**Inspector’s Report.**—The Inspector recorded, during the year, 99 visits. The number of nuisances from defective drains, abated, was 18. The number of nuisances from defective privies and ashpits, abated, was 32. The Inspector supervises the removal of refuse. There were 2213 emptyings effected of privies and ashpits. The number of loads removed was 758. There was one case of overcrowding dealt with. The 3 registered slaughter-houses in the district were supervised.

The number of canal boats inspected was 50. The number of notices served in this department was 4.

Eleven certificates in respect of new buildings were given.

**Appointment of a Workshops Inspector.**—Under the Factory and Workshop Act, 1891, the Authority have appointed an additional Inspector of the Fustian-cutting shops. The Medical Officer of Health in a previous Report advocated the appointment of a lady. He still wishes that a lady could have the post.

**MARPLE.****Urban Sanitary District.**

Medical Officer of Health—DR. A. F. KEYWORTH.

Population at Census, 1891—4844.

Estimated population in middle of 1894—4950.

Area in acres—3053.

Birth-rate per 1000 living—20·8.

Death-rate per 1000 living—14·3.

Death-rate from seven principal Zymotic diseases—2·8.

Deaths under one year to 1000 births—155.

This Urban District takes in Barns Fold, Hawk Green, Middlewood and Windlehurst.

Though the Medical Officer of Health has only held office since the beginning of April, 1894, and is therefore under no obligation to report in respect of the first quarter, he has kindly filled in the official returns of births, deaths &c. for the whole year.

In 1894, the number of births registered in the district was 103 (52 males and 51 females) and the number of deaths registered was 75 (40 male and 35 females). Four of those who died were persons not belonging to the district—the number of deaths belonging to the district is thus 71. The birth-rate and death-rate are both low.

Of the 71 deaths 14 were due to the principal zymotic diseases, viz: 1 scarlatina, 5 diphtheria, 4 measles and 4 whooping-cough. There were also 4 deaths from croup, 1 death from phthisis, 14 deaths from bronchitis and pneumonia, 7 from heart disease and 4 from injuries.

**Infant Mortality.**—Sixteen infants died under one year old, a number equal to 155 per 1000 births. In 1892 the proportion of deaths of infants to 1000 births was 148, and in 1893 it was 141. The assigned causes of the deaths of infants in the district are chiefly (1) premature birth and marasmus, and (2) respiratory diseases. As regards the first there is a factor in operation at Marple—the late period pregnant women continue to work in the factories. This does undoubtedly to a greater or less extent lower the condition of the woman and injure the child. The remedy is obvious. As regards the second cause, the employment of mothers in factories often leads to infants being taken from their warm beds and conveyed in the early morning to a neighbour's house, there to be tended till evening, when a second exposure takes place carrying the little ones home again. This, in the winter and late autumn especially, must be dangerous to life.

**Infectious Disease.**—There have been many cases of zymotic disease during 1894, but as the Infectious Disease (Notification) Act was not in force in the district till January,

1895, there is no means of estimating the number of cases. Five cases of scarlatina, 12 of diphtheria, 4 of croup and 4 of erysipelas came to the knowledge of the Medical Officer of Health, and in the spring measles was epidemic.

**Scarlatina.**—Sporadic cases of this disease occurred nearly every month, but there was no death recorded till September. The few cases reported were carefully investigated, but the cause could not be ascertained. In three or four cases it appeared that the disease had been imported from another district where scarlatina was prevalent, children from that district and Marple having been attending the same school. The malady was generally of a mild type.

**Diphtheria and Membranous Croup.**—In March there was one case of diphtheria, which proved fatal, but it was quite sporadic. However in August, September and October, numerous cases occurred which were reported as diphtheria or croup, and the district was threatened with something like an epidemic. For checking the spread of infection the Authority is much indebted to the Marple Sick Poor Nursing Society, who provided a special nurse for these cases. So the patients were well nursed and the friends were impressed with danger of infection. As there were 5 deaths ascribed to diphtheria and 4 to membranous croup, the combined death-rate was equal to 1.9 per 1000. With few exceptions, those attacked were under 15 years of age. The outbreak was associated with a prevalence of sore throat, the schoolmasters telling the Medical Officer of Health that they had numerous pupils absent from school on account of "sore throat." The question naturally arises—How many of these, not under medical treatment, may have been cases of true diphtheria? The Medical Officer of Health is unable to assign any true cause for this outbreak. In a few instances the closet accommodation was bad, and the defects found were duly rectified. Sewer gas could not have been the cause, as the cases mostly occurred away from the sewers. Still it was noticed, not only in the houses where diphtheria occurred, that there was great laxity on the part of householders in regularly cleansing and flushing gully-traps. The Medical Officer of Health continually found those traps choked, and the slop water running over the yards, soaking the surrounding soil and penetrating to the house foundations.

**Measles.**—In March measles began to be prevalent and in April and May became epidemic. School attendances were largely affected, and the Albert School was closed by the managers in consequence. Later the All Saints' School was becoming affected and, on the advice of the Medical Officer of Health, was closed. Then the wave of infection seemed to travel to High Lane School and the Managers closed that. It might be argued that the closing of schools offered a questionable advantage, as children released from school play together in the



streets ; but playing in the open air is by no means the same as being shut up in rooms, inhaling one another's breath &c. Considering the prevalence of the disease, the mortality, equal to a death-rate of 0·8 per 1000 living, was not high. It should be remembered that the good done by closing day schools is nullified if the children continue in attendance on Sunday Schools.

**Influenza** was present all the year, and one death was registered from complications following it.

**Phthisis.**—The comparative freedom from this disease which Marple enjoys is noteworthy. Only two persons died from the disease in 1894, and one was a gentleman who came into the district suffering from acute phthisis. The Medical Officer of Health is afraid the locality will not long remain so fortunate, as medical practitioners are beginning to look on Marple as very suitable for patients in the early stages of phthisis, and are recommending them to leave Manchester and go to Marple.

**Disinfection.**—Whenever the Authority have heard of cases of infectious disease, or when requested by an occupier, the Inspector has disinfected the premises, as far as possible, by fumigation. But a much needed want is some arrangement whereby bedding, clothes and unwashable articles can be disinfected. The Medical Officer of Health proposes, either that some agreement should be come to with the Hyde or Stockport Corporations, or that the Marple Authority should erect a steam disinfector, making a charge for its use to those able to pay.

**Isolation.**—The Infectious Hospital question appears as far from settlement as ever; the negotiations with the adjoining Authorities to provide a hospital having fallen through, and the arrangement with the Hyde Corporation to receive patients being far from satisfactory. Yet there is no saying how soon the Authority may have to isolate an infectious case, *e.g.*, a tramp suffering from small-pox. The Medical Officer of Health calls attention to the last Annual Report of the Medical Officer of Health for Stockport in which he recommends his Council to make a representation to the Cheshire County Council to compel contiguous Authorities to provide adequate means of isolation for the infectious sick.

**Water-supply.**—The water-supply is good and plentiful, and the water from the few wells still existing appears to be satisfactory.

**Scavenging.**—There has been some little improvement in the scavenging in 1894, but there is room for more. It would be a great gain to the district if the Authority could devise some inexpensive scheme for the regular and methodical emptying of ashpits. Some of the ashpits inspected were very defective, but

in most instances these have been put in good order, or improved.

**Sewers and Sewage Disposal.**—The outfall works and the new main sewer from Rose Hill to Hawk Green have made fair progress. This sewer, when finished, will considerably improve the district and divert a large amount of sewage from a much polluted brook.

**Inspection.**—The Medical Officer of Health and Inspector have inspected the workshops, schools, slaughter-houses, and bakehouses, and found them well kept, and their sanitary arrangements satisfactory. The food and milk supply is of average quality and plentiful.

**The Burial-grounds** are not quite satisfactory. They are drained, but the drainage undoubtedly requires improving.

**New Houses, &c.**—Only 5 new houses have been erected during the year; 15 are in course of erection. Additions have been made to a few houses. There remains much old property that requires rebuilding. The district is fairly well lighted with gas of good quality; six extra lamps have been erected during the year, but more are required.

**Summary of Requirements.**—The Medical Officer of Health concludes his Report by submitting for the further consideration of the Authority the following requirements:—

1. Some provision for the isolation of infectious cases.
2. A more perfect system of disinfecting.
3. Improved scavenging of a part, if not of the whole, of the district.
4. The registration of slaughter-houses and bakehouses.
5. Regulations made under the Dairies, Cow-sheds and Milk-shops Order.

## MIDDLEWICH.

### Urban Sanitary District.

Medical Officer of Health—DR. J. M. FOX.

Population at Census, 1891—3706.

Estimated population in middle of 1894—4500.

Area in acres—252.

Birth-rate per 1000 living—43.1.

Death-rate per 1000 living—11.3.

Death-rate from seven principal Zymotic diseases—0.6.

Deaths under one year to 1000 births—87.

This Urban District includes the whole of the parish of Middlewich and parts of the parishes of Newton and Kinderton with Hulme.

The statistics of the year 1894 are remarkable and perplexing, as bearing upon the question of population. The number of births registered was 194, yielding a birth-rate of 43.1 per 1000; and the number of deaths was 54, yielding a death-rate of 11.3 per 1000. This very high birth-rate distinctly suggests an under-estimate of population, and the very low death-rate would with equal force suggest an over-estimate of population. The estimate is 4500, which was the figure decided upon after discussion by the Board, previous to the preparation of the Report for 1893. The Authority is to be congratulated on the health and vigour of the inhabitants of the District.

The number of deaths from the chief zymotic diseases was 3, viz. : 1 scarlatina and 2 diarrhœa. The zymotic death-rate was thus very low.

There were 24 cases of infectious disease notified during the year, viz. : 1 diphtheria, 7 scarlatina, 7 typhoid fever and 9 erysipelas. Of these the only ones the Medical Officer of Health draws attention to are the typhoid fever cases.

**Typhoid Fever.**—Three of these cases were in Croxton Lane, two in Pepper Street, one was in Cemetery Road and one in Webb's Lane. The case in Webb's Lane was imported. It was a serious case, but the recovery was very satisfactory. The 3 cases which occurred in Croxton Lane were all of a most serious character, and the inquiry into their origin was most interesting. First the water-supply came under suspicion, the well being imperfectly protected. This was speedily rectified, but yet the cases went on. During the summer weather no one could enter the backs of this block of houses without having the conviction forced upon them that the privies were an intolerable and most dangerous nuisance. They are constructed upon what is called the pail system. Now, the pail system is one very generally adopted, even in such towns as Manchester and Warrington, and has repeatedly received the sanction and approval of the Local Government Board. But it does not follow that the pail system is adapted to every locality, and it certainly is not adapted to the houses in Croxton Lane. The backs of the privies face due south, and the rays of the hot summer's sun beat upon them with tremendous force, there being only the interposition of a thin door between the pail and the fierce heat outside. The consequence is that fermentation of the heated contents is greatly promoted. The Medical Officer of Health never was in such foul-stinking closets in his life. Here was the cause of the cases of typhoid fever. The old primitive Cheshire cesspools would be better than these closets; but it is hoped a way may be found to accommodate the houses with Fowler's or Worth's closets or with w.c.'s. Another summer should not be allowed to arrive while these closets are in their present condition. Disinfectants were liberally supplied by the Authority.

**Water-supply.**—One of the most important of the general operations of the year, is that an adequate source of water-supply has been discovered and developed. The Authority has shown no lack of energy in endeavouring to make this supply available to the town as soon as possible, under the able direction of Mr. Worth, the Surveyor. The scheme has also been commended by Mr. Fowler, a water-engineer of the first rank.

**Isolation Hospital needed.**—The Medical Officer of Health was unwilling to press additional expenditure on the late Board while they had the water scheme in hand. "But," he now writes. "there is no doubt that the provision of an isolation hospital for cases of small-pox, will be taken in hand by the County Council under the new Act of 1893, unless the District Council determine to do something quickly in the matter." Every effort has been made in the past to form a combined scheme, yet always without success.

**Inspection.**—There has been the usual systematic inspection of the district. Though there is much urgent work left for the Council to accomplish, yet the sanitary state of the district may be spoken of as fairly satisfactory. The common lodging-houses and canal boats have been the objects of special inspection for obvious reasons. In Middlewich the sanitary difficulties have presented themselves which always attach to the rapid development of new industries, and these have been fairly grappled with.

**Pollution of a River.**—The pollution of the river Croco has been perhaps the most serious evil connected with this industrial development. What is complained of is deposit in the stream of solid material, in distinct violation of the Rivers Pollution Act of 1876, apart from any question of doubtful or contentious chemical analysis of the water. With this matter the Council will, without doubt, deal considerably but resolutely.

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## MOTTRAM

### Urban Sanitary District.

Medical Officer of Health—DR. W. E. S. BURNETT.

Population at Census, 1891—3270.

Estimated population in middle of 1894—3270.

Area in acres—1084.

Birth-rate per 1000 living—22·0.

Death-rate per 1000 living—18·0.

Death rate from seven principal Zymotic diseases—1·2.

Deaths under one year to 1000 births—236.

The Urban District of Mottram in-Longendale includes Broadbottom.

In 1894, the number of births registered in the district was 72, and the number of deaths registered in the district was 59. The proportion of deaths among infants is remarkably large, though not as large as in 1893.

There were in all 5 deaths from zymotic diseases, viz. ;— 3 typhoid fever, 1 croup and 1 whooping-cough. There were also 3 deaths from phthisis, 14 from bronchitis or pneumonia and 6 from heart disease.

**Notification of Infectious Disease.**—The number of cases notified was 15, viz. :—2 small-pox, 3 scarlatina, 1 croup, 8 typhoid fever and 1 erysipelas. The case of croup and the case of erysipelas occurred in January. They were isolated cases, and both were investigated, but no insanitary defects were found, or other assignable cause to account for their origin. The croup proved fatal.

**Small-pox.**—A rumour reached the Medical Officer of Health of a supposed case of small-pox at Mottram Moor on the evening of May 1st. He investigated the matter that night, and found a second case in the same house. The following morning a telegram was sent to the Medical Officer of the Hyde Hospital to send an ambulance van, and at noon both patients were removed. The house, clothing, and bedding were forthwith disinfected with sulphur fumes. Two other persons living in the house with the patients were quarantined by being kept from their employment until all danger of infection was past. These measures appear to have been effective, as no other cases occurred. It was found that the persons infected had been thoughtlessly visiting a relative in Hollingworth, who had been employed at Colne, in Lancashire, and had come home with the disease. As the disease was fully developed when this man arrived from Colne, he probably infected others with whom he travelled. An instance is thus furnished of how infectious diseases are spread, and the difficulty there may be in tracing them.

**Scarlatina.**—The 3 cases of this disease notified were all of a mild character. The first case was at Mottram Moor, and its origin could not be traced. The other 2 cases were undoubtedly contracted from some of the persons belonging to the stalls, during the Wakes, who had come from Ashton, where the disease was prevalent at the time.

**Typhoid Fever.**—Of the 8 cases notified, one occurred in May, 2 in September, 1 in October, 1 in November, and 3 in December. The disease was not limited to any part of the district—3 of the cases occurring at Mottram and 5 at Broadbottom. The first case proved fatal owing to intestinal hæmorrhage and perforation. The patient was employed in Manchester and came home with the disease. In the same block of cottages, and only two doors from where this patient

died, there was another case which the Medical Officer of Health thinks was due to contagion from the first. In two other instances those who suffered from the disease were men working outside the district, and as there were no sanitary defects in or around their dwellings, presumably the disease was contracted where they worked. In the remaining 4 cases, there was nothing definite to account for the disease except the usually neglected condition of the closets and middens.

**Isolation and Disinfection.**—In all cases of infectious disease, the patients are isolated as far as possible, and the house, clothes and bedding disinfected. Disinfectants are supplied gratuitously. Healthy children residing in infected houses are prohibited from attending school, or playing with other children, until all possibility of their infecting others is past.

**Water-supply and Milk.**—The water-supply has been abundant and good throughout the year. There are no milk-shops in the district, the milk being supplied from farms outside.

**Inspection.**—The district has been inspected periodically by the Medical Officer of Health and Inspector, particular care having been given to those parts most needing attention. Slaughter-houses have been duly inspected.

There are no offensive trades carried on in the district.

**Middens &c.**—A large number of midden-privies in the district are very badly constructed, being too large, roofless and not watertight. In wet weather these are converted into cesspools of a very filthy character, the fluid portion frequently oozing through the midden walls. The bottoms of the midden-privies referred to should be raised to the ground-level, the floor and sides should be flagged or built of hard brick, laid in cement or puddled clay, to prevent soakage into the surrounding soil. Rain should be excluded by roofing the middens, and adequate ventilation should be provided.

**Emptying middens** is still carried out in a very unsatisfactory manner. The emptying should be done regularly, and at much shorter intervals than at present. It would be better if the work were done by employés of the Council.

**Nuisance abatement.**—Eighteen formal notices for the abatement of nuisances have been served, during the year. These had reference chiefly to the reconstruction of defective house drains, the removal of cesspools, the improvement of midden-privies, the removal of swine and manure. In 19 cases sink waste-pipes were disconnected and gully-traps put in. The Inspector also took observations as regards 8 cases of nuisance from smoke, and served notices; and he obtained the removal of a number of nuisances without serving formal notices.

## NANTWICH.

## Urban Sanitary District.

Medical Officer of Health—DR. J. M. Fox.

Population at Census, 1891—7412.

Estimated population in middle of 1894—7500.

Area in acres—703.

Birth-rate per 1000 living—33·3.

Death-rate per 1000 living—19·4.

Death-rate from seven principal Zymotic diseases—5·3.

Deaths under one year to 1000 births—184.

In 1894, the number of births registered in the district was 250, and the number of deaths registered in the district was 161. Of the deaths which took place in the Workhouse 15 did not belong to the town, and have been added to the deaths in the Nantwich Rural District. The number of deaths belonging to the Urban district was therefore 146.

The number of deaths from the seven chief zymotic diseases was 40, viz : 1 scarlatina, 1 diphtheria, 34 measles, 3 whooping cough and 1 diarrhœa. Thus the remarkable high zymotic death-rate was wholly due to the mortality from measles. Had there been no measles the zymotic death-rate would have been 0·8 only.

The number of infectious diseases notified was 42, viz : 31 scarlatina, 4 diphtheria, 1 membranous croup, 2 typhoid fever and 4 erysipelas.

**Scarlatina and Diphtheria.**—As among the 31 cases of scarlatina notified there was only one death, the proportion of recoveries was equal to 96·7 per cent. The fatal case occurred in the first quarter. Towards the end of the year there was some slight alarm about diphtheria, but only four cases were notified and only one was fatal. Thus two elements which used to be un-failing characteristics of the disease were lacking—its terrible fatality and its tendency to become epidemic. The Medical Officer of Health does not know a single instance in which two cases occurred in one house.

**Measles.**—The vital statistics of the district for 1894 are rendered entirely exceptional by the widespread and more than usually fatal epidemic of measles in the fourth quarter. The first death was registered on September 28th, and the last on November 21st. The disease seemed to spread itself impartially through the town, occurring in good and bad houses alike. The first death occurred in Hospital Street, the last in Pillory Street. The schools were closed for a period of three weeks. But there is always this difficulty in dealing preventively with measles, namely, that the most infectious stage of the disease is that immediately before the eruption appears, and, therefore, before the disease is recognised. There is also the long period of incubation—when a healthy child contracts the disease from

an infected one it is 14 days before the eruption appears and the disease is known to be measles. None of the large mortality can be associated with insanitary conditions. What is of the most practical importance to know is that measles is associated with cold, and demands the rigorous enforcement of warmth of the entire body. It is what may be called a cattarrhal form of disease. Had those in charge of patients kept them warm, as no doubt they were told to do, the mortality arising from the recent epidemic would have been much less than it was. Thus in 25 out of the whole number of deaths referred to measles, bronchitis or pneumonia was added on the death certificate. Indeed, the Medical Officer of Health was told by medical practitioners in the town that the attack of measles was generally very mild, and the fatality was due to complications with bronchitis and pneumonia, caused by reckless and inconsiderate exposure. Seven of those who died from measles were under one year old, and 16 were one year old and under two years. The danger of attack from this complaint decreases rapidly with accession of years, but when an adult has the disease in serious form it should be regarded as very dangerous. The first attack gives security against another attack; but to this rule there are exceptions.

When the Infectious Disease (Notification) Act was drafted, it is probable that measles was not made notifiable because so little could be done to prevent its spread, and because it has not been proved that measles depends for its origin on insanitary conditions.

Measles is a disease which has little or no power of retaining its vitality or force of infection outside the body. When an infected house has got rid of the disease by death or recovery, there need be no apprehension of its re-appearance. Disinfection is absolutely unnecessary. If Nantwich is at present free from bodies infected by measles, the disease will not be heard of again until there is an importation of fresh cases or fresh cases arise *de novo*.

**Whooping-cough** was the certified cause of death in 3 cases. The number of cases is not known, as whooping-cough like measles is not required to be notified. The Medical Officer of Health is not prepared to say that much or any advantage would, in the present state of knowledge, arise from the notification of these diseases. They cause a greater number of deaths than any of the other infectious diseases, and yet no provision has hitherto been made to prevent them from spreading. There is also an amount of mischief to be attributed to these little-thought-of ailments, in the way of impaired general health, permanent lung disease, and even blindness and deafness, which positively receives no consideration. Preventive medicine, except in the pursuit of measures of general sanitation, has done nothing to control these complaints.



**Infant Mortality.**—It should be noticed that 46 deaths (a large proportion) were of infants under one year old. The Medical Officer of Health does not believe that this high rate of infant mortality has been due to insanitary conditions. Seven of these deaths were due to measles, 9 to bronchitis, 10 to convulsions, 4 to marasmus or debility, 3 to whooping-cough and 2 to inanition.

These early deaths belong to social rather than to sanitary conditions. The principal causes will be found to be insufficient clothing and improper exposure (bronchitis and measles), improper and insufficient food (convulsions and inanition), bad management, neglect, early marriages, and debility of mothers (marasmus and premature birth). These social evils should be known to and corrected by other agencies than that of the District Council, especially schoolmasters, ministers of religion, and visitors amongst the poor. It is sad for the poor to be thus early robbed of their offspring. They have so few pleasures, and the birth of a child must be the greatest. But for a babe to be born only to die must be a source of terrible grief.

**Water-supply.**—This has proved fairly adequate throughout the year. Its quality and appearance cannot always be greatly applauded. About 250 yards of new water mains have been put down, and several extra valves have also been fixed to detect and prevent waste of water.

**Slaughter-houses.**—A lengthy Report was presented on the desirableness of the Board providing a public abattoir. Since this there has been a manifest improvement in the management of private slaughter-houses, as to the prompt removal of offal &c. There is no reason why slaughtering premises should be unhealthy and unsavoury. Indeed there is every reason for the direct opposite. A place for the preparation of meat should be as sweet as places for the storage of milk. All depends upon a strict compliance with the bye-laws; and it is because the bye-laws never are complied with, and for other reasons, that the Medical Officer of Health recommended a public abattoir.

**Isolation Hospital needed.**—The most earnest interest was exhibited by Mr. Harvey, the late chairman, in endeavouring to effect a combination with the Nantwich Rural District Council, for the purpose of securing an isolation hospital for cases of small-pox. These efforts have not been crowned with complete success, but at any rate a suitable site has been decided upon. The land is already the property of the District Council. It will be seen that the Medical Officer of the County Council, in his Report on Isolation Hospitals, presented on January 25th, 1895, naturally recommends a combination of the Urban and Rural District Councils for this object. But this is only a recommendation, and is by no means compulsory upon either Council.

**Inspector's Report.**—Fifteen new houses have been built during the year. These are provided with closets on the pail system. Twenty-two old cesspool-closets have been pulled down and are now on the pail system. Owing to the unsatisfactory state of the main sewer in Hospital Street, a length of about 200 yards of 8 inch pipes has been taken up, and 12 inch pipes put down, with a better fall. Five man-holes have also been made in this street, for inspecting the sewer, and flushing when necessary. From each man-hole a 4 inch ventilator is carried up the adjoining wall. Two man-holes have also been made in Beam Street main sewer. Ventilators have been fixed from the sewers in various parts of the town. The five settling tanks on the main sewers (to intercept solid matter) are cleaned out about once a month. The filter-beds are working fairly well. From time to time samples are taken at the outfalls, for the Board's inspection. A bad smell complained of by the inhabitants of Welsh row, was traced to a skin yard, and the nuisance was abated. The two tanneries have been frequently visited. The slaughter-houses are visited weekly. During 1894 the lodging-houses were visited daily and nine midnight visits were made to the bedrooms. The bye-laws were observed and everything was found satisfactory. The dairies and cow-sheds, of which there are 23, were also systematically inspected.

**Canal Boats.**—During 1894, the Inspector examined 58 boats, 2 of which were condemned as unfit to be used as dwellings. In November, H.M. Chief Inspector of Canal Boats, examined the Inspector's Diary, and expressed himself satisfied.

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## NESTON AND PARKGATE.

### Urban Sanitary District.

Medical Officer of Health—DR. G. A. KENYON.

Population at Census 1891—3577.

Estimated population in middle of 1894—3635.

Areas in Acres—3260.

Birth-rate per 1000 living—40·4.

Death-rate per 1000 living—19·2.

Death-rate from seven principal Zymotic diseases—5·2.

Deaths under one year to 1000 births—122.

This Urban District consists of Little Neston, Great Neston, and Leighton. The area and population are given as follows :—

|                               |        | Area in<br>Acres. |     | Population<br>at Census. |
|-------------------------------|--------|-------------------|-----|--------------------------|
| Little Neston                 | ... .. | 1214              | ... | 1012                     |
| Great Neston                  | ... .. | 1405              | ... | 2240                     |
| Leighton (including Moorside) |        | 641               | ... | 325                      |

Parkgate is on the east bank of the river Dee, and is situated partly in the township of Great Neston and partly in Leighton.

In 1894, the births registered in the district numbered 147. The deaths (including 2 that occurred in the Spital Hospital and 4 in the Workhouse) numbered 70. Both birth-rate and death-rate are high. The zymotic death-rate is exceptionally high.

The 19 deaths ascribed to the principal zymotic diseases were as follows:—4 from scarlatina, 2 from typhoid fever, 1 from measles, 5 from whooping-cough and 7 from diarrhœa. The case of measles, all the cases of whooping-cough and diarrhœa, and 2 of the cases of scarlatina were of infants or children under 5 years of age.

Among the deaths remaining, 1 was due to rheumatic fever, 5 were due to phthisis, 5 to bronchitis or pneumonia, 4 to heart disease, and 2 to injuries.

Under the Infectious Disease Notification Act there were reported 54 cases of scarlatina, 6 of typhoid fever, 2 of puerperal fever, and 1 case of erysipelas. Out of this number 25 cases of scarlatina and 1 case of typhoid fever were removed to the Spital Hospital. This is proof that the aversion to removal to hospital has largely disappeared. Such removal was very successful in preventing recurrence of disease in the families attacked.

On June 28th the Medical Officer of Health, after consultation with Dr. Blunden, advised the managers to close the National Schools. Accordingly these schools were closed. They were not re-opened till September 28th.

**Scarlatina.**—The outbreak of this disease began on March 30th. There was only one household affected in that month. In April there were 4 other households affected, in May there were 4 households and 7 in June. There were 14 households affected in July, only 2 in August and 5 in September. Three households were affected in October, 3 in November, and 3 in December. The schools were kept under observation from the first, and would have been closed earlier had there been any falling off in attendance beyond what the known cases attacked would account for. The Medical Officer of Health personally visited the spot, and made inquiries from time to time, being repeatedly in communication with the medical practitioners in the district, who assisted him in every way in preventing the spread of infection, especially in urging the removal of suitable cases to hospital, and in isolating others as far as practicable. Mr. Morris, the Inspector, rendered good service in disinfecting premises, &c.

The cases of typhoid fever and erysipelas were duly investigated, and action was taken for remedying sanitary defects where found. Disinfectants were supplied. As regards the

puerperal fever cases, precautions were taken to prevent infection being carried further.

In May the Medical Officer of Health made a general inspection of the district and noted the improvement in the sanitary condition of the locality. Attention has been given to the state of the courts, several old cottages have been removed and others improved.

The district has a pure water supply from deep wells belonging to the District Council. During the year the mains have been extended 300 yards, and three houses have been newly supplied with water.

Seven milk-houses, 3 slaughter-houses and 5 bakehouses, are regularly inspected every month.

Ten privies have been converted into water-closets. A set of trough-closets, with automatic flushing-cistern, has been provided at Parkgate Infant School.

The Inspector makes house-to-house inspections, examining about 600 houses monthly, and paying a second visit to about half of them.

Twenty-six nuisances have been abated during the year. Cases of overcrowding are infrequent.

Neston and Parkgate are well sewered, and the sewers are flushed weekly.

A Government inquiry was lately held to obtain sanction for the loan required to extend the Little Neston sewers.

The Board have undertaken the removal of ashpit and privy refuse. The work is done monthly and supervised by the Surveyor and Inspector.

Hospital accommodation is provided at Spital through the Joint Hospital Board, to which this district is contributory.

The Model Bye-laws of the Local Government Board, with respect to New Streets and Buildings, have been in force since the end of 1893.

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## NORTHWICH.

### Urban Sanitary District.

Medical Officer of Health—DR. J. M. FOX.

Population at Census, 1891—14914.

Estimated population in middle of 1894—17000.

Area in acres—1758.

Birth-rate per 1000 living—38·2.

Death-rate per 1000 living—18·7.

Death-rate from seven principal Zymotic diseases—2·4.

Deaths under one year to 1000 births—175.

This Urban District includes the parishes of Witton-cum-Twambrooks (including a formerly detached part of the parish

of Leftwich), Northwich and Castle Northwich, and parts of the parishes of Hartford, Winnington and Leftwich.

During 1894, the number of births registered was 650, and the number of deaths registered was 331. Thirteen of the deaths occurring in the Workhouse were of persons not belonging to the town, and have been added to the deaths in the Northwich Rural District. The number of deaths belonging to the Urban District was therefore 318.—The birth-rate was very high, as it usually is in Northwich, and the death-rate was below the average local death-rate.

**Infectious Diseases.**—The number of cases of infectious disease notified was 82, viz. :—5 small-pox, 44 scarlatina, 2 diphtheria, 13 typhoid fever, 5 puerperal fever and 13 erysipelas. The number of deaths from infectious disease was 41, viz. :—1 small-pox, 4 scarlatina, 30 whooping-cough, 3 typhoid fever and 3 puerperal fever. All infected premises were cleansed and disinfected.

**Small-pox.**—Four of the cases notified were treated by the Board and recovered, one was taken to the Workhouse, where death took place. The first 3 cases came from Salford to lodging-houses in Church Street. In 2 of these cases the eruption was confluent, but the patients got better and were discharged well in four weeks. The houses in which the disease occurred were closed for 14 days, and thoroughly cleansed and disinfected. Most of the clothes of the patients were destroyed. The last 2 cases were in better neighbourhoods, but the houses in which they occurred were closed, and the inmates quarantined, thus stopping all chance of the spread of disease. The entire cost of isolating and treating the small-pox cases, including compensation for damage to property as well as things destroyed, was £73 13s.

**Hospital Accommodation.**—This consists of a large room at Wade Brook and a large marquee. The room and marquee would accommodate six or seven patients without any crowding. The Medical Officer of Health is not sure that the accommodation would be considered generally satisfactory. Whether it be so or no, it has done perfectly well up to the present in providing for cases of small-pox.

**Whooping-cough.**—No less than 30 deaths were referred to this disease, and all but one were of children under 5 years old. They all occurred during the first half of the year. The number of cases is not known, but the large number of deaths must represent a large amount of suffering.

**Water-supply.**—The Medical Officer of Health wishes it were in his power to give a completely satisfactory account of the town water-supply. As to its purity there can be no question. The Wade Brook water is not used for domestic purposes, but is a valuable source of supply for street watering &c.

**Systematic inspection** of the district has been faithfully pursued under the management of the Medical Officer of Health, Mr. Brooke the surveyor and Mr. Potts the sub-inspector. Upwards of 300 visits of inspection were paid. The district is divided into three wards, and every part of each ward is visited at least once in six weeks.

**Nuisance abatement.**—For the most part the abatement of nuisances discovered or complained of is obtained by means of verbal notices, but 75 formal notices were served during the year. Forty closets were pulled down and rebuilt, and 76 old cesspool privies were done away with and replaced with pail-closets. A large number of drains were cleansed or relaid, and a large number of ashpits were repaired and covered.

**Scavenging &c.**—The scavengers have received 505 notices for the removal of house-refuse. As a rule these have been promptly attended to. The scavengers give an account fortnightly as to the progress made with their work. The Medical Officer of Health points out that in the scavenging being properly done lies the salvation of the health of the town. Yet from year to year he grows less enamoured of the pail-system.

**Sanitary State of the District.**—This is not everywhere satisfactory, but there has been progressive improvement throughout the year. It is some time since Dr. Spear, from the Local Government Board, made an inspection of the District. "Everything which he could not help but condemn is now entirely remedied."

**Dairies and Cowsheds.**—These have been visited and inspected every three months, and lime washed twice during the year.

**Slaughter-houses.**—These have been inspected every month throughout the year. Three have been altered and repaired, and most of them have been lime-washed four times during the year.

**Common Lodging-houses.**—These have been visited periodically during the year. They have mostly been kept clean and in good order. Lodging-houses are watched with particular care, when there is the slightest fear of small-pox being brought by some tramp into the district.

**Canal Boats** have been inspected throughout the year. In some instances the owners have been called upon to paint and cleanse or repair them.

**The Housing of the Working Classes Act, 1890.**—The Medical Officer of Health endeavoured to assist the Board in putting into force various sections of this Act. "But" he reports, "we have utterly failed in attaining any useful result." "This Act remains on our hands practically a dead letter."

**Unsound Meat.**—"Legal proceedings have been twice taken in regard to cases of diseased meat. In both cases convictions were obtained and fines imposed. In one instance there was an appeal to Quarter Sessions at Knutsford, but the decision of the Northwich magistrates was confirmed."

## RUNCORN.

### Urban Sanitary District.

Medical Officer of Health—DR. F. McDOUGALL.

Population at Census, 1891—20,050.

Estimated population in middle of 1894—19,000.

Area in acres—1179.

Birth-rate per 1000 living—37·3.

Death-rate per 1000 living—16·7.

Death-rate from seven principal Zymotic diseases—2·9.

Deaths under one year to 1000 births—126.

This districts includes Higher Runcorn.

It will be noted that the population of the district, as estimated for the middle of the year 1894, is 1050 less than the population enumerated at the date of the Census. This estimate appears to be warranted by the depressed state of trade locally.

In 1894 the number of births registered in the district was 710, and the number of deaths registered in the district was 302. To the number of deaths should be added 15 deaths of persons belonging to the district which took place in Dutton Workhouse. Of these 317 deaths, 90 were of infants under one year old, and 50 were of persons 65 years old and upwards. The death-rate is very much lower than that recorded in recent years in the district. The birth-rate (given for the first time) is high.

**Preventable Diseases.**—The number of cases of preventable diseases notified in the district in 1894 was 313, viz.:—Three small-pox (2 not belonging to the district), 162 scarlatina, 39 diphtheria, 30 typhoid fever, 37 continued fever, 1 puerperal fever, and 41 erysipelas. Of these the 3 small-pox cases, 1 case of scarlatina, 1 of diphtheria, and 3 cases of typhoid fever, were isolated and treated in hospital. The number of cases notified in 1893 was 546 (including 144 cases of small-pox), and the number notified in 1892 was 272.

In 1894 the number of deaths from zymotic diseases was 59, viz.:—One small-pox (not belonging to the district), 9 scarlatina, 9 diphtheria, 7 typhoid fever, 1 continued fever, 1 puerperal fever, 2 erysipelas, 1 measles, 10 whooping-cough, and 18 diarrhœa. The death-rate in respect of the seven chief zymotic diseases (2·9) is high, but it compares favourably with the corresponding death-rate in 1893 (7·1). This death-rate being high is largely due to the infant mortality from diarrhœa.

**Small-pox.**—Three well-marked cases were notified during July, 1 on the 9th, 1 on the 21st, and 1 on the 28th. The first case, a man, was found by some working men lying on a piece of land near the Top Locks. One of the Ship Canal Company's police was informed of the discovery, and he communicated with the Medical Officer of Health. The case was at once removed to the Isolation Hospital. According to the man's statement he came from Manchester three days before he was found, and on the journey from Manchester he was taken on board a narrow boat half way down and landed at Runcorn. He could not, or would not, give the name of the boat, and it was impossible to trace it although a good portion of two days was spent hunting for it, on various parts of the Canal. The second case was that of a woman, who had been about the town drinking for three days before the eruption came out. On investigation it was discovered that she had "formed one of the crew of the narrow boat from which the man was landed at Runcorn and subsequently removed to the Isolation Hospital." Indeed the captain of the boat admitted that this woman was on board "when he gave the man a lift to Runcorn." It appears that this boat reached Runcorn on a Friday evening and returned on Saturday. On the following Monday the man (Parker) was discovered ill and removed. Ten or twelve days later the woman sickened, and when the disease was recognised and notified, she also was removed to hospital. The third case was that of a resident in the town who was undoubtedly infected from this woman. He met her on licensed premises on the day on which she was taken to hospital, and on the 28th he too was taken there. In the case of the men the eruption was discrete and they made good recoveries. The woman had the disease more severely and succumbed, the immediate cause of death being inflammation of the lungs. The older members of the family of the third patient were re-vaccinated, and there was no further extension of the disease.

**Scarlatina.**—The number of cases notified (162) in 1894 was more than double the number notified in 1893. The number of houses implicated in 1894 was 122. The disease was most prevalent in July, October and December. The disease was of a mild type and the proportion of deaths to cases only 5·5 per cent.

**Diphtheria.**—The number of cases notified (39) in 1894 was 3 in excess of the number notified in 1893. The proportion of deaths to cases was about 26 per cent. A third of the whole number was notified in October and not a single case in June. Of those returned as dying from the disease, one was 13 days old, 3 were a month old, one was 5 months old, one was 13 months old, one 18 months old, and one 2 years and 9 months old. The Medical Officer of Health notices "that the opinion is gaining ground that many so-called cases of diphtheria are



nothing of the kind and that it is only by the new method of bacteriological examination that this moot question can be settled," and in this he quite concurs.

**Typhoid and Continued Fever.**—The 30 cases notified as typhoid and 37 as continued fever in 1894 compare favourably with 82 of the former and 142 of the latter notified in 1893. As there were 7 deaths certified typhoid and one death certified continued fever, the proportion of deaths to cases was about 12 per cent. Four of the cases notified as typhoid fever were imported. The Medical Officer of Health is of opinion that "as water-carriage increases typhoid fever will diminish."

**Puerperal Fever** is represented by one case which terminated fatally. The habits of this person probably pre-disposed her to the onset of the fever.

**Erysipelas.**—The 41 cases and 2 deaths in 1894 compare favourably with the 55 cases and 4 deaths in 1893.

**Diarrhœa** was the certified cause of death in 18 cases, all those who died being under five years of age. The number of deaths from this cause in 1893 was 87. Even 18 is a large number. Weakly infants and bottle-fed infants are peculiarly liable to this disease.

**Excremental Disposal.**—The Medical Officer of Health is pleased to report that water-carriage has made steady progress during the year. He thinks it is not too much to predict that as water-carriage becomes more general, fevers and other diseases usually associated with sewage soaked condition of the subsoil and with defective sewerage and drainage arrangement will cease. Seventy-two w.c.'s with flushing cisterns were provided during the year, and 68 w.c.'s with "tippers," besides 3 trough-closets.

The Inspector (Mr. Percival) furnishes information as to matters coming under his supervision.

**Nuisance Abatement.**—The number of nuisances discovered or brought to the knowledge of the Inspector was 607, the number abated was 566, and the number outstanding on December 31st was 41. The number of preliminary notices issued in respect of these nuisances was 259 and the number of statutory notices served was 46. A large number of the nuisances were owing to various defects at dwelling-houses—defective drains and gullies, obstructed drains, sinks directly connected to drains, insanitary ashpits and privies, defective rain spouts, unpaved yards and passages, &c., houses without proper ventilation, houses without proper supply, dirty houses, accumulations of manure, &c. In six instances nuisances arose from overcrowding.

**Dairies and Milkshops** have been under regular supervision, and in only a few instances has there been any cause of complaint.

**Common Lodging-houses.**—These houses are registered, and have been regularly inspected. Owing to the completion of the Manchester Ship Canal there is comparatively but little demand for this class of accommodation.

## SALE.

### Urban Sanitary District.

Medical Officer of Health—DR. G. S. WITHERS.

Population of Census, 1891—9644.

Estimated population in middle of 1894—10200.

Area in acres—2006.

Birth-rate per 1000 living—26·3.

Death-rate per 1000 living—13·4.

Death-rate from seven principal Zymotic diseases—1·3.

Deaths under one year to 1000 births—122.

During 1894 the number of births registered was 269 (143 males and 126 females), and the number of deaths registered was 137 (73 males and 64 females). The mean birth-rate of the four years, 1890-93, was 24·1. The mean death-rate of the four years, 1890-93, was 13·5. Thus in 1894 the birth-rate was a little higher and the death-rate a little lower than the mean of recent years.

The number of fatal cases of the seven chief zymotic diseases, in 1894, was 14, viz. :—Four scarlatina, 3 diphtheria, 1 typhoid fever, 3 measles, 2 whooping-cough, and 1 diarrhœa.

The number of cases of infectious disease notified was 88, viz. :—71 scarlatina, 10 diphtheria, 3 membranous croup, 2 typhoid fever, and 2 erysipelas. Of these, 3 cases of scarlatina and 1 case of typhoid fever were isolated at the Monsall Fever Hospital.

**Scarlatina.**—A mild epidemic of this disease has prevailed continuously during the whole of the year. Eight cases were reported in the first quarter, 22 in the second quarter, 16 in the third quarter and 25 in the last quarter. No doubt owing to the mildness of the disease, a certain number of cases escaped observation. All classes appear to have suffered equally. There has been no reason to suppose that school attendance or any other single agency has been specially concerned in its spread.

**Diphtheria and Croup.**—Of the 13 cases reported of diphtheria and membranous croup, only 3 were associated with sanitary defects. In a yard adjoining the premises on which one case occurred a pony and some poultry were kept in a dirty condition

and too confined a space. In another case the garden next the premises was filthy from fowls, &c. In the third case, occurring in a small old-fashioned cottage, a drain was found running beneath the scullery and communicating therewith by means of a grid. Of the 10 cases notified as diphtheria 3 proved fatal. The 3 cases notified as croup were all fatal.

**Measles and Whooping-cough.**—Measles of a mild type widely prevailed throughout the year. Whooping-cough was also epidemic, the cases for the most part being of an unusually slight character.

**Phthisis** caused but 8 deaths. It does not seem to be sufficiently well known that there is good reason for classing phthisis among the communicable diseases. The public is still less aware of the methods and limits of contagion. Hence injustice is done to both the healthy and diseased. If care were taken to destroy, either by adequate disinfection or by burning, the expectorations of phthisical patients, there would not apparently be any risk in their contact with the healthy.

**Need of Isolation Hospital and Disinfectors.**—It has been often pointed out how much the sanitary department of the district would be strengthened by having an isolation hospital and disinfecting apparatus within reasonable distance. The Medical Officer of Health is pleased to learn the need of these is admitted and that there is a prospect of supplying them.

**Action taken to prevent the spread of infection.**—With very few exceptions, the houses in which infectious disease occurred were personally visited by the Medical Officer of Health, and directions given for limiting the spread of disease and for removing insanitary conditions. It is satisfactory to note, in this connection, that there is a much greater willingness of late, on the part of the people, to take advantage of modern methods of disinfection. There is, indeed, risk of this willingness being in advance of the Sanitary Department's preparedness to utilize it. Having to send bedding, &c. requiring disinfecting to Manchester is not in all respects satisfactory.

**Sewer Ventilators.**—There was very little complaint, in 1894, of nuisance arising from sewer ventilators. The Medical Officer of Health believes that in no case were effluvia from the ventilators alleged to be the cause of disease.

**Nuisance Abatement.**—The Medical Officer of Health in the course of his inspections of the district has seldom had to complain of ashpits over-full or refuse left in entries or courts. The following are the more serious nuisances which came under his observation, and for the abatement of which steps were taken: Ten defective drains, 4 defective closets and ashpits, 3 closets and ashpits too near houses, 1 defective soil pipe, 4 heaps of refuse requiring removal, and 5 cases of offensive odours in houses or of animals so kept as to be a nuisance.

The large area included between Brook Street and Bank Street and the passage at the back of Bank Street, so often complained of in the Reports of the Medical Officer of Health, has at last been thoroughly flagged.

**The new Sewage Scheme** has made rapid progress during the year and is now near completion.

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## SANDBACH.

### Urban Sanitary District.

Medical Officer of Health—Dr. J. M. Fox.

Population at Census, 1891—5824.

Estimated population in middle of 1894—6000.

Area in acres—2694.

Birth-rate per 1000 living—31·6.

Death-rate per 1000 living—14·6.

Death-rate from seven principal Zymotic diseases—0·5.

Deaths under one year to 1000 births—110.

Sandbach is distinctly a salubrious place. Its atmosphere is bright and invigorating—qualities which are conducive to health, long life, and cheerfulness. It is situated at such a distance from industries that the impurities and smoke and emanations from works rarely find access to its atmosphere. The old factories in its own precincts are now, and have been for many years, still and silent. It is a pity, surely, that it should be so, but while this interval of rest endures a higher purity of atmosphere is enjoyed.

In 1894 the number of births registered was 190, and the number of deaths registered was 88. The birth-rate is 1·9 below the mean birth-rate of the district, and the death rate is 1·5 below the mean death-rate of the district. Twenty seven deaths (30·7 per cent.) were of persons 65 years old and upwards, and 21 deaths (23·8 per cent.) were of infants under one year old.

There were only three deaths referred to zymotic diseases, viz. :—2 measles and 1 diarrhœa. The zymotic death-rate was therefore very low.

**Water-supply.**—The town water-supply continues to give satisfaction. There are in the district 1341 houses, and of these 1067 are now using the town's water, 75 are off the pipe line, and 104 are supplied from private wells, the water of which has been reported on and approved by the Analyst. Thus 95 houses have still to be fitted up; 17 of these are in the town and 78 are in an outlying district where the mains have only recently been laid down. The average number of degrees of hardness in the water has been 5·2. The water revenue from various customers is £700, and this it is hoped will meet nearly all the charges in respect of water.

**The Sanitary state of the District** is fairly good, considering the age of the buildings and the kind of closets provided. About one-third of the houses have pail-closets, and since the public water has been laid on, a considerable number of w.c's have been put in. The rest of the houses have "the old fashioned cesspools." Many of these have been altered so as to keep the excreta and dry ashes separate. By this means the excreta can be covered in from the sun and rain, and the dry ashes can be removed in the daytime without creating a nuisance.

**"Pail System" condemned.**—"The Local Government Board," writes the Medical Officer of Health, "have changed their minds in regard to what is called the pail system. This system they used to approve and recommend. But lately, at a Local Government Board Inquiry, at Lostock Gralam, an endeavour was made by the Inspector who was sent down to hold the inquiry to condemn the whole of our pails, and to place the whole village upon the water-closet system. This proceeding the Local Authority and ratepayers naturally and universally resented; and it was only by a strong representation, made up very much of extracts from Reports, and not remote ones, presented by Inspectors of the Local Government Board advocating, or at least approving, the pail system, that we obtained a reprieve. But the reprieve was only to extend over three years."

**Scavenging.**—The Surveyor, Mr. Wood, reports as to the removal and disposal of excreta, ashes, &c. During the year 2125 visits were paid for the removal of ashes, and 1400 loads taken away, and 10527 visits were paid for the removal of night-soil, and 559 tubs were disposed of—value £116 3s. 3d. This is not an estimated or approximated value, for between January 1st and December 31st, 1894, the amount collected and paid to the Treasurer for nightsoil was £137 4s. 9d. This is the largest sum ever realised in one year for nightsoil. The result to the crops has been good in all cases.

**New Houses.**—Nineteen new houses have been erected during the year. In all cases 9 inch party-walls have been insisted on, between dwellings, to secure complete isolation. A number of new erections are semi-detached; this mode of building may result in more damp walls, but there will be more light and air round the dwellings.

**Overcrowding.**—No overcrowding was discovered or reported during the year. The late Board very properly insisted on three bedrooms being shown in every plan for a new house, and many of the old houses are being altered so that each house shall have three bedrooms.

**Isolation Hospital.**—The hospital provided at Arclid, for Sandbach and the Congleton Rural District, seemed to satisfy the requirements of the Medical Officer of the County Council.

**Slaughter-houses.**—The slaughter-houses of the district cannot be considered satisfactory. The first and most important necessity for an approved slaughter-house is a suitable site. It should be in connection with the water-supply and the sewer, but should be a sufficient distance from houses, thoroughfares and public observation. Now it is in this respect that the slaughter-houses of Sandbach, especially two of them, are very much at fault.

“It should be borne in mind” writes the Medical Officer of Health, “that slaughter-house premises should not be a nuisance according to the common meaning of the word nuisance. Why should not the atmosphere surrounding our fresh meat, hung up in order that it may acquire its proper set and bloom, be as sweet as the atmosphere of our dairies and milk-shops? All depends upon a proper observance of the bye-laws, which enjoin a prompt removal after slaughtering of blood and offal and all decomposing matters. I am bound to say that frequent cautions have been given to the butchers in this respect, and there has been considerable improvement in consequence. But I should greatly desire to visit these places in company with the Sanitary Committee of the Council, and confer with them as to whether any further steps should be taken, and, if so, what steps.”

**Dairies and Cow-sheds** have been visited and found clean and in good order.

**Common Lodging-houses.**—These, with the exception of Peover's, are the most suitable buildings for the purpose that could be found in Sandbach. When visited they were found clean and in good order.

## TARPORLEY.

### Urban Sanitary District.

Medical Officer of Health—DR. G. A. KENYON.

Population at Census, 1891—2702.

Estimated population in middle of 1894—2716.

Area in acres—6194.

Birth-rate per 1000 living—31·2.

Death-rate per 1000 living—23·5.

Death-rate from seven principal Zymotic diseases—1·8.

Deaths under one year to 1000 births—176.

This Urban District consists of Rushton, Eaton, Utkinton, and Tarporley. The area and population are given as follows:—

|   | Area in Acres. | Population at Census. |
|---|----------------|-----------------------|
| Rushton ... ..                              | 1797           | 324                   |
| Eaton ... ..                                | 1344           | 461                   |
| Utkinton (including Cotebrook)...           | 1889           | 498                   |
| Tarporley (including Rhuddall Heath) ... .. | 1164           | 1419                  |

In 1894 the births registered in the district numbered 85, and the deaths (including a death in the Chester Infirmary of a person belonging to the district) numbered 64. The death-rate is high, and the proportion of deaths among infants is large. A considerable proportion of the infant mortality was attributed to weakness at birth or premature birth.

There was 1 death from measles, 1 from scarlatina, 1 from erysipelas, 1 from typhoid fever, and there were 2 deaths from puerperal fever, 4 from phthisis, 7 from heart disease, and 9 from bronchitis or pneumoëria.

Under the provisions of the Infectious Disease (Notification) Act there were reported 10 cases of scarlatina and one case of typhoid fever. Five of the scarlatina cases were in one house and two in another. The cases were all well isolated at home, as regards the protection of the public, and there was little spread of disease. The houses were examined for defects, and disinfectants were supplied where required.

The Medical Officer of Health has pleasure in acknowledging the courtesy of medical practitioners in the District in answering the supplementary questions on the notification forms, and doing what they can to prevent the spread of infection.

There is no Isolation Hospital for this district. Some years ago the Local Board endeavoured to form a combination with neighbouring Authorities for the purpose of providing a hospital. Such a combination is now rendered possible by the powers conferred on the County Council, under the Isolation Hospitals Act of 1893.

In June and July the Medical Officer of Health made a general inspection of the district and advised the Inspector, and subsequently the Board, on sundry points of detail in connection with the ordinary sanitary work of the district.

**Bakehouses, Cowsheds and slaughter-houses.**—Five bakehouses, 7 licensed cow-houses and 3 slaughter-houses, in the district, are regularly inspected. Special attention has been given to them. Speaking generally they are in very good condition.

**Water-supply.**—The work of joining houses with the water-mains has been continued, and 30 additional houses have been thus supplied during the year. In all 190 houses are now supplied for domestic purposes, in addition to the supply to butchers, bakers, dairies &c., for business purposes.

During the year 9 samples of well-water were submitted to the Medical Officer of Health for analysis. Of these 3 were found to be contaminated.

**Sewers, Ashpits &c.**—A further important section of the sewerage of Tarporley has been completed. Except in a few instances little difficulty has been found in getting privies and ashpits emptied. Owing to the almost entirely rural character

of the district, the houses are for the most part surrounded by agricultural land, and farmers are always willing to undertake the task. In cases of difficulty the Surveyor intervenes.

**Inspector's Report.**—Mr. Knight, the Inspector of Nuisances, makes a very complete report of his work during the year. According to this 25 complaints have been received and 140 houses have been specially inspected. Twenty-four orders were issued for the amendment of sanitary defects, 10 houses were cleansed, repaired or whitewashed, 5 were disinfected after infectious disease, 12 house-drains were repaired or cleansed, 15 privies were repaired or cleansed, 7 privies were structurally altered and made dry, and 7 accumulations of refuse &c. were removed. In 5 cases animals so kept as to be a nuisance were removed.

There appears to be little overcrowding, and there are no one-room tenements in occupation. There are 2 registered lodging-houses which are under supervision.

## WALLASEY.

### Urban Sanitary District.

Medical Officer of Health—DR. A. CRAIGMILE.

Population at Census, 1891—33229.

Estimated population in middle of 1894—37000.

Area in acres—3408.

Birth-rate per 1000 living—27·1.

Death-rate per 1000 living—14·2.

Death-rate from seven principal Zymotic diseases—1·7.

Deaths under one year to 1000 births—115.

This Urban District includes the three Townships of Poulton-cum-Seacombe, Liscard and Wallasey. The area of these and population at Census were as follows:—

|   | Area in Acres. | Population at Census. |
|---|----------------|-----------------------|
| Poulton-cum-Seacombe ...                      | 830            | 14839                 |
| Liscard (including Egremont and New Brighton) | 982            | 16323                 |
| Wallasey ...                                  | 1596           | 2067                  |

The estimated population, birth-rate and death-rate of these three townships in 1894 were as follows:—

|                      | Population. | Birth-rate. | Death-rate. |
|----------------------|-------------|-------------|-------------|
| Poulton-cum-Seacombe | 16600       | 32·1        | 15·0        |
| Liscard ...          | 18100       | 22·5        | 13·7        |
| Wallasey ...         | 2300        | 26·5        | 12·1        |

In calculating the above death-rates the deaths in the Seacombe and Wallasey Cottage Hospitals, the Mill Lane



Hospital, and the Convalescent Home have been referred to the townships to which they belonged.

The number of births registered in the whole district, in 1894, was 1003. The number of deaths registered in the whole district, in 1894, was 526. The birth-rate is 2·8 below the mean birth-rate of the six years 1888—93. The death-rate is 2·2 below the mean death-rate of the six years 1888—93. It is remarkable that Poulton-cum-Seacombe registered 126 more births than Liscard, though the population was less by 1500. The number of deaths was 173 in the first quarter, 131 in the second quarter, 114 in the third quarter and 108 in the last quarter. The death-rates of the four quarters were therefore respectively 18·7, 14·1, 12·3 and 11·7. Thus the health of the district improved as the year advanced.

The following meteorological results, obtained through the courtesy of Mr. Plummer from the Bidston Observatory, show the mean temperature, mean barometer, and the amount of rainfall in inches for every month of the year 1894. The mean barometer as given below has been reduced to 32° Fahrenheit and to sea level:—

| 1894.     |     |     | Mean<br>Temperature<br>(degrees). | Mean<br>Barometer<br>(inches). | Rainfall<br>(inches). |
|-----------|-----|-----|-----------------------------------|--------------------------------|-----------------------|
| January   | ... | ... | 39·1                              | 29·768                         | 1·694                 |
| February  | ... | ... | 42·5                              | 29·924                         | 3·177                 |
| March     | ... | ... | 45·5                              | 29·911                         | 1·558                 |
| April     | ... | ... | 50·5                              | 29·845                         | 1·596                 |
| May       | ... | ... | 49·1                              | 29·955                         | 2·475                 |
| June      | ... | ... | 57·7                              | 29·990                         | 1·958                 |
| July      | ... | ... | 60·9                              | 29·862                         | 3·284                 |
| August    | ... | ... | 58·0                              | 29·829                         | 3·062                 |
| September | ... | ... | 54·1                              | 30·188                         | 0·916                 |
| October   | ... | ... | 49·7                              | 29·906                         | 3·988                 |
| November  | ... | ... | 47·3                              | 29·891                         | 1·989                 |
| December  | ... | ... | 43·0                              | 29·965                         | 2·215                 |

The Medical Officer of Health draws attention to the marked difference between the temperature and rainfall of 1894 and the temperature and rainfall of 1893. The sign + indicates an increase for 1894, and the sign — a decrease for 1894, as compared with the corresponding month of 1893.

| 1894.     |     | Mean Temp.<br>in degrees. |     | Rainfall<br>in inches. |
|-----------|-----|---------------------------|-----|------------------------|
| January   | ..  | + 1·6                     | ... | + 0·227                |
| February  | ... | + 1·3                     | ... | + 0·304                |
| March     | ... | —1·0                      | ... | + 1·027                |
| April     | ... | —0·5                      | ... | + 1·096                |
| May       | ... | —6·4                      | ... | + 0·818                |
| June      | ... | —3·5                      | ... | + 0·413                |
| July      | ... | —1·0                      | ... | + 0·148                |
| August    | ... | —5·7                      | ... | + 0·726                |
| September | ... | —1·9                      | ... | —2·485                 |
| October   | ... | —1·5                      | ... | + 1·348                |
| November  | ... | + 5·0                     | ... | + 0·569                |
| December  | ... | + 0·4                     | ... | —0·816                 |

This comparison shows that the mean temperature of the eight months from March to October was lower in 1894 than in 1893, and that the monthly rainfall in 1894 was greater than in 1893 except in September and December. The mean temperature of 1894 was about one degree lower than the mean temperature of 1893. The amount of rainfall in 1894 was 3·375 inches more than the amount of rainfall in 1893. It is interesting to note that this decrease in the summer temperature and increased rainfall was accompanied by a decrease in infantile diarrhœa and typhoid fever (referred to later), whereas the higher temperature at the beginning and end of the year helped to prevent a rise in the deaths from diseases of the respiratory organs.

The proportion of deaths under one year to births, in 1894, is low for an Urban District, and lower than it has been in recent years. Twenty-three per cent. of those who died were persons 60 years old and upwards.

Only 7 of the whole number of deaths were not certified by a registered medical practitioner or coroner—that is 1·33 per cent. Fifty inquests were held during the year.

The principal zymotic diseases caused 64 deaths, viz. :—8 measles, 5 scarlatina, 4 diphtheria, 14 whooping-cough, 15 fevers, and 18 diarrhœa. The exact locality in which these deaths occurred is indicated on a map, a distinguishing mark being allotted to each disease.

**Cases of Infectious Disease Notified.**—The number of cases notified under the Infectious Disease Notification Act, in 1894, was 435, viz. :—One small-pox, 246 scarlatina, 30 diphtheria, 5 membranous croup, 89 typhoid fever, 4 puerperal fever, and 60 erysipelas.

**Small-pox.**—The only case of this disease in the district, in 1894, was notified in November. The patient was a man employed on board a Belfast steamer, and his duties brought him in contact with a sick passenger bound for Liverpool. The nature of this passenger's illness was unknown at the time, but

it afterwards proved to be small-pox. The Medical Officer of Health saw the patient at his own home with his medical attendant, and removal to hospital was effected without delay. All the household were re-vaccinated, and the usual prompt measures were taken for disinfecting the house and all infected articles. "The value of having a hospital in readiness for such cases cannot be over-estimated."

**Measles** was registered as the cause of death in 8 cases, in 1894. In 1893 there was but one death from this disease, in 1892 there were 31 deaths. The death-rate in 1894 was equal to 0·21 per 1000 living. All the deaths occurred in the second quarter except one in March. Five were in Seacombe, 2 in Liscard proper, and 1 in New Brighton.

**Scarlatina.**—The number of cases notified in 1894 was exactly double the number notified in 1893. Cases were notified during every month in the year, but of the whole number (246) 101 was notified in January and February. At Seacombe there were 155 cases, at Egremont 16, at New Brighton 39, at Liscard proper 34, and at Wallasey 2. Seventy-three of the patients were under five years of age. All the deaths were in Seacombe; 1 took place in January, 3 in February, and 1 in July. The death-rate was equal to 0·13 per 1000 living. Infected premises and articles were disinfected by the Authority, and notices were sent to the schools attended by children from infected households.

**Diphtheria and Croup.**—Thirty cases of diphtheria and 5 of croup were notified. Four of the diphtheria cases terminated fatally, and so did all the so-called cases of croup. Of the deaths certified as diphtheria, 2 were at Seacombe, 1 was at Egremont, and 1 at New Brighton. Of the deaths certified as croup 3 were at Seacombe, 1 was at Liscard and 1 at New Brighton. Ten of the diphtheria cases and all the croup cases were children under five years old. The death-rate of the two diseases, taken together, was equal to 0·24 per 1000 living.

It is worthy of note that diphtheria did not seem to be connected with school attendance, as it was in 1893, and has been so often all over the country. Notices were sent to the schools attended by children from infected households, and children were kept from school till danger was over.

A good many sanitary defects were discovered in connection with houses where diphtheria and membranous croup occurred. For instance there were foul smells in one house from a sewer man-hole immediately in front, and in the yard of this house was an open drain; at another house the yard drain was choked; at another the trap of the yard drain was defective allowing the escape of sewer gas; and at two houses the rain-spouts had open joints and were directly connected to the drains. At another house the closet was choked and insufficiently supplied with water, and sewer gas escaped from the yard gully.

Again, at one new house the soil-pipe joints were open, at a second new house there was no fresh air inlet to the drain, and at a third the fresh air inlet had been covered up.

The Medical Officer of Health remarks that "there is no doubt that some cases of inflammation of the tonsils and throat are notified as diphtheria, for it is only quite recently that it has been possible to recognise true diphtheria by microscopic examination of the secretion which contains a bacillus or germ characteristic of the disease. There are good grounds for hoping that this terrible disorder will be rendered far less fatal in the future by the use of the substance known as antitoxin."

**Whooping-cough** was registered as the cause of death in 14 cases in 1894, yielding a death-rate of 0·38 per 1000 living. All the deaths occurred in the first half of the year. Thus whooping-cough and measles seem to have prevailed at the same time, as they have in previous years. Of the 14 deaths 5 were at Seacombe, 8 at Liscard, and 1 was at Egremont.

**Diarrhœa**, in common with measles and whooping-cough, is not required to be notified. The relative prevalence of these diseases can therefore only be indicated by their mortality. In 1894, 18 deaths were ascribed to diarrhœa, yielding a death-rate of 0·48 per 1000 living. All those who died were under five years of age—15 being under one year. There was also a death of an adult male from dysentery. Twelve of the 18 deaths from infantile diarrhœa occurred in August. Ten were in Seacombe, 3 in Liscard, 2 in Egremont, 2 in New Brighton and 1 was in Wallasey. The deaths in Seacombe were among the poorest living there. In 1893 there were 33 deaths from diarrhœa.

**Fevers.**—Eighty-nine cases of typhoid fever were notified, and of these 13 proved fatal. The typhoid fever death-rate was thus 0·35 per 1000 living in the district—more than twice as high as the corresponding death-rate for England and Wales. Four cases of puerperal fever were also notified, of which 2 proved fatal (in Liscard). No case of typhus fever occurred, though the disease prevailed in Liverpool. In 1893, the number of typhoid fever cases notified was 132, of which 23 were fatal, and the number of puerperal fever cases notified was 6, of which 3 were fatal. The local fever record for 1894 therefore compares favourably with the record for 1893. Of the 89 typhoid fever cases notified in 1894, 11 were in the first quarter, 22 in the second, 21 in the third, and 35 in the last. As regards locality, 39 were at Seacombe, 18 at Liscard proper, 20 at New Brighton, 11 at Egremont and 1 was at Wallasey. Of the deaths from typhoid fever, 5 were at Seacombe, 3 at Liscard, 4 at Egremont and one was at New Brighton.

No case of typhoid fever has been traced to polluted milk or water-supply, although when cases were investigated the possibility of this being the cause was borne in mind. The defects found in the drains and sanitary fittings of houses where

cases occurred were far too numerous, but neither so frequent nor so grave as in former years. They were of much the same nature as those recorded in previous Reports, and notices were served to remedy them.

It is gratifying to the Medical Officer of Health to be able to show a substantial decrease in the number of deaths from typhoid fever and diarrhœa, but it would be premature to conclude that the decline is to be permanent. The meteorological conditions in 1893 were favourable to the prevalence of typhoid fever and diarrhœa, while in 1894 they were unfavourable. Though weather conditions such as obtained in 1893 will not in themselves cause typhoid fever, yet if the poison is present in the soil or air it produces far more direful effects under favourable circumstances. Whatever other causes have been in operation, the state of the old sewers and drains have been mainly responsible for the excess of typhoid fever in the district, and as the work of examining and reconstructing these progresses, a corresponding abatement in the prevalence of typhoid fever may be looked for.

In the course of the year under review, a resolution was passed that a systematic and thorough survey of all the sewers should be made, and that a record of results should be kept not only in writing, but in map form, and for this the Surveyor was provided with a special assistant. The deposits in the sewers, the faulty connection of house drains, the leakages and catch-pits discovered already in these old sewers, show that it was high time to take this work in hand on a regular plan instead of in a haphazard way. The time spent and the trouble and expense incurred will be well repaid in a decrease of typhoid fever, diarrhœa, and phthisis, and in many other ways.

**Epidemic Influenza**, which was prevalent at the end of 1893, was severe in the early part of the year 1894. Six deaths were recorded, all during January. In 1893 there were 12 deaths from this disease, and in 1892, 8 deaths. The epidemic in the winter 1893-94 was the fifth local visitation of the disease.

**Persons from Infected Ports.**—All persons landing in or coming to Wallasey from ships hailing from infected ports, are notified to the Clerk to the District Council, and are visited by the Inspector, but nothing suspicious arose in connection with any such person, in 1894.

**Drain-flushing.**—The systematic flushing of house-drains has been carried on throughout the year. A special gang of flushers attends to the drains of houses where infectious disease has been notified, disinfectants being used in such cases.

**Hospital accommodation** is provided at Mill Lane. This was more largely used in 1894 than in any previous year, in all 99 cases being admitted. In 1893, 62 cases were admitted

to hospital, and in 1892, 39 cases were admitted. Particulars of the cases treated, in 1894, are as follows:—

|                                    | Small-pox. | Croup & Diphtheria.       | Scarlatina. | Typhoid.                 | Erysipelas. |
|------------------------------------|------------|---------------------------|-------------|--------------------------|-------------|
| Poulton-cum-<br>Seacombe } ...     | 1          | 5 (1 death)               | 22          | 15                       | ... 1       |
| Egremont ...                       | 0          | 1                         | 8           | 2 (1 death)              | 0           |
| Liscard proper                     | 0          | 2                         | 12          | 5                        | ... 0       |
| New Brighton                       | 0          | 2 (1 death)               | 12          | 17                       | ... 0       |
| Wallasey ...                       | 0          | 0                         | 2           | 1                        | ... 0       |
| Meolse (outside<br>District) } ... | 0          | 0                         | 0           | 1                        | ... 0       |
| <b>Total ...</b>                   | <b>1</b>   | <b>10 (with 2 deaths)</b> | <b>56</b>   | <b>31 (with 1 death)</b> | <b>1</b>    |

There were thus only 3 deaths, viz: 1 from croup, 1 from diphtheria and 1 from typhoid fever; while no death occurred among the 56 scarlatina patients. This speaks well for the skilled nursing and care the patients receive.

The accommodation was increased by the opening of a new pavilion in September. It is most complete in all its arrangements, and so far has been used for cases of typhoid fever. It contains a male and female ward, each furnished with 6 beds and 1 cot. Attached to each ward is a convalescent room, capable of being converted into a private ward if occasion arises. The convalescent room for males has already been used thus.

The Medical Officer of Health is anxious to see some provision made for small-pox or typhus fever patients, so as to accommodate them in a building quite apart, and so secure complete isolation for these diseases.

The Matron, Miss Malcolm, owing to a severe illness, obtained leave of absence for two months at the end of the year, her place being temporarily filled by Miss Franklin, who discharged her duties most satisfactorily. Miss Malcolm returned in January, 1895.

**Emptying Ash-pits, &c.**—The collection of night-soil and ash-pit refuse was not satisfactorily carried out during 1894, in spite of the special provisions made by the Health Committee to insure its being properly done. The troublesome question of how to dispose of this stuff will soon, it is hoped, be set at rest by the completion of the destructor, which will be ready in a short time to commence work.

**Vaccination Returns.**—These refer to 1041 births registered during the year ending June 30th, 1894. The particulars are supplied by Mr. Stewart, Vaccination Officer.

|                                  |     |     |     |     |             |
|----------------------------------|-----|-----|-----|-----|-------------|
| Successfully vaccinated          | ... | ... | ... | ... | 928         |
| Insusceptible                    | ... | ... | ... | ... | 5           |
| Died before vaccination age      | ... | ... | ..  | ... | 87          |
| Postponed by Medical Certificate | ... | ..  | ... | ... | 12          |
| Removed and traced               | ... | ... | ..  | ... | 1           |
| Removed and not traced           | ... | ... | ... | ... | 7           |
| In default                       | ... | ... | ... | ... | 1           |
| <b>Births registered</b>         | ... | ... | ... | ... | <b>1041</b> |

This shows that only a percentage of 0·8 escaped vaccination. While small pox has of late spread in Liverpool and other localities, it is reassuring to know that in the Wallasey District the great safeguard against disease is so well utilised.

**Water-supply.**—The local water-supply is good but hard. Particulars of the amount pumped and its distribution are supplied by Mr. Hill, the Water Engineer. The average quantity used per head per day, in 1894, was 34·17 gallons, divided as follows :—

|  | Gallons. |
|--|----------|
| Watering streets and road making... ..   | 0·19     |
| Supplied by meters ... ..  | 4·18     |
| Supplied to shipping ... ..  | 0·10     |
| Flushing sewers ... ..   | 0·88     |
| Domestic and other purposes, including drinking-<br>fountains, gardens, &c., by assessment ... | 28·82    |

The quantity of water used for flushing sewers and drains, during the year ending December 25th, 1894, was 12, 954, 604 gallons.

The new well at Sea View Road was formally opened on November 17th and the water from this source has been a great boon to the inhabitants, taking the place of the brackish water from No. 1 well, Poulton. The new supply is pleasant to drink, entirely free from salt taste, and is extremely pure and wholesome water as a beverage. The Water Committee and Mr. Hill have rendered a most important service to the sanitary well-being of the district by providing such an abundant supply of drinking water.

Appended to the Medical Officer's Report is the Sanitary Inspector's Report. In his opening paragraphs he refers to the fact that he has only one assistant and proposes that the District Council should consider the advisability of recommending a substantial and permanent increase in the staff of the department. The following matters are dealt with :—

**Nuisance Abatement.**—The number of notices issued for the abatement of nuisances was 696. The nuisances abated were the result of insufficient drains, defective drains, choked drains, broken water-fittings, no supply or insufficient supply, house drains directly connected, waste pipes directly connected, waste pipes untrapped or badly arranged, soil-pipes not ventilated or ill-ventilated, rain-pipes directly connected, defective rain-conductors or roofs, defective traps, offensive accumulations, defective ashpits, privies and W.C's, defective cisterns, offensive ponds, yards lodging foul water, damp walls, dirty or overcrowded houses, animals so kept as to be a nuisance, &c. There was only one smoke nuisance. Among the good work accomplished was the conversion of 76 privies into water-closets. The number of letters written, referring to nuisances and other matters, was 706.

**Complaint of Nuisances.**—There were 578 special complaints received. In 458 of these cases, notices were served. In 93 cases what was complained of did not warrant the serving of notices. In other cases the nuisances were due to tenants' neglect, and they were required to abate the nuisances.

Three prosecutions were undertaken in respect of nuisances. The first proceedings were against a man for keeping pigs within 60 feet of a dwelling-house, in contravention of the bye-laws. The defendant was ordered to remove the pigs within seven days and pay costs, which he did. The second proceedings were against a house-agent for failing to strip and clean the walls and ceilings of a house in compliance with the terms of a notice served on him. The defendant was fined 40/- and costs, and ordered to do the work required. The work was forthwith done. The third proceedings were against a woman for failing to abate a nuisance caused by a choked and defective house-drain. The defendant was fined 10/6 and costs and ordered to abate the nuisance. The necessary work was done.

**Courts and back passages.**—Attention is drawn to the condition of the courts and back passages throughout the district. Under the Wallasey Local Board Act, 1890, the Authority may give notice to each occupier whose house adjoins a court or back passage to sweep and cleanse the same within twenty-four hours, and in default do the work and recover the expense incurred. This procedure takes up much time and it is neither speedy nor efficient in operation. It is therefore proposed that the town scavengers should be directed to sweep clean all passages and courts complained of or found by the Inspector to be in a dirty and insanitary condition. By slightly increasing the number of scavengers employed and re-arranging their districts, this work could be easily done. It goes without saying that the work would be much better done by the Authority's scavengers than by ordinary householders. Indeed the Inspector knows of no instance where the occupiers adjoining a back passage do keep it swept and clean. On some of these passages offensive matter is allowed to accumulate, till they present more the appearance of elongated ashpits, than back ways to dwelling-houses.

Of course it is of first importance that the good work of flagging and channelling all courts and passages should be completed.

The sanitary accommodation at many of the licensed premises in the district has been investigated, and as a result improvements have been effected at seven houses.

The sanitary accommodation at many of the public elementary Day Schools has also been inquired into and considerable improvements have been effected at St. Paul's Schools, Seacombe, St. John's Schools, Liscard, and St. James's Schools, New Brighton.



**Insanitary Property.**—Many special examinations were made by the Inspector, and he submits abstracts of his reports thereon under the above heading. These properties include a large number of back-to-back houses known as Brewer's Buildings, Liscard, Mason's Cottages, Sandy Lane, Wallasey, and the Barracks, Withen's Lane, Liscard.

A large and offensive pond that has existed for many years on the waste land at the south-west end of Wheatland Lane, Seacombe, has been filled up and the offensive water drained off.

**Disinfection.**—Infected houses or rooms have been disinfected thoroughly with sulphur fumes, and the steam disinfector is in constant use for the disinfection of bedding and clothing. A van is employed for removing infected articles and another for returning the articles after disinfection. In all 4353 articles of clothing, &c., and 670 beds and mattresses were dealt with.

**Prosecution for failing to notify.**—A man was summoned for failing to notify a case of scarlatina in accordance with the requirements of section 3 of the Infectious Disease (Notification) Act, 1889. The defendant's son was discovered in the public street during the period of desquamation, and though the defendant pleaded ignorance of the requirements of the Act and the infectious nature of the disease, he was fined 5/-.

**Prosecution for transmitting Infectious things.**—A man was summoned for committing an offence under the 126 section of the Public Health Act, 1875. The defendant had transmitted, without previous disinfection, bedding, clothing, &c., which had been exposed to infection from scarlatina. The disease had been notified by the medical attendant and the Inspector had visited the house. The defendant, who pleaded that he had not been informed of the nature of the disease, was fined 10/- and costs.

**Slaughter-houses.**—The private slaughter-houses within the district have been inspected at frequent intervals. The lime-washing and cleansing of the premises have been carried out in accordance with the Authority's bye-laws.

The lairages and slaughter-houses at the Wallasey and Alfred Docks have been visited on all occasions when slaughtering was going on, and the Foreign Animals Wharf has been visited during the landing of cattle. This work is undertaken by Mr. C. Scott, the Assistant Inspector.

**Unsound Meat, &c.**—During the year, 11,472 lbs. of meat (beef and mutton) and 6,947 lbs. of offal have been seized and destroyed as unfit for human food. The greater part of this was at the slaughter-houses in connection with the Foreign Animals Wharf. A small proportion was from shops situated

in the district. No proceedings were taken, other than applications to magistrates for orders to destroy the meat and offal seized. The stuff is destroyed at the manure works, Old Potteries, Seacombe.

On two occasions the carcase of a bullock was washed up on the Liscard shore. These were secured by the Inspector and destroyed at the Old Potteries. He considers this a much better way of dealing with such flotsam than the old way of burying it.

**Dairies, Cow-sheds and Milk-shops.**—There are in the District 26 cow-keepers and 41 purveyors of milk, duly registered. This shows that there is one more cow-keeper and that there are 11 more purveyors of milk than were on the register at the end of 1893. In all cases where persons have applied to be registered, strict examination of premises proposed to be used has been made. Some applications have been refused owing to the premises being unsuitable.

**Prosecution of a Cow-keeper.**—A woman was proceeded against for allowing a greater number of cows to occupy a shippon than would allow of the provision of 800 cubic feet of air-space for each cow, in contravention of the Authority's regulations made under the Dairies, Cow-sheds and Milk-shops Order. Seven cows were allowed to occupy a shippon registered for two only. The woman was fined £5 and costs.

**Offensive Trades.**—In June an offensive trade (tripe dressing) was established in a small shed at the north-east corner of Wheatland Lane. The occupier was cautioned, and before any proceedings against him were taken, left the premises.

The offensive trade (fat melting and manure making) carried on at the old Potteries, has been under constant supervision. The premises are kept in a reasonable state of cleanliness considering the nature of the trade. Towards the end of the year a special complaint of an effluvium nuisance was received, and was found to be due to over-heating the kiln flues in drying animal matter. A nuisance created in treating refuse fish with acid, was abated by first mixing the fish with cotton-shoddy.

The Phospho Guano Works Company are erecting a new main chimney stack. As the insufficient height of the old chimney has been the cause of repeated complaints, it is hoped that the nuisance from fumes will be thus abated.

**Canal Boats.**—On November 30th H. M. Chief Inspector of Canal Boats visited Wallasey and examined the canal-boat journals, registers and note books. He expressed himself satisfied with the work done. During the year 51 boats were inspected. The condition of five boats was found to be in contravention of the Canal Boats Acts and regulations. In 3

cases the master failed to produce the certificate of registration, in 2 cases the boats were not properly lettered, marked and numbered, the cabin of one boat was found in a dirty condition, and one boat was without a suitable cask for drinking water. Notices were served on owners regarding infringement of the Acts and regulations, and eventually the owners did what was required. Generally speaking the boats were kept in a clean and tidy condition. some especially so.

**Caravans.**—During the year several caravans, used as dwellings, have been inspected, as to their condition and cleanliness. Enquiries have also been made as to the health of the inmates and the disposal of their refuse.

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## WILMSLOW.

### Urban Sanitary District.

Medical Officer of Health—DR. T. A. SOMERVILLE.

Population at Census, 1891—6344.

Estimated population in middle of 1894—6344.

Area in acres—5103.

Birth-rate per 1000 living—29·9.

Death-rate per 1000 living—13·8.

Death-rate from seven principal Zymotic diseases—0·3.

Deaths under one year to 1000 births—105

This Urban District is formed of part of Fulshaw, part of Bollin Fee, and Part of Pownall Fee. The area and population of these three portions of the district appear to be as follows:—

|                            | Area in Acres. | Population at Census. |
|----------------------------|----------------|-----------------------|
| Part of Fulshaw ... ..     | 3088           | 1230                  |
| Part of Bollin Fee ... ..  | 2015           | 2860                  |
| Part of Pownall Fee ... .. | 2015           | 2254                  |

During 1894 the number of births registered in the district was 190, and the number of deaths registered in the district (excluding one death not belonging thereto) was 88. The death-rate (a decidedly low one) is just below that recorded in 1893. Seven inquests were held in 1894—two more than in 1893. Of the children born in 1894 10 were illegitimate.

One death was ascribed to puerperal fever and 1 to diarrhoea. There were also 5 deaths from phthisis, 19 from bronchitis or pneumonia, 8 from heart disease, and 7 from injuries.

**Infectious Diseases.**—Under the Infectious Disease Notification Act there were reported 9 cases of scarlatina and 2 cases of erysipelas. Thus the whole number of notifications was only 11. In 1893 the number notified was 23, and in 1892 it was 147. The 9 cases of scarlatina in 1894 were sporadic, and

occurred in different parts of the district. Precautions were taken in each case, and the disease did not spread.

**Water-supply.**—Samples have been taken from all the wells in use in Dean Row, and these have been submitted for analysis. The owners of the wells, the water from which proved unsatisfactory, have been noticed to get them cleansed. Meanwhile they have been warned not to use the water. Fresh samples will be submitted for analysis when the required cleansing has been done.

**Bakehouses and Lodging-houses** have been inspected during the year and found in a satisfactory state.

The Medical Officer of Health trusts the time will come when a public slaughter-house will be erected outside the village.

**Drainage Schemes.**—The Southern Drainage Scheme continues to work well. The drain in South Oak Lane is finished. Progress is being made with the drains in Chapel Lane and Oak Lane. Every arrangement has been made to commence the Northern Drainage Scheme at once.

**Hospital Accommodation Required.**—As yet there is no hospital for infectious cases, but the best way to remedy this defect is being discussed.

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## WINSFORD.

### Urban Sanitary District.

Medical Officer of Health—DR. J. M. Fox.

Population at Census, 1891—10440.

Estimated population in middle of 1894—10600.

Area in acres—5780.

Birth-rate per 1000 living—35·1.

Death-rate per 1000 living—14·2.

Death-rate from seven principal Zymotic diseases—1·8.

Deaths under one year to 1000 births—117.

This Urban District consists of the parishes of Over and Wharton. The area and population at the date of the Census are given as follows :—

|                                 | Area in<br>Acres. | Population<br>at Census. |
|---------------------------------|-------------------|--------------------------|
| Over ... ..                     | 4527              | 6835                     |
| Wharton (including Gravel Lane) | 1253              | 3605                     |

In 1894 the number of births registered was 373, and the number of deaths registered was 151. The birth-rate is just above the mean birth-rate of the district, and the death-rate is 3·1 below the mean death-rate of the district.

The number of deaths from the seven principal zymotic diseases was 19, viz: 1 scarlatina, 1 typhoid fever, 3 measles, 12 whooping-cough and 2 diarrhœa.

The number of cases of disease notified was 31, viz: 11 scarlatina, 3 typhoid fever, 2 puerperal fever, 7 erysipelas and 8 chicken-pox.

The district has been systematically inspected throughout the year. Common lodging-houses, slaughter-houses, canal boats and new buildings have been inspected.

The sanitary state of the district is exceedingly good. The work of removal and disposal of excremental refuse has been carried on satisfactorily.

The Medical Officer of Health is "not quite sure that the water-supply can be spoken of in the same applauding terms."

With reference to the very small wooden hospital erected in 1893, the Medical Officer of Health writes "there is no doubt there has been a benefit to the town in the provision of an isolation hospital."

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## YEARDSLEY-CUM-WHALEY.

### Urban Sanitary District.

Medical Officer of Health—DR. H. ALLAN.

Population at Census, 1891—1235.

Estimated population in middle of 1894—1235.

Area in acres—1323.

Birth-rate per 1000 living—30·7.

Death-rate per 1000 living—7·2.

Death-rate from seven principal Zymotic diseases—0.

Deaths under one year to 1000 births—52.

In this Urban District, which includes Bridge Mont and Stoneheads, the births registered numbered 38, and the deaths registered numbered 9. The death-rate was remarkably low. There were 2 deaths of infants under one year of age, and there were 3 deaths of persons 65 years and upwards. Of the 9 deaths, 3 were due to pneumonia, 2 to heart disease, 2 to paralysis, one death was due to bronchitis, and one occurred in childbirth.

**Scarlatina and Diphtheria.**—During the latter part of the year 3 cases of scarlatina came to the knowledge of the Medical Officer of Health. They occurred in different parts of the district, and were isolated as far as practicable. The disease did not spread. Two cases of diphtheria also occurred, and were investigated, but did not appear to have arisen from any insanitary cause. There was no spread of the disease.

**Measles.**—During November and December a mild type of this disease was prevalent at Furness Vale.

**Limiting the spread of Infection.**—On previous occasions the Medical Officer of Health has remarked on the Infectious Disease (Notification) Act not being in force in the district. All cases of infectious disease coming to his knowledge are at once visited and instructions given to prevent the spread of disease. Disinfectants are also freely used. There is, however, no provision made for isolating cases requiring isolation; and as such a case may at any time occur, it would be well, if possible, to make some arrangement with adjoining Authorities. If nothing better could be arranged it might be advisable to make an agreement with the Macclesfield Corporation to receive cases from this District into their Hospital.

**Nuisances.**—In 12 houses, situated in various parts of the district, sanitary defects were found to exist. In some cases the house drains, or sink waste-pipes, were out of order, in others gully-traps, rain-gutters, &c., were required. In 13 instances nuisances arising from closets and ashpits defective or overflowing were attended to.

**The Chief Requirements** in the District are a proper sewerage system and a good and wholesome supply of water. It is scarcely possible that very much can be done to provide these except by combining with adjoining Authorities.

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## ALTRINCHAM.

Rural Sanitary District.

NOW

## BUCKLOW

Rural District.

Medical Officer of Health—DR. J. M. FOX.

Population at Census, 1891—29245.

Estimated population in middle of 1894—31300.

Area in acres—62307.

Birth-rate per 1000 living—22·9.

Death-rate per 1000 living—13·9.

Death-rate from seven principal Zymotic diseases—0·8.

Deaths under one year to 1000 births—119.

In 1894, the number of births registered in this district was 717, and the number of deaths registered in this district was 438. The birth-rate and death-rate are below the corresponding mean rates of the district. Of the deaths 86 (19·6 per cent.) were of infants under one year old, and 151 (34·4 per cent.) were of persons 65 years old and upwards.

For registration purposes, the whole district has been divided into four sub-districts. These are as follows:—

1. Altrincham, having an area of 14765 acres, and an estimated population of 14125. It includes Ashton-

on-Mersey, Baguley, Timperley, Hale, Ashley and Dunham Massey.

2. Lymm, having an area of 14497 acres, and an estimated population of 3702. It includes Carrington, Partington, Bollington, Warburton, High Leigh, Agden, Mollington and Aston by Budworth.
3. Knutsford, having an area of 22570 acres, and an estimated population of 8604. It includes Tabley (Superior and Inferior), Mere, Rostherne, Tatton, Marthall, Peover (Superior and Inferior), Ollerton, Toft, Over Knutsford, Nether Knutsford, Bexton, Plumley and Pickmere.
4. Wilmslow, having an area of 10475 acres, and an estimated population of 4869. It includes Styal, Mobberley, Northenden and Northern Etchells.

The birth-rates of these 4 sub-districts were respectively 23·0, 19·9, 24·1, and 22·3. The death-rates of these 4 sub-districts were respectively 12·8, 10·5, 18·2, and 12·5.

The number of deaths from zymotic diseases in the whole Rural District was 28, viz. : 4 scarlatina, 5 diphtheria, 1 typhoid fever, 1 puerperal fever, 3 erysipelas, 1 measles, 8 whooping-cough and 5 diarrhœa. The zymotic death-rate is very low.

**Notification of Infectious Disease.**—The number of notifications received was 182, viz. : 1 small-pox, 116 scarlatina, 36 diphtheria, 4 membranous croup, 7 typhoid fever, 2 puerperal fever and 16 erysipelas.

**Small-pox.**—The only case of this disease notified, occurred in July in a sumptuous mansion in the township of Baguley. The patient was a medical student, and no doubt had contracted the disease in the pursuit of his profession. He made a good recovery.

**Scarlatina** was present all the year, but only 3·4 per cent. of the cases proved fatal. The first death ascribed to this disease was in January at Rostherne. The other 3 deaths occurred at Marthall, Peover, and Pickmere. Thus all the deaths were in the sub-district of Knutsford. Owing to the prevalence of scarlatina at Partington and Carrington in June the schools were voluntarily closed with very good effect.

**Diphtheria** appeared from time to time throughout the year in many parts of the district. Of the cases notified 13·8 per cent. proved fatal. Two of the fatal cases occurred at Northenden, 2 at Timperley, and the remaining case at Hale. The first fatal case was in January, at Church Street, Northenden, the patient being a very young child. The second case at Northenden occurred in May. It was thought to be due to a very faulty drain at the Mission Hall, and this drain was immediately put in order. A fatal case occurred in the autumn in Brook Lane, Timperley, where insanitary conditions abounded.

The defects reported were remedied. In October, 3 cases of diphtheria occurred in a house at Bollington. Doubtful water-supply and defective drainage were observed in connection with these cases. In November also there were 2 cases at Quarry Bank, Timperley. The drains and closets of the premises were faulty enough to account for the kind of blood-poisoning to which those who use them might be susceptible. The defective drains and closets were entirely reconstructed, and are now satisfactory. In December there were a few cases of modified diphtheria. In Victoria Road, Hale, was a fatal case. On the premises where this death took place and adjoining premises the yards (already too small) are blocked up with illegal erections, animals are improperly kept, and the closets and main sewer are badly ventilated. These matters must receive the early attention of the Council.

There was no tendency to spread in the cases of diphtheria. Many were in healthy farm-houses. Diphtheria is still shrouded in mystery, the wind being more frequently than is the case in any other similar disease, a means of conveying the germs from one place to another. The disease has become subject to great modifications. In the "fifties" it killed almost all it touched, always became epidemic, and people regarded it with terror. It is significant that the diphtheria in the Altrincham Rural District in 1894 never spread, was only fatal in the proportion of about 13 per cent., and more frequently than otherwise was not found to be associated with insanitary conditions.

**Typhoid Fever.**—The first case of this disease was notified in February from Ashton-on-Mersey. The patient was a child two years old and there was some doubt whether the disease was really typhoid fever. In April notification was received of a case at Knutsford, and in June were notifications of 3 cases at Partington. The 3 cases were occasioned by the horrible smells in connection with the Ship Canal. Two months later there was a case reported from Carrington Moss. Here the patient was carefully looked after by the Manchester Corporation. The next case of typhoid fever was notified in October from Northenden, the disease having been contracted in Withington. The last case of typhoid fever, the only one which proved fatal, occurred at Knutsford, and was imported from the South of England.

**Nuisance from Ship Canal dredgings.**—As just stated cases of typhoid fever have been distinctly traced to the deposit of filthy dredgings from the Manchester Ship Canal, in the township of Partington. The Medical Officer of Health cordially admits that the Company have done much to abate the nuisance by the free use of lime and other disinfectants. But why, he asks, should not the dredgings be taken out to sea in one of the Company's own boats? In distant times or near, if the site



of these deposits should become building sites for dwelling-houses, evil consequences will be sure to arise.

**Isolation Hospital needed.**—In spite of the energetic efforts of the Chairman of the late Board very little progress has been made toward the establishment of a hospital for cases of small-pox. Does the District Council, asks the Medical Officer of Health, wish that the County Council should step in and attend to this matter? If not, they are bound to act with promptitude.

**Water-supply of Knutsford.**—This, writes the Medical Officer of Health, “has been proved to be dangerously precarious. Water is the first necessary of life, and should be quite pure and aerated. When sewage matters are poured into streams, the waters carry the ova of parasites and the germs of zymotic diseases. The storage and filtration of such waters get rid of certain impurities, but not of all. But in a public water-supply there should be no risk. I am of opinion that this water should be condemned, and a fresh source of supply diligently looked for. Of course, the Water Company have a perfect right to act on the defensive; and I have no doubt that, at times, they might succeed in obtaining a satisfactory analysis. But they have these damaging facts against them: (1) Known liability to contamination. (2) Overwhelming adverse testimony of inhabitants. (3) Varying character of analyses from time to time, and, therefore, unreliability at some particular times. Should it be decided that the present source of supply is to be continued, the Company are bound to adopt the Porter-Clark filtering process, which no doubt carries to the bottom, with the chalk, all organic matter.”

**A Cemetery needed at Knutsford.**—The accommodation for burying at Knutsford is a question which must at once engage the attention of the responsible Authority, whichever that may be. It has been known for years that fresh interments can hardly be made in either of the churchyards, without the disturbance of human remains: yet this profanation is allowed to continue. Much difficulty has been met with in endeavouring to secure a suitable site for a cemetery. A generous offer made some time since is now no longer available. More difficulties will be found from year to year in procuring adequate sites of land for the inhumation of communities.

**Cremation.**—On the subject of the cremation of human remains the Medical Officer of Health writes as follows:—

“There is no doubt that the tendency of science and common sense is moving surely in the direction of cremation. If it be considered that forty million deaths occur in the world every year, of which 500,000 are in England and Wales, it will be obvious how much corruption is thus added to the earth. Amongst these deaths must be included all those from Asiatic

cholera in India and elsewhere, and all other infectious diseases, with their specific germs possibly in a full state of activity. Buried in the soil, many of these might escape destruction, but in the flames all must perish, and corruption of the body would never be known. The scandals of our present burial system would cease. But there is no reason why a well-devised inhumation should not go on side by side with cremation. Habits change slowly, and if trials are made experience will decide. Sentimental objections should not predominate. Surely the contemplation of the dissolution of the departed should overwhelm every other feeling. Some would prefer a house of rest in the earth, others a home in the sky. But it seems hardly conceivable that persons of refined tastes should prefer the prolonged operation of worms, mould, putrefaction, and liability to profanation, to the more cleanly system of instant purification and settlement by fire."

**Undrained Areas of Land.**—The state of Hale Moss and Knutsford Moss, continues to be a source of dissatisfaction. These, like all undrained places, throw off gases which are called miasmatic. When such areas were more extensive, ague was a prevalent disease in this country. It is true that a death from ague has not been recorded in either of these districts during seventeen years. But the effect of the emanations from the land may stop short of ague, while still being generally devitalising in its tendency, and the source of other evils. The Medical Officer of Health is thus justified in calling upon the District Council to deal remedially with these places.

**Systematic Inspection** has been carried on with zeal and regularity. During the year 403 inspections have been made of various kinds of nuisances, and 254 complaints of nuisances have been investigated by the Inspector.

**Scavenging Contracts** have been renewed as usual in the townships of Hale, Ashton-on-Mersey, Dunham and Knutsford. The middens, ashpits, &c. in these four townships are properly emptied for £560 a year.

The Inspector has succeeded, with very few exceptions, in keeping the contractors up to their work. Such short-comings as he has noticed have been signified to the Board. The populous portions of Northenden and Timperley should have scavenging areas arranged, and contracts invited without delay. Repeated complaints from both townships show the desirability of this being done.

**New Sewers and Sewage Schemes.**—The contract for a complete scheme of sewerage for Northenden was let in April 1894, to Mr. Wm. Barton for the sum of £2969, and work thereon has since been briskly proceeding. New sewers have been laid in Moss Lane, Timperley, and Hesketh Road, Ashton-on-Mersey, to cope with growing requirements. The reconstruc-

tion of tanks and sludge pits at Dark Lane Tanks, Carrington, has also been commenced.

Plans have been prepared for the entire reconstruction of sewage tanks at Knutsford. The new scheme provides for altering existing tanks and constructing a new one on the "continuous flow" system, and four new filters equalling 350 square yards in area. Three or four acres of low-lying moor will be prepared for irrigation purposes, in compliance with the regulations of the Local Government Board.

**Sewage outfalls.**—The five sewage outfalls under the Authority's care have been regularly inspected, and frequent analyses of effluents have been made by the Mersey and Irwell Joint Committee. These analyses have been tabulated and compared with the analyses of some 36 outfalls under the care of other Authorities. Frequently the Altrincham Rural District outfalls have been shown to be the most satisfactory.

**Overcrowding** has had the attention of the Inspector. No less than 257 cases have been reported, and the abatement of the overcrowding obtained.

**Dairies and Cow-sheds** throughout the district were systematically inspected.

**Slaughter-houses** were also carefully inspected. One license applied for, in respect of new premises, was refused.

**Common Lodging-houses** (all at Knutsford) received the Inspector's attention.

**Canal Boats.**—In this department there have been 93 inspections.

**New Buildings.**—Plans for the erection of 240 new buildings have been reported and approved by the Authority. These were mainly for houses in the townships of Ashton-on-Mersey, Timperley, Hale and Dunham.

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## ASHTON-UNDER-LYNE

Part of Rural Sanitary District in Cheshire,

NOW

## TINTWISTLE.

Rural District.

Medical Officer of Health—DR. W. E. S. BURNETT.

Population at Census, 1891—2576.

Estimated population in middle of 1894—2630.

Area in acres—13615.

Birth-rate per 1000 living—23·5.

Death-rate per 1000 living—13·3.

Death-rate from seven principal Zymotic diseases—1·9

Deaths under one year to 1000 births—209.

This Rural District contains part of the Township of Tintwistle, and the whole of the Townships of Hattersley and Matley. The area and population as enumerated at the Census are given as follow:—

|                    |        | Area in<br>Acres. |     | Population<br>at Census. |
|--------------------|--------|-------------------|-----|--------------------------|
| Part of Tintwistle | ...    | 11850             | ... | 2116                     |
| Hattersley         | ... .. | 1060              | ... | 286                      |
| Matley             | ... .. | 705               | ... | 174                      |

The area exclusive of moorland is returned as 4646 acres.

In 1894, the number of births registered was 62, and the number of deaths registered was 35.

Five deaths were due to zymotic diseases, viz. :—1 puerperal fever, 1 whooping-cough, and 3 diarrhœa. There were also 2 deaths due to phthisis, 6 to bronchitis or pneumonia, and 4 to heart disease.

**Notification of Infectious Disease.**—There were only 3 cases notified during the year. Of these two were cases of typhoid fever (one in Long Row and one in Church Street), and one was a case of puerperal fever in Manchester Road. All were in the Township of Tintwistle.

**Typhoid Fever.**—With respect to the first case of this disease attention had already been drawn to the insanitary condition of Long Row, but nothing had been done to remove the defects pointed out. In this Row the drains pass under the floors of some houses, while the closets are insufficient in number, badly constructed, and very filthy. Cases of typhoid fever are periodically cropping up in these cottages, and no doubt originate from germs contained in the excreta of former cases of the disease which have been thrown into the closets common to the property. The premises in Church Street, where the second case occurred, were also in a very insanitary condition, there being an abominable stench in the closets, and the sink waste-pipes delivering into cesspools under flags in the backyards. The closets should be properly ventilated, and the middens in connection with them should be roofed and ventilated.

**Whooping-cough** is not required to be notified and consequently the number of cases is not known, but several cases came to the knowledge of the Medical Officer of Health in September, one of which was fatal.

**Action taken to Prevent Spread of Infection.**—In all cases after notice of infectious disease has been received, the Medical Officer of Health and Inspector examine the condition of the premises, and if defects are found the owners are served with notices to remedy them. In the event of small-pox occurring (the disease has not been known in the district for 12 years or more) arrangements have been made for the cases to be removed to a hospital in Lancashire. In all other infectious cases the patients are isolated as far as possible at their homes. The

house and clothes are disinfected, and disinfectants are supplied gratuitously to all applicants. Healthy children residing in infected houses are prohibited from attending school, or playing with other children until all possibility of their infecting others is past.

**Water-supply and Milk.**—The water-supply has been abundant and good, throughout the year. There are no milk-shops in the district, the milk being supplied from farms outside.

**Inspection.**—Periodical inspections of the district have been made by the Medical Officer of Health and Inspector, and where insanitary conditions have been observed the owners have been required to remove them. Slaughter-houses have been duly inspected.

There are no common lodging-houses and there are no offensive trades carried on in the district.

**Nuisance Abatement.**—Fourteen formal notices for the abatement of nuisances have been served. Drains blocked have been cleansed, defective drains have been re-constructed and midden-privies have been improved, repaired or renewed. All the insanitary conditions reported have been dealt with and removed, except those existing at Long Row, to which attention is drawn in this and previous Reports.

The Inspector also obtained the abatement of many recurring nuisances without serving formal notices.

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## CHESTER.

### Rural Sanitary District.

Medical Officer of Health—DR. G. A. KENYON.

Population at Census, 1891—10080.

Estimated population in middle of 1894—9418.

Area in acres—35377.

Birth-rate per 1000 living—25·3.

Death-rate per 1000 living—14·2.

Death-rate from seven principal Zymotic diseases—1·3.

Deaths under one year to 1000 births—121.

This Rural District has for registration purposes been divided into two sub-districts, as follows:—

1. Chester Castle, having an area of 10960 acres, and an estimated population of 3671. It includes Christleton, Littleton, Great Boughton, Chester Castle, Marlston-with-Lache, Eccleston, Eaton, Poulton, Pulford, Dodleston, Lower Kinnerton and Claverton.
2. Chester Cathedral, having an area of 24417 acres, and an estimated population of 5747. It includes Blacon-with-Crabhall, Bache, Newton-by-Chester, Wervin,

Croughton, Moston, Upton, Lea, Little Mollington, Great Mollington, Backford, Chorlton-by-Backford, Caughall, Hoole (part of), Mickle Trafford, Bridge Trafford, Pickton, Thornton-le-Moors, Wimbolds Trafford, Dunham-on-the-Hill, Hapsford, Elton, Ince, Stanlow, Great Stanney, Little Stanney, Stoke, Capenhurst, Shotwick, Woodbank, Great Saughall, Little Saughall and Shotwick Park.

The population as above is exclusive of 695 enumerated at the Census in the County Lunatic Asylum, situated in the parish of Upton, and 49 enumerated in the Tarvin Union Workhouse, situated in Great Boughton. It is also exclusive of 1137 persons enumerated at Elton, Ince, Stanlow, and Great Stanney, who at the time of the Census were engaged on the Manchester Ship Canal.

In 1894 the births registered in the district numbered 239, and the deaths (including 17 deaths occurring outside the district but belonging thereto, and excluding 67 deaths in the County Lunatic Asylum and 2 in the Tarvin Union Workhouse) numbered 134. Both birth-rate and death-rate are low, and the proportion of deaths among infants is not large.

There were 2 deaths from scarlatina, 3 from diphtheria, 1 death from typhoid fever, 1 from puerperal fever, 1 from erysipelas, 2 deaths from whooping-cough, 4 from diarrhœa, 5 from phthisis, 29 from bronchitis or pneumonia, 14 from heart disease and 5 from injuries.

Under the Infectious Disease Notification Act there were reported 26 case of scarlatina, 14 cases of diphtheria, 7 cases of typhoid fever, 1 case of puerperal fever and 1 of erysipelas. Of these 13 cases of scarlatina, 1 case of diphtheria and 1 of typhoid fever were sent to the Fever Hospital at the Chester Infirmary. The Medical Officer of Health acknowledges the courteous manner in which medical practitioners in the district respond to the supplementary questions on the notification forms, and in every way do what they can to prevent the spread of infection.

**Scarlatina and Diphtheria.**—Cases of these diseases occurred at intervals throughout the year, and were scattered in different and distant parts of the district. Neither disease showed any great tendency to spread. Several of the cases were notified as both scarlatina and diphtheria. The houses where the cases occurred were visited, disinfectants were supplied and measures taken for the removal of insanitary conditions. Where the medical attendants advised removal to hospital, this was attended to. In one village the managers closed a school for a few weeks.

The Medical Officer of Health has visited the district frequently, and beside investigating cases of infectious disease has made general inspections with Mr. Owen, or otherwise.

The Inspector (Mr. Owen) continues to perform his duties with energy, and progress is being made in removing conditions injurious to health.

**Water-supply.**—Part of the district is supplied from the Chester Water Works, other parts have good well water, while elsewhere the water is unsuitable or deficient in quantity. At Great Saughall efforts have been made to introduce a supply, but hitherto the expense has proved an insuperable obstacle. Two houses were newly supplied with water.

During the year 4 samples of water were submitted to the Medical Officer of Health for analysis. Two were found to be of indifferent quality, the other two fairly good.

**Dairies &c.**—Forty-two dairies, milk shops &c. in the district are regularly inspected.

**Sewers, Ashpits &c.**—The sewerage and sanitary arrangements at the village of Ince have been completely overhauled and put in good order by the agent for the owner of the estate, under Mr. Owen's supervision. A great length of sewer had to be relaid, and all the house drains were provided with earthenware gully-traps. Two-hundred yards of sewer have been laid at Upton, also under Mr. Owen's supervision. The Newton sewer has been successfully relaid under the direction of Mr. Cecil Davis, notwithstanding the difficulty in obtaining access to the Railway Company's grounds. The sewage outfall at Eaton has been effectually dealt with by the proprietor. The sewage is subjected to a precipitation process and the effluent is passed over land. The danger of river pollution at Eccleston Ferry has been completely obviated by a mechanical means, the drains having been relaid to deliver into a water-tight cart, the contents of which are distributed over land. The arrangements for the disposal of sewage over land at the County Asylum have been inspected, and were found in admirable working order.

The greater part of the district being of a rural character there is little difficulty as regards emptying privies and ashpits. A neighbouring farmer is generally ready to undertake the work. In parts of Newton and Boughton Heath, being much built upon, different arrangements are beginning to be called for. Nuisances are frequently occasioned, by persons emptying the pits who have no convenience for using the refuse and simply deposit it on the first piece of vacant ground at hand.

**Inspector's Report.**—Mr. Owen, the Inspector of Nuisances makes a very complete report of work done during the year. Twenty complaints were received and 270 houses were specially inspected. Thirty houses were disinfected after infectious disease, 4 dirty houses were required to be cleansed and limewashed, in 13 houses the drains were repaired, in 60 houses the drains were required to be trapped or ventilated, 14

privies were repaired, 2 cisterns were cleansed, 4 accumulations of refuse were removed, and 1 nuisance from over crowding was abated.

**Building Bye-laws.**—The Model Bye-laws issued by the Local Government Board are in force in the district. Mr. Cecil Davis is Surveyor to examine plans and see that the requirements are properly carried out.

The Infectious Disease Prevention Act and the Public Health Acts Amendment Act, of 1890, are in force in the district.

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## CONGLETON.

### Rural Sanitary District.

Medical Officer of Health—DR. J. M. FOX.

Population at Census, 1891—12505.

Estimated population in middle of 1894—12888.

Area in acres—40155.

Birth-rate per 1000 living—32·6.

Death-rate per 1000 living—17·5.

Death-rate from seven principal Zymotic diseases—1·0.

Deaths under one year to 1000 births—106.

At the beginning of the second quarter of 1894, Alsager became a separate Urban District, and a Medical Officer of Health was appointed thereto. The area thus separated from the Congleton Rural District is 2241 acres in extent. The enumerated population of this area at the time of the Census was 1912. The births and deaths which took place in Alsager during the whole of 1894 are referred to Alsager and form no part of the records of the Congleton Rural District.

The number of births registered in this District in 1894 was 421, and the number of deaths was 226. The birth-rate and death-rate are above the corresponding mean rates of the District.

The whole District for registration purposes has been divided into 3 sub districts. These are as follows:—

1. Church Hulme, having an area of 14912 acres, and an estimated population of 3000. It includes Goostrey-cum-Barnshaw, Blackden, Twemlow, Cranage, Leese, Cotton, Church Hulme, Swettenham, Kermincham, Brereton-cum-Smethwick and Davenport.
2. Congleton, having an area of 7886 acres, and an estimated population of 1131. It includes Somerford, Somerford Booths, Hulme Walfield, Radnor, Newbold Astbury, and Moreton-cum-Alcumlow.
3. Sandbach, having an area of 17357 acres, and an estimated population of 8757. It includes Smallwood,



Odd Rode, Church Lawton, Hassall, Betchton, Wheelock, Arclid, Bradwall, Tetton, Moston, and Elton.

The birth-rates of these 3 sub-districts were respectively 43.0, 18.5, and 30.9. The death-rates of these 3 sub-districts were respectively 15.0, 12.3, and 19.0.

The number of deaths from zymotic diseases in the Rural District was 13, viz. :—3 diphtheria, 2 typhoid fever, 2 puerperal fever, 2 measles and 4 whooping-cough. The zymotic death-rate is low.

**Notification of Infectious Disease.**—The number of notifications received was 81, viz. :—50 scarlatina, 11 diphtheria, 4 typhoid fever, 4 continued fever, 2 puerperal fever and 10 erysipelas.

The Medical Officer of Health states that the adoption of the Infectious Disease Notification Act obliged him and the Inspector to alter their mode of procedure as regards inspection. Frequently after arranging for the systematic inspection of a certain Township, notification of an infectious disease in some other Township has come in and entirely altered the previous arrangements. There should have been an additional order of Inspectors under this Act. The work of systematic inspection, and the inspection under the Notification Act interfere with one another.

After notifications are received disinfectants and notices of precautions which should be taken are supplied in every instance. Under the direction of the Authority short hand-bills of instructions, general and special, as to infectious diseases, have been published, with a view to saving the time of the Inspector. Schools have been closed from time to time often voluntarily, and the Medical Officer of Health thinks with good results.

**Isolation Hospital.**—The district has got a capital hospital for the isolation of cases of small-pox, such as may be brought from time to time into this well vaccinated and protected community. The Medical Officer of Health believes this provision to be a necessary evil.

**Sanitary State of District.**—Under this heading the Medical Officer of Health writes as follows :—“The sanitary state of the District at the present time is so well ordered that the new Council need not be afraid or ashamed to take over the responsibilities of past years. There is one very great and lamentable evil, which I should with all earnestness, implore the new Council to assist me in dealing with. I allude to the utterly insanitary condition of portions of three townships, namely, Elworth, Elton, and Bradwall. In treating with this difficulty, I must say in the interests of the late Authority, that our greatest obstacle to action has arisen from a traditional unwillingness on the part of the Local Government Board to

create Special Drainage Districts. I can only aver that the sanitary evils here are immense. They cannot be exaggerated; and I lay it upon the Council, and the County Council, and the Local Government Board, that we should receive now every possible assistance in dealing with this great sanitary evil."

**Inspector's Report.**—The Inspector reports that during 1894 he has made 2500 visits in various parts of the district. The number of nuisances reported and abated was 142. Three cases of overcrowding were dealt with. The sewers have been kept in good order. One length of drainage at Holmes Chapel gave way, but was soon put right. Rode Heath and Thurlwood are both in very bad condition for the want of a proper system of sewerage, and this might be provided at small expense. The irrigation grounds are working well, and no complaints about them have been received. In districts where scavengers are employed, the removal of night-soil, &c., has been well looked after.

**The water-supply**, public wells, &c., are in charge of the Inspector. The springs were very low for some time during the summer and there was difficulty in getting a sufficient supply. When the supply is finished to Booth Lane, Malkin's Bank, and Wheelock Heath, it will relieve a large district that is at present very imperfectly supplied with usable water,

Seven samples of water were sent for analysis, and seven water certificates were given under the Public Health (Water) Act, 1878.

**Dairies and Cow-sheds** have been kept under observation, 95 systematic inspections having been made. No disease was found on the premises, and care was taken that they were regularly white-washed.

**Common Lodging-houses**, of which there are 9, have been duly inspected.

**Canal Boats.**—More than usual attention has been given to the canal boats. H.M. Chief Inspector of Canal Boats pointed out that there was a large traffic between Liverpool and the Potteries by means of these boats, and that infection might thus be brought into the district. In all 86 boats were inspected, but no case of infectious disease was discovered.

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## DRAYTON.

### Part of Rural Sanitary District in Cheshire.

Medical Officer of Health—DR. F. J. SANDFORD.

Population at Census, 1891—34.

Estimated population in middle of 1894—34.

Area in acres—581.

Birth-rate per 1000 living—29·3.

Death-rate per 1000 living—0.

Death-rate from seven principal Zymotic diseases—0.

Deaths under one year to 1000 births—0.

The large Rural District of Drayton, 65046 acres in area, and having a population of 14196 at the date of the Census, is situated almost entirely in Shropshire and Staffordshire. One small township only is in Cheshire. This township (Tittenley) has an area of 581 acres, and contains 6 dwelling-houses.

There was but one birth (a male) registered during the year, and there was no death. No nuisances were reported.

In this district the Infectious Disease Notification Act has been adopted, and during the autumn the Authority now require the notification of diarrhœa. No cases were notified in the Cheshire portion of this District.

## HAYFIELD.

Part of Rural Sanitary District in Cheshire.

NOW

## DISLEY.

Rural District.

Medical Officer of Health—DR. C. J. BENNET.

Population at Census, 1891—2260.

Estimated population in middle of 1894—2260.

Areas in acres—2464.

Birth-rate per 1000 living—29·2.

Death-rate per 1000 living—15·4.

Death-rate from seven principal Zymotic diseases—0·4.

Deaths under one year to 1000 births—121.

The entire township of Disley has an area of 2591 acres, and of this all but 127 acres are situated in Cheshire and form the new Rural District of Disley.

The number of births registered in 1894 in the district was 66. The number of deaths registered in 1894 in the district was 35. Eight of the deaths were of infants under one year old, and 13 were of persons 65 years old and upwards.

There were two deaths ascribed to zymotic diseases, viz: 1 croup and 1 measles. There were also 3 deaths from phthisis, 8 from bronchitis or pneumonia and 2 from heart disease.

**Infectious Disease Notified.**—There were 25 cases of infectious disease notified, viz.: 20 scarlatina, 1 diphtheria, 1 membranous croup, 1 typhoid fever, and 2 erysipelas.

**Scarlatina.**—The cases of this disease were of the mildest type. For the most part they were the result of repeated re-introduction of the infection from adjoining districts, and not to

infection spreading within the district. Every precaution was taken to prevent the spread of the disease.

**Croup, Diphtheria and Erysipelas.**—The case of croup (the only disease notified which proved fatal) in all probability originated from defective drains, which have since been remedied. The case of diphtheria and 2 cases of erysipelas were not owing to any insanitary conditions at the houses in which they occurred.

**Typhoid Fever.**—The house-drains where this case occurred were found to be defective, and this was reported to the Authority at the time, but the defects have not up to the present been remedied.

**Measles** was so prevalent among the children of Disley in December, that the Medical Officer of Health considered it desirable to close the schools there, and this was accordingly done.

**Water-supply.**—The water-supply which was provided for a portion of Furness some time ago has proved very insufficient during the last two years, and the inhabitants during the summer months had great difficulty in obtaining what was actually necessary from distant sources. There is abundance of water on the hills to the south, which could be brought to the houses requiring it without any very great expense.

**Pollution of the Canal.**—At Furness Vale the disposal of house sewage is not properly provided for, as at present the greater portion of it runs into the drains on the highway, and so into the canal, and the other portion finds its way into the river Goyt. It is most important to keep sewage out of the canal, as undoubtedly the canal water is used for washing boat-cabins and clothes, and probably also for drinking and the preparation of food. The Medical Officer of Health suggests that a scheme for sewerage Furness Vale should be carried out in conjunction with the adjoining Urban District of Whaley Bridge.

**Pollution of a Stream.**—Although a portion of Disley itself was drained within the last few years, through the drainage not being completed the locality is in a worse condition than previously. A proper system should be carried out, and an outlet provided. The only outlet at present for domestic drains, water-closets, and slaughter-houses is a small stream of water which runs through the village and enters the Goyt. This stream becomes very foul and offensive during dry summer weather, and is liable to affect the health of the inhabitants of houses adjoining it.

**A Sewage Nuisance.**—The sewage from Albert Terrace and other houses in the neighbourhood requires to be dealt with either chemically or by irrigation. The latter method, the Medical Officer of Health thinks, might prove satisfactory.

**Rubble Drains**, when found under houses (and they are not uncommon), should be removed, and glazed sanitary pipes substituted.

The removal of slaughter-houses, middens, and pig-styes from the vicinity of dwelling-houses is most essential.

The Medical Officer of Health trusts the matters referred to will receive the early attention of the new District Council. Unless pure water is amply supplied and an efficient system of sewerage provided the district cannot be maintained in sanitary condition.

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## MACCLESFIELD.

### Rural Sanitary District.

Medical Officer of Health—DR. J. L. RUSHTON.

Population at Census, 1891—17329.

Estimated population in middle of 1894—17544.

Area in acres—80384.

Birth-rate per 1000 living—26.2.

Death-rate per 1000 living—16.8.

Death-rate from seven principal Zymotic diseases—0.8.

Death under one year to 1000 births—88.

This district has for registration purposes been divided into six sub-districts, as follows :—

1. Alderley, having an area of 13692 acres and an estimated population of 3003. It includes Birtles, Capesthorpe, Lower Withington, Old Withington, Chelford, Snelson, Nether Alderley, Over Alderley, Great Warford, and part of Chorley.
2. Bollington, having an area of 7814 acres, and an estimated population of 2882. It includes Tytherington, Pott Shrigley, Lyme Handley, part of Hurdsfield, and part of Bollington.
3. Gawsworth, having an area of 17983 acres, and an estimated population of 2708. It includes Gawsworth, Bosley, North Rode, Marton, Siddington, Henbury with Pexhall, and Eaton.
4. Prestbury, having an area of 13667 acres, and an estimated population of 5033. It includes Prestbury, Poynton-with-Worth, Woodford, Newton, Adlington, Butley, Mottram St. Andrew, Fallibroome, and Upton.
5. Rainow, having an area of 14274 acres, and an estimated population of 2123. It includes, Taxall, Kettleshulme, Rainow, and Macclesfield Forest.
6. Sutton, having an area of 12954 acres, and an estimated population of 1803. It includes Wildboardclough, Wincle, and part of Sutton.

The birth-rates of these six sub-districts were respectively 26·3, 22·9, 26·2, 29·4, 29·6, and 18·8. The death-rates of these six sub-districts were respectively 17·0, 19·8, 16·2, 17·2, 16·4, and 11·1.

The number of births registered in the whole district was 461. The number of deaths registered in the whole district was 228, but to these deaths must be added 67 deaths of persons belonging to the Rural District, who died in the Union Work-house Infirmary or Lunatic Asylum in the Macclesfield Urban District. Forty-one of the 295 were infants under one year old, and 85 were persons 65 years old and upwards. The proportion of infants among those who died is small, and the proportion of old people is large.

The number of cases of infectious disease notified was 88. viz:—3 small-pox, 55 scarlatina, 6 diphtheria, 1 croup, 10 typhoid fever, 2 continued fever, and 11 erysipelas.

**Small-pox.**—The first case of this disease occurred at Kerridge and was notified on July 14th. The patient was a man, 24 years old, who had been visited on June 23rd by a friend from Newton Heath, Manchester. The visitor staid several days, sleeping with the man who afterwards became infected, and in the course of conversation told the family that small pox was very prevalent on both sides of the street where he lived and that cases were being taken away daily to the small-pox hospital. On July 17th a girl, aged 19 years, who had been living in the same house as the first patient and taken his visitor about in the neighbourhood, was attacked with small-pox at her aunt's in Rainow. She had gone to her aunt's on the 14th when the first case was pronounced small-pox. She was at once removed in a suitable conveyance to her home in Kerridge, to be nursed by her mother, whose house was already infected by the first case. On the same day the house at Rainow was disinfected by the Inspector. On August 3rd the aunt was seized with small-pox having been evidently infected from the second case. She was sent in a suitable carriage to the house where the other two cases were being treated, her brother's. He, however, refused to receive her, so the Inspector was obliged to bring her back to the house she had left, at Rainow, accompanied by her niece (who was by this time convalescent) to nurse her. All three were mild cases of the disease, the eruption being discrete. The dwellings were disinfected and some of the clothing was burnt. All persons in the neighbourhood willing to submit to the operation were vaccinated.

**Scarlatina** was prevalent during the first half of the year. Forty-four cases were notified before the middle of the year and only 11 afterwards. There were in all 3 deaths. In Alderley were 10 cases, in Bollington 22, in Gawsorth 4 (1 death), in Prestbury 8 (2 deaths), in Rainow 10, and in Sutton 1.

**Diphtheria.**—The first case of this disease, reported on February 1st, was at Poynton, Prestbury. The patient, a girl 6 years old, died. The source of infection could not be traced, but defective drainage was discovered on the premises. The second case, reported on April 19th, was at Chelford, Alderley. The patient, a man 45 years of age, recovered. This man became infected in Manchester. There were no sanitary defects on the premises. The third case, reported on May 21st, was in the Township of Sutton, the patient being a boy 6 years old. This case appeared to be due to a bad water-supply. There were also sanitary defects on the premises. The next case, reported on June 16th, was at Eaton, Gawsorth. The source of infection was traced to Congleton. The sanitary conditions of the premises where the patient (a boy 6 years old) lived were fair. The next case, reported on September 19th, was at Chorley, Alderley. The patient was a girl 8 years old. The source of infection could not be traced, but the sanitary conditions of the premises were bad. The last case, reported on September 29th, was at Lyme, Bollington. The patient, a boy 7 years old, died. The source of infection could not be traced. The condition of the premises where the patient lived was fairly good. Thus out of 6 cases 2 proved fatal, and in two instances the infection was imported into the District.

**Typhoid Fever.**—The 10 cases of this disease and the 2 cases notified as continued fever may be considered together. With the exception of a case on June 30th, at Adlington, Prestbury, and a case on August 17th, at Siddington, Gawsorth, all were in Kerridge or the adjoining Township of Bollington. Of this group of cases two were reported on April 18th, one on the 20th, two on the 23rd, one on the 29th, one on May 16th, one on June 13th, one on September 5th, and one on November 17th. The origin of the last two cases could not be traced, but the others appeared to be due to bad water. The supply "had become contaminated by flowing through a meadow over which the subsoil of a very old privy had been spread." This supply was closed, and another, conveniently near was adopted. The cases notified on April 20th and August 17th, terminated fatally.

**Erysipelas.**—The 11 cases of this disease notified were spread over the year. The first was reported on January 27th, and the last on December 27th. Seven occurred in the sub-district of Bollington, and one case in each of the sub-districts of Alderley, Prestbury, Rainow, and Sutton. On 6 of the premises where the disease appeared sanitary defects were discovered. All the patients who had erysipelas were upwards of 20 years old, and 8 were women.

**Measles and Whooping-cough.**—The number of cases of these diseases is not known, but 4 deaths were referred to measles and 2 to whooping-cough. All those who died were under five years old. Three of the deaths from measles took place in

the sub-district of Prestbury, 1 in the sub-district of Bollington. The 2 deaths from whooping-cough were in Alderley sub-district. Four schools were fumigated owing to measles having appeared among the scholars.

**Diarrhœa.**—The number of cases is not known, but only 2 deaths were recorded. One was in Bollington sub-district and one in Gawsorth sub-district.

**Sanitary Defects.**—After notification of cases of infectious disease the premises were visited and inspected. As a result, on 42 of the premises examined in this connection sanitary defects of one kind or another were discovered, and steps were forthwith taken to remedy the same.

**Analysis of Water.**—Particulars are given of 21 analyses of water by the County Analyst, and of 88 analyses by the Medical Officer of Health. Of the former, 2 were certified as "bad." Of the latter 21 were certified as "bad," and not fit for domestic use, and 14 as "very bad."

The Surveyor and Inspector (Mr. Thorpe) furnishes information as to matters coming under his supervision.

**Nuisance Abatement.**—Forty formal notices were served for the abatement of nuisances and for the provision of efficient water-supplies, but the abatement of a large number of nuisances was obtained without formal notice. There were 236 inlets to drains trapped, 11 waste-pipes disconnected, 11 defective W.C.'s were replaced by more efficient ones, and 63 new privies were built, and many others rearranged. In 102 houses entirely new drains were laid to replace inefficient ones. Fourteen houses, unhealthy through damp, were improved by removal of soil from walls, draining site, providing them with rain-gutters, spouts, &c.

**Houses Unfit for Habitation.**—A notice was served under the provisions of Part 2 of the Housing of the Working Classes Act, 1890, which had the effect of the house being made habitable. Three other houses unfit for habitation were vacated without the service of a notice. Two of these have since been re-built. The other remains untenanted.

**New Houses.**—Plans of 6 new houses were submitted and passed. During their erection they were visited frequently to see that the bye-laws were adhered to. Eleven certificates for 19 houses were granted under the Public Health (Water) Act, 1878.

**Effluent outfalls** from the Sewage Disposal works at Chorley and Fulshaw, which discharge into streams in the Rural District, have been visited at intervals throughout the year. The effluents on each occasion appeared to be satisfactory.

**Dairies, Cow-sheds, &c.**—Nineteen persons were registered under the Dairies, Cow-sheds, and Milk-shops Order



during the year. There are at present 343 persons registered. Most of the premises were visited and they were generally found well kept.

**Slaughter-houses** were visited regularly and were generally found clean and in good order.

**Canal Boats.**—Under the Canal Boats Acts, 36 boats were inspected during the year. The boats were registered for 107 adults, and carried 60 men, 17 women and 11 children. Nine of the children were of school age. Of these 3 were receiving efficient education, and 6 were not receiving any. Several irregularities with respect to the lettering and marking of the boats were met with, and corrected in each case on communicating with the owner. No case of infectious disease was met with. No legal proceedings were taken.

## NANTWICH.

### Rural Sanitary District.

Medical Officer of Health—DR. J. M. Fox.

Population at Census, 1891—22903.

Estimated population in middle of 1894—23285.

Area in acres—98458.

Birth-rate per 1000 living—28·2.

Death-rate per 1000 living—13·8.

Death-rate from seven principal Zymotic diseases—0·9.

Deaths under one year to 1000 births—91.

Four Townships (Tiverton, Tilstone Fearnall, Beeston, and Burwardsley) were taken from the Nantwich Rural Sanitary District and added to the Tarvin Rural Sanitary District on July 1st, 1892. Parts of three Townships (Coppenhall Church, Shavington-cum-Gresty, and Wistaston) were taken from the Nantwich Rural Sanitary District and added to the Borough of Crewe, by Local Government Order (duly confirmed) which came into operation on November 9th, 1892. The area and population of the Nantwich Rural District have therefore since the Census been reduced as follow:—

|                                       | Area<br>in Acres | Population<br>at Census |
|---------------------------------------|------------------|-------------------------|
| Nantwich R. S. D. in 1891 ... ..      | 104932           | 28326                   |
| Less portion added to Tarvin R. S. D. | 5617             | 1401                    |
| Less portion added to Boro' of Crewe  | 857              | 4022                    |
| Nantwich R. S. D. ... ..              | 98458            | 22903                   |

In 1894 the number of births registered in the district was 658, and the number of deaths registered in the district (including 15 which took place in the Workhouse in the Nantwich Urban District) was 322. The death-rate is low.

The whole district, for registration purposes, has been divided into 4 sub-districts. These are as follows:—

1. Crewe, having an area of 31145 acres, and an estimated population of 10830. It includes Warmingham, Haslington, Barthomley, Crewe, (taking in Crewe Green), Willaston, Weston, Basford, Rope, Stapeley, Walgherton, Wybunbury, Hough, Chorlton, Lea, Blakenhall, Checkley-cum-Wrinehill, Bridgemere, Hunsterson, Doddington, Hatherton, Batherton, and parts of Coppenhall Church, Shavington-cum-Gresty, and Wistaston.
2. Nantwich, having an area of 21300 acres, and an estimated population of 3592. It includes Coole Pilate, Austerson, Baddington, Edleston, Burland, Faddiley, Brindley, Acton, Henhull, Hurleston, Poole, Stoke, Cholmondestone, Aston-juxtra-Mondrum, Worleston, Alvaston, Woolstanwood, Leighton, and Minshull Vernon.
3. Bunbury, having an area of 15845 acres, and an estimated population of 3179. It includes Minshull Church, Wettenhall, Bunbury, Alpraham, Calveley, Wardle, Haughton, Spurstow, Ridley, and Peckforton.
4. Wrenbury, having an area of 30168 acres, and an estimated population of 5684. It includes Chorley, Wrenbury-cum-Frith, Woodcott, Broomhall, Didcott-cum-Wilkesley, Sound, Audlem, Buerton, Hankelow, Baddiley, Newhall, Cholmondeley, Egerton, Bicker-ton, and Bulkeley.

The birth-rates of these four sub-districts were respectively 26·9, 24·4, 31·7, and 31·1. The death-rates of these four sub-districts were respectively 13·9, 11·9, 15·4 and 13·9.

It is satisfactory to note that among the deaths recorded for the whole district, a large proportion were of old people, and only a small proportion were of infants under one year old.

The number of deaths from zymotic diseases in the whole district was 22, viz. : 4 scarlatina, 5 diphtheria, 3 typhoid fever, 1 continued fever, 1 puerperal fever, 1 erysipelas, 2 measles, 2 whooping-cough and 3 diarrhœa. Of these 17 were in the Crewe sub-district, 2 in the Nantwich sub-district, and 3 in the Wrenbury sub-district. The zymotic death rate is low.

**Notification of Infectious Disease.**—The Infectious Disease Notification Act is not adopted in this district, yet very much attention has been given to cases of infectious disease. Twenty-eight cases have been brought to the knowledge of the Authority, viz. : 12 scarlatina, 11 diphtheria and 5 typhoid fever. On compulsory notification the Medical Officer of Health writes—“As I have said before, I repeat now, as a fact that should be considered, that we are in the Nantwich Union as well off, in regard to intimation of infectious complaints, as in

my three other Union Districts in which the Compulsory Notification Act has been adopted."

**Scarlatina.**—In January, there were cases of this disease in Shavington and the schools were closed in consequence. Then there was one case in Spurstow—the patient recovered and there was no spread of disease. In March there were mild cases in Bunbury and Wrenbury, but there was no spread of infection from the families first attacked. In June the disease began to be prevalent in a mild form in Shavington, and from the impossibility of isolating the children the disease continued till the end of September. It was difficult to say who was and who was not affected. In one instance legal proceedings were taken for exposing a child with the disease. The charge was not pressed by the Authority, and the parents were let off with a caution and the payment of costs. Notices were posted up in this and other townships, warning persons of the penalties incurred through exposure of infected persons or things. In August cases appeared again in Bunbury, probably having been imported; and about the same time were cases at Willaston. Of the fatal cases 3 occurred at Shavington and one at Wybunbury.

**Diphtheria** occurred at Willaston, where there were 2 deaths, and at Church Coppenhall, Burland and Cholmondeley, in each of which a death occurred. In all, as already stated, there were 11 cases known to the Authority. With reference to this disease the Medical Officer of Health writes:—"I am glad to find that, in harmony with convictions that I have long expressed, the word diphtheria is now admitted to be a very misleading term. It expresses to my mind no terror; and I find that under the management of medical attendants and your officers the disease never spreads. Why, then, should we seek under ultra-scientific direction for any general inoculation from the *serum* of horses in order to prevent our populations from the ravages of this disease?"

**Typhoid Fever.**—There was a fatal case of this disease early in the year at Wybunbury, later there was a fatal case at Audlem, and in the autumn was a fatal case at Willaston.

**Isolation Hospital needed.**—The Medical Officer of Health greatly regrets that there is no hospital accommodation for cases of infectious disease. "In his mind there is not the slightest doubt that the Urban and Rural Councils of Nantwich should come together and work together in this matter. We have not suffered much hitherto; and it is not clear to your Medical Officer of Health that there is any evident urgent reason why matters should be hurried on in the way in which it is now proposed that they should be."

**The Sanitary State of the District.**—This is extremely satisfactory. Great improvements have been effected, especially in the matter of water-supply, but little has been done as to any

general system of sewerage in the larger villages, and in some instances this is much required. Improvements generally in the more rural parts have been carried out, but there is still plenty of work to do of the same kind at scattered houses in the country.

The Surveyor and Inspector (Mr. Davenport) furnishes information as to water-supply and matters coming under his supervision.

**Water-supply.**—One hundred and sixty houses have been supplied with water from the public mains during 1894. In all, nearly ten miles of mains have been laid in the year. Up to the present the Authority have supplied 2976 houses, and 103 miles of water-mains have been laid.

The quantity of water consumed during the past twelve months has been 28,000,000 gallons, which (allowing for the houses taken within the Borough of Crewe) gives an average of 7 gallons per head of the population supplied per day.

There have been 59 inspections of houses under the Public Health Water Act.

Plans, surveys, and estimates have been made for extensions of the water mains in Shavington, Burland, Bunbury, Minshull Vernon, and Edleston, and for the water-supply of Weston, Bulkeley, and Cholmondeley townships, all of which are before the Local Government Board, or have received their sanction. Plans, surveys, and estimates have also been made for the water-supply of Wettenhall township; and the water supplies of Calveley, Alraham, Bickerton, Baddiley, and other townships are under consideration.

Samples of water from pumps at twelve houses have been taken and sent for analysis; one proved good and eleven bad.

**Nuisance abatement.**—Statutory notices have been served in respect of 89 premises. New drainage has been laid at 42 houses. New privies and covered ashpits have been erected or old ones altered at 17 houses. Other permanent sanitary improvements have been made at 13 houses. Various nuisances, not included in the above, have been abated on 24 premises. In 47 cases the nuisances have either not as yet been abated or are in the course of being abated, or are waiting re-inspection. A number of nuisances have been abated by agreement, without service of notices.

**Scavenging.**—The District Council have scavenging contracts in respect of Haslington, Willaston, Shavington and Audlem; and during the year there were 2515 inspections of premises in connection with these contracts. The work has been generally well carried out. There are a number of houses at Barbridge that it would be very desirable to have scavenged. The tenants being chiefly boat-people, the men are frequently away, and the closets &c. often get into a very bad state. Efforts

have been made to get farmers in the neighbourhood to remove the contents of the closets &c. of these houses, but without success.

**Overcrowding.**—Only two or three cases have been noted during the year, and these nuisances were abated on complaint.

**Dairies and Cow-sheds** have been inspected as opportunity offered.

**Slaughter-houses** have been inspected but no notices with respect to them have been served during the year. The registered slaughter houses are in many ways open to improvement.

**Common Lodging-house.**—There has been only one common lodging-house in the district. The tenant of that has now removed to Crewe, and the house is empty.

**Canal Boats.**—Besides casual inspections of canal boats, there have been full inspections of 39 boats, the details of which appear in the Journal. The different breaches of the Acts have been dealt with in each case, and the usual Annual Report sent to the Local Government Board. No infectious disease was found in any of the boats inspected. The improvement in the condition of the canal boat population appears to be maintained.

**New Buildings.**—Fifty-nine plans for new buildings have been passed during the year, making a total of 1645 plans of new buildings passed in the District since urban powers for new buildings were conferred on the Authority. There have been several inspections of each new building.

## NORTHWICH.

### Rural Sanitary District.

Medical Officer of Health—DR. J. M. FOX.

Population at Census, 1891—21218.

Estimated population in middle of 1894—23042.

Area in acres—54774.

Birth-rate per 1000 living—33·1.

Death-rate per 1000 living—15·4.

Death-rate from seven principal Zymotic diseases—1·7.

Deaths under one year to 1000 births—136.

In 1894, the number of births registered in the district was 763, and the number of deaths registered in the district (including 13 which took place in the Workhouse in the Northwich Urban District) was 355.

The whole district for registration purposes has been divided into four sub-districts. These are as follows:—

1. Weaverham, having an area of 17630 acres, and an

estimated population of 8613. It includes Delamere, Eddisbury, Oakmere, Cuddington, Weaverham, Crowton, Acton, Little Leigh, Barnton, and part of Hartford.

2. Northwich, having an area of 10891 acres, and an estimated population of 8352. It includes Cogshall, Comberbach, Marbury, Marston, Wincham, Lostock Gralam, Peover Nether, Allostock, Anderton, part of Leftwich, and part of Winnington.
3. Over, having an area of 12472 acres, and an estimated population of 3083. It includes Marton, Darnhall, Little Budworth, Wimboldsley, Clive, Moulton, and Eaton.
4. Middlewich, having an area of 13781 acres, and an estimated population of 2994. It includes Davenham, Rudheath, Whatcroft, Bostock, Stanthorne, Sproston, Byley-cum-Yatehouse, Lach Dennis, part of Newton, and part of Kinderton-cum-Hulme.

The birth-rates of these four sub-districts were respectively 31.2, 38.3, 24.0 and 33.3. The death-rates of these four sub-districts were respectively 15.2, 17.2, 13.3 and 13.0.

The number of deaths from zymotic diseases in the whole district was 41, viz: 4 scarlatina, 1 diphtheria, 1 croup, 7 typhoid fever, 2 puerperal fever, 5 measles, 20 whooping-cough, and 1 diarrhœa. Of the deaths from zymotic diseases 14 were in Weaverham sub-district, 23 were in Northwich sub-district, 1 was in Over sub-district, and 3 were in Middlewich sub-district.

**Notification of Infectious Disease.**—The number of cases of infectious disease notified in 1894 was 192, viz.: 138 scarlatina, 9 diphtheria, 25 typhoid fever, 4 puerperal fever, and 16 erysipelas.

**Scarlatina**, notwithstanding the large number of cases reported, caused 4 deaths only. Thus only 2.9 per cent. of the cases proved fatal. Two of these deaths occurred at Wincham, 1 at Lostock Gralam, and 1 at Delamere.

**Typhoid Fever**, as just stated, was the cause of 7 deaths, 28 per cent of the known cases of the disease having proved fatal. Four of the deaths were at Marston, 1 was at Marbury, 1 at Wincham, and 1 at Stanthorne. On this typhoid fever outbreak the Medical Officer of Health writes as follows:—

“This is an important disease, with which the district has had little to do in former years. I can remember when twenty years ago, or thereabouts, there was a serious division of opinion amongst medical authorities as to the possible origin of typhoid. There were those who thought that this disease might arise out of any conditions of dirt or filth, independently of there having been previous cases, or a single previous case. These were the followers of Dr. Murchison. On the other hand, there were

those who thought that conditions of dirt or filth might exist, and no typhoid fever would arise, unless the germs of the disease were imported into it. These were the followers of Dr. Budd. I am disposed to think that for practical working purposes both may be assumed to be true, but with this qualification, that where the germs are present cases will spread with infinitely greater rapidity than where they are not. Thus in regard to the 25 cases of the year 1894, all, as to their acting cause, were connected with the mismanaged Scavenging Department. Here we had both dirt and the presence of germs. Two cases had been imported into Marston, and thus the collected excreta of the township became infected. It was in this way that almost every person engaged in any way with the management of the scavenging became affected with the disease. Cases spread from one person to another. The poisonous influence was maintained for a long period. It became a public calamity, and the public mind was very unfavourably impressed.

“In connection with this outbreak, attention was drawn to an insanitary property known as Red Lion Yard. This property has been now condemned. But the cases in this yard were only in persons who had some connection, near or remote, with the mismanaged scavenging.

“We have filthy places in many parts of the District, but no typhoid fever; and the Marston outbreak would indicate most clearly that the germs of the disease must previously exist before the fever can make its appearance. In addition, the scavenger was a milk seller; and yet the general customers were not affected, but only those who took the milk from the premises. It seems an undesirable connection, the occupation of a public scavenger and that of milk farmer. But an inquiry was made into other places where the two occupations are combined, but in such a way that it was thought that no danger need be apprehended. Everything, so far as I know, was done to limit the spread of the outbreak; and my distinct impression is that drunkenness had as much to do with it as any other circumstance.”

**Isolation Hospital.**—The Authority have an isolation hospital, which was built owing to the appearance of small-pox in the locality in 1893. The Medical Officer of Health states that a little difference of opinion arose between him and the Authority as to the purposes for which the hospital should be used. It was clearly designed for cases of small-pox, and yet during 1894 it was in use for 24 weeks for typhoid fever, six cases of this disease being treated therein. Nothing is more inconvenient than the suddenness with which small-pox may be sprung upon the district at any time, and yet the hospital, from its restricted accommodation, cannot be used for more than one disease at a time. The hospital and out buildings cost £225, and the site is rented for £12 a year.

**Sanitary State of District.**—This is generally satisfactory, and such faults as may be found have reference to causes over which a sanitary department has little control. Thus the rapid development of large industries involves the hasty erection of new houses, or the too frequent overcrowding of old ones. In 1894 plans for 154 new houses were submitted to the Authority, and it cannot be thought that such a number of houses could be occupied at once without risk, especially when it is considered that the bye-laws offer an insufficient safeguard against what is called jerry-building. A pollution of pure streams seems also to be the inevitable consequence of rapid development, especially of chemical industries, and this is very difficult to deal with. The farmer who suffers injury from this cause receives very long-delayed protection, and even when he gets it, it is always insufficient, as the bias of the law is in the interest of the industry rather than of the farmer. This is an important matter which is bound to occupy very much of the time of the Council. What great calamity might have happened if the larger townships, which have so rapidly extended themselves, had not been provided with a public supply of pure water, it is impossible to say, but very possible to imagine.

**Pollution of a River.**—The pollution of the river Dane from the Chemical Works, at Middlewich, is now engaging the attention of the Council.

The Surveyor and Inspector (Mr. Bennett), furnishes information as to the water-supply and matters coming under his supervision.

**Water-supply.**—The seventeen townships supplied with water have enjoyed an uninterrupted service all through the year, and there has been an unusual extension of mains into the Northwich Urban District, to supply the Union Workhouse with the Moulton water. Much has been done in the way of supplying farm-houses at Sproston, and much has yet to be done.

Plans of Waterworks for Oakmere and Delamere for obtaining water from the Liverpool mains, have been before the Local Government Board since June, and are still awaiting approval. Much dissatisfaction is expressed at the delay, as the water is most sorely needed.

**Nuisance abatement.**—Statutory notices have been served in respect of 371 houses, and 50 summonses have been ordered to enforce notices. There are no common lodging-houses, but most serious cases of overcrowding in the Lostock district. The sewage outfalls are maintained in successful operation, and nuisance prevented.

**Nuisance at Lostock Gralam.**—The Authority have had an extraordinary difficulty to deal with in relation to the purification of sewage at Lostock Gralam. An inquiry was



held by an Inspector from the Local Government Board, and a requirement was made that land should be obtained for the treatment of the sewage. As a matter of fact it was impossible to obtain land, and meanwhile the nuisance at Lostock Gralam was becoming appalling. Under these circumstances the Authority took the only course open to them. They resolved to pay for the works required, out of the rates, and carried out works for purifying the sewage by precipitation and filtration, in such a manner that if land be required the least quantity allowable will suffice.

**Scavenging.**—The number of houses in the district has increased to 4597, and of this number 1866 are scavenged by contractors employed by the Council. The refuse removed is disposed of on the farms of the contractors. The 2731 houses remaining are situated in the more rural parts of the district. The harmless disposal of refuse is difficult to provide for. Suitable tipping places are not always easily found. But it is an outrage when the malodorous stuff is placed too near houses or roads, and there have been frequent complaints of this being done during the year.

**Dairies, Cowsheds and Slaughter-houses** have been kept, more or less, under systematic inspection.

**Canal Boats.**—Fifty-three boats have been structurally examined during the year, and 24 of these have been repainted, or otherwise brought into conformity with the regulations. In one case a summons was taken out for overcrowding, and the defendant was fined 19s. 6d. As a rule, the cabins were found clean. No case of infectious disease occurred on board any boat.

**Vaccination Returns** are submitted, showing that out of 998 recently born infants in the Northwich Union, 898 (about 90 per cent.) were successfully vaccinated, 82 (a little over 8 per cent.) died unvaccinated, 13 were postponed by medical certificate, and 5 were removed out of the district to which the returns refer.

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## RUNCORN.

### Rural Sanitary District.

Medical Officer of Health—DR. J. ADAMS.

Population at Census, 1891—22467.

Estimated population in middle of 1894—23304.

Area in acres—45923.

Birth rate per 1000 living—28·3.

Death-rate per 1000 living—14·7.

Death-rate from seven principal Zymotic diseases—2·0.

Deaths under one year to 1000 births—119.

This district has for registration purposes been divided into three sub-districts. These are as follows:—

1. Budworth, having an area of 21,162 acres, and an estimated population of 8,654. It includes Great Budworth, Seven Oaks, Antrobus, Crowley, Higher Whitley, Lower Whitley, Bartington, Stretton, Appleton, Walton Inferior, Walton Superior, Acton Grange, Moore, Keckwick, Hatton, Daresbury, Newton-by-Daresbury, Preston on the Hill, and Dutton.
2. Runcorn, having an area of 9,034 acres, and an estimated population of 5,501. It includes Aston Grange, Aston-by-Sutton, Sutton, Stockham, Norton, Halton, Weston, and Clifton or Rocksavage.
3. Frodsham, having an area of 15,727 acres, and an estimated population of 9,149. It includes Frodsham Township, Frodsham Lordship, Helsby, Alvanley, Manley, Newton-by-Frodsham, Kingsley, Norley, and Kingswood.

The number of births registered in the whole district, in 1894, was 661. The number of deaths registered in the whole district, in 1894, was 344, after deducting 15 deaths in the Dutton Workhouse, of persons belonging to the Urban District. The birth rate is 1·8 below the mean birth-rate of the ten years 1884-93, and the death-rate is 2·8 below the mean death-rate of the ten years 1884-93.

The birth-rates of the three sub-districts were respectively 31·7, 24·5 and 27·4. The death-rates of the three sub-districts were respectively 16·2, 12·3 and 14·7. Nearly 23 per cent. of those who died were under one year old.

The number of deaths due to the seven principal zymotic diseases was 47, viz. :—6 scarlatina, 2 diphtheria, 8 measles, 15 whooping-cough, 7 typhoid fever and 9 diarrhœa. The death-rate from the principal zymotic diseases is not high. There were also 7 other deaths from zymotic diseases, viz. :—1 death from rheumatic fever and 6 deaths from influenza.

**Infectious Diseases Notified.**—There were 202 notifications of dangerous infectious disease in 1894. The number notified in 1893 was 325, and the number notified in 1892 was 123. Of the cases notified in 1894, 149 were scarlatina, 18 diphtheria, 18 typhoid fever and 17 erysipelas. A tabular summary of 63 outbreaks of infectious disease is given by the Medical Officer of Health in his Report, which shows the results of his investigations in respect of the most important of the cases notified.

**Small-pox** did not recur in 1894, but the Authority very wisely retained the temporary Isolation Hospital in full readiness to meet any recurrence. The disease was known to exist in the immediate neighbourhood, and 3 cases (in the district) of what

it was thought might be small-pox were brought to the notice of the Medical Officer of Health. These he immediately investigated and found to be only very bad cases of chicken-pox. Still as a precautionary measure all persons in the house where they occurred and in the next house were re-vaccinated.

**The Isolation Hospital** is still in full readiness should small-pox appear in the district, and might also be available in case of any occurrence of cholera, but it is not fit to be looked upon as a permanent provision for isolation. The building is totally inadequate for permanent requirements and the Authority's tenancy is subject to the arbitrary notice of the Manchester Ship Canal Company.

**Measles** — As this is not included in the schedule of notifiable diseases the extent of its prevalence can only be judged of through the death returns. In Frodsham Township there seems to have been a severe outbreak, for five deaths from measles were recorded there—representing a death-rate of 1·4 of the local population. Of the remaining 3 deaths 1 occurred in Frodsham Lordship, 1 in Sutton and 1 in Daresbury.

**Scarlatina** affected the district almost as severely in 1894 as in 1893, when 171 cases were reported. In 1894 the disease invaded 20 out of the 36 townships in the district, but the main incidence of the disease was concentrated on Kingsley (49 cases) and Weston (35 cases). The continued spread of the disease in Kingsley, in spite of every precaution, led to the closing of the schools, when the outbreak rapidly subsided. At Weston, it was decided, on the recommendation of the Medical Officer of Health, to withhold the order for closing the schools, as sources of infection appeared to be probable outside. The disease shortly afterwards abated. Of the 149 cases recorded 6 died, viz.: 3 at Kingsley, 1 at Weston, 1 at Norton and 1 at Alvanley.

It is pointed out that if hospital accommodation had been available for a few of the earlier cases the outbreaks at Kingsley and Weston might have been confined to very narrow limits. "The absence of any arrangements, sanctioned by the Authority, to utilise their steam disinfectors, led to the continued infective power of clothing, bedding, &c., being established long after the patients had fully recovered."

**Proposed New Hospital.**—In his Annual Report for 1893, the Medical Officer of Health stated that the Authority had definitely decided to erect a hospital, and were engaged in selecting a site. He now reports that several sites were selected and particulars of these forwarded to the Local Government Board for their approval, with the result that intimation has been received "that these sites will not be sanctioned." He therefore suggests "that the Local Government Board be approached with a request to instruct one of their permanent staff to visit your

district to inspect the rejected sites, to inspect and report upon any further sites which you may, by that time, be prepared to submit for approval, and lastly in the event of your failing to provide a site which shall be in accordance with the requirements of the Central Authority, to advise your Council, after a fuller acquaintance with the district, as to any site which he would recommend you to submit for approval to the Local Government Board."

**Diphtheria** has been somewhat less prevalent than of late. Cases were reported from eight townships, viz: 6 cases at Frodsham, 5 at Weston, 2 at Kingsley and 1 case at each of the following townships—Crowley, Halton, Sutton, Alvanley and Helsby. There was one death from diphtheria at Kingsley and one at Helsby. The outbreaks were usually associated with defective sanitation. Blocked sewers and drains, over-flowing privies and inefficient methods for the removal of sewage and privy refuse, are the conditions generally found accompanying typical cases of this disease. Some of the cases notified presented little more serious indications than soreness of the throat, unassociated with sanitary defects.

In the "Home for Waifs and Strays" at Kingsley, diphtheria and scarlatina appeared simultaneously, yet practically no extension occurred.

**Whooping-cough** is not notified and when deaths are registered as due to this disease no sanitary intervention is attempted. At Frodsham Lordship there were 3 deaths; at Kingsley 2 deaths, and one death at each of the following townships—Appleton, Moore, Stretton, Whitby Inferior, Aston, Clifton, Halton, Sutton, Helsby and Norley.

**Typhoid Fever** was certainly less prevalent than usual in 1894. Cases were reported from 11 townships, viz: 4 cases at Weston, 3 at Budworth, 2 at Appleton, 2 at Halton, and one case at each of the following townships—Moore, Stretton, Clifton, Frodsham, Frodsham Lordship, Helsby and Kingsley. One of the cases at Budworth and the cases at Halton, Moore, Clifton, Frodsham Lordship and Kingsley proved fatal. There is little to direct attention to in reference to the occurrence of this disease. The cases at Budworth (Great Budworth Heath) the Medical Officer of Health has no doubt arose from drinking water from a pump-well supplying some thatched cottages. A sample of the water was sent for analysis, but according to the results it appeared to be a good water and fit for domestic use. Perhaps the pollution was temporary. Another sample should be analysed at some convenient time. At Halton (Bate's Bridge) where two fatal cases occurred, the houses had no through ventilation, the roofs and rain-spouts were defective, there was a deep gully behind the houses which at times became filled with sewage from cowsheds and piggeries, and the sewage oozed through the basement into the houses. With considerable

difficulty, a marked improvement was at length effected, but these premises should be carefully watched by the Inspector, and any failure of the present drainage arrangement brought to notice. At Post Office Row, Weston Point, where two non-fatal cases occurred, the drainage appears to be defective and the sanitary arrangements of the back yard not satisfactory, yet owing to peculiarities in the form and environment of the premises it is difficult to suggest an effective re-construction of the drainage.

It is interesting to note the striking variation shown year by year in the proportion of deaths to cases of typhoid fever notified. In 1894 there were 7 deaths in 18 cases, in 1893 there were 7 deaths in 31 cases, in 1892 one death in 31 cases, in 1891 6 deaths in 27 cases and in 1890 11 deaths in 30 cases.

In 1894 no cases of typhus, continued or puerperal fever came to the knowledge of the Medical Officer of Health.

**Erysipelas.**—Seventeen cases were notified, but there were no deaths. There were 5 cases at Frodsham, 3 at Budworth, 2 at Halton, 1 at Appleton, 1 at Aston, 1 at Clifton, 1 at Sutton, 1 at Weston, 1 at Frodsham Lordship, and 1 at Helsby. No sanitary action was taken, but in no case was the disease communicated from one to another in the same house.

**Diarrhœa** was less prevalent in 1894 than in any year within the memory of the Medical Officer of Health. Of the 9 deaths 6 were of children under 5 years old. There were 2 deaths at Appleton, 2 at Dutton, 2 at Weston, 1 at Halton, 1 at Frodsham, and 1 at Norley.

**Influenza and Mumps** were also to some extent prevalent. Neither are notifiable, but the former was the assigned cause of death in 6 cases.

**Water-supply.**—The portions of Appleton known as Stockton Heath and Wilderspool have a good and plentiful supply from the Warrington Water Works, and the greater portion of the villages of Walton Superior and Moore are supplied from the same source. Halton, Weston Point and the village of Weston are supplied from the Runcorn Urban Authority's Water Works. The village of Norton is supplied from the Liverpool Water Works but the mains require to be extended. The remaining portion of the Rural District is of a very scattered nature and purely agricultural. It is dependent on running water, pumps and well, and in many instances an improved supply is greatly needed. However the Authority are debarred from obtaining many needed improvements on account of the great depth to which sinkings have to be carried to obtain good water, the estimated cost of this being much greater than the amount recoverable under the Public Health (Water) Act, 1878. Of late little has been done in discovering fresh sources of drinking water, yet the yield from two bore

holes sunk in Helsby, in 1894, might encourage water seekers to persevere.

There is still a distinct need for an improved water-supply at Alvanley, and it is to be regretted that the proposal to combine with Helsby to obtain a supply was not carried out. The supply of a portion of Bartington is still defective, but owing to the financial aspect of the question it is difficult to propose a remedy. At Clifton the improved supply continues satisfactory. At Dutton water is still needed. (Here, as was stated in the last Annual Report, a notice served on owners to provide an improved supply was cancelled by the Local Government Board owing to the cost being too great). The L. & N. W. R. Co. made a praiseworthy attempt to provide their cottage property at Tunnel-Top with drinking water, but after a considerable outlay in sinking they only found a water that cannot be employed for domestic purposes. If some scheme were devised and carried out for Dutton, these cottages could be supplied by it. The opinion of the Medical Officer of Health is that increased pumping power and storage accommodation at the Workhouse would yield a supply satisfactory to all whom it could reach. The scheme for supplying Frodsham with water, referred to in the last Annual Report, is now completed, and many houses are already connected. A further loan has been raised to take the water to outlying parts of the district, which is much to be desired. Frodsham Lordship, it may be remembered, decided not to participate in this scheme; but application has already been made by many influential residents in Frodsham Lordship for the mains to be extended, so far without effect. The old village pump at Overton has been replaced by a powerful pump which yields an amply supply. The supply to "the Common" at Halton remains unsatisfactory. It was stated in the last Annual Report that at Helsby the Parochial Committee had offered a premium for a satisfactory water scheme. There has been little done since; but, as showing the capacity of the district to furnish water, it is important to note that two deep borings have been made by private persons, yielding abundance of good water which overflows. If other property owners were to adopt similar means, the water-supply would soon be largely augmented. At Kingsley the needed improvements in supply are not yet made, but the Parish Council has the matter in hand. At Manley there is still need of better supply for the greater part of the township. At Norley the supply to Blackmere Lane continues to be unsatisfactory. The District Council have been given to understand that the Parish Council would take this matter up. One or two farms and some cottages at Norton are still in need of good water. The 135 feet bore hole at Preston-on-the Hill, referred to in the last Annual Report, has only yielded a very unsatisfactory water; but a scheme has been put forward for supplying water by gravitation to a point accessible to the cottages on the

Canal Bank, above the Tunnel End. At Sutton Village, where owing to the great depth of the well it is exceedingly difficult to raise the water, a committee has been formed to carry out the suggestions of the Medical Officer of Health made in his Report for 1893. At Weston, where the service is intermittent and there are many houses without a sufficient supply, notices have been served on the Runcorn Urban Authority who provide the water. The outcome of the notices has, to a slight extent, been beneficial, but there is yet room for great improvement as regards pressure. The mains should be enlarged and the supply made continuous.

**Sewers, Drains and Scavenging.**—The contemplated sewer extensions at Appleton have been carried out and further extensions made. Part of this township (Stockton Heath) is increasing rapidly. A contract has been executed for the removal of night-soil and refuse. Urban powers have been obtained. At Antrobus, the sanitary accommodation at the schools has been completely reconstructed on an improved system, and the schools have been enlarged. A nuisance of very long standing at Aston, arising from want of drainage, has been abated. The main sewer at Overton (Frodsham Lordship) has been considerably extended. At Halton the Parochial Committee have adopted bye-laws, which will shortly be enforced. There has been a further extension of the sewer at Moss Lane, Moore. The improved drainage of the Stretton Schools has been carried out very satisfactorily.

Those portions of the district which may be described as semi urban are provided with sewers more or less efficient. In some instances the sewage is discharged into tidal waters, in others it flows upon land. No attempt has hitherto been made at sewage purification, beyond the provision of a casual settling tank. In the outlying parts, where it would be practically impossible to have sewers, the sewage is discharged into cess-pools, and put upon the land.

The Authority do not undertake the collection and disposal of excrement and refuse in any part of their district, except at Stockton Heath. The emptying of middens, removal of refuse, &c., is done by the occupiers or owners, or both in conjunction. They have to dispose of it as best they can, and in many cases this is a matter of great difficulty. The abatement of any nuisance arising from this cause is obtained in the usual way.

The Inspector (Mr. Farrington) furnishes information as to matters coming under his supervision.

**Public Health (Water) Act, 1878.**—The number of certificates granted for the occupation of new houses, during 1894, was 26. The number of houses occupied under certificates was 94. The number of houses supplied from pumps and wells was 13. the number supplied from mains was 75,

the number supplied with rain-water stored in tanks was 2. Seven pumps were repaired and a new one was erected. Forty-eight notices were served to provide supplies. Twenty-six samples were taken and submitted for analysis. The Analyst's results and remarks are given.

**Nuisance Abatement.**—Forty nuisances were reported and 36 formal notices to abate these were served. Twelve sewers were improved and 8 extended, 6 connections of drains to main sewers were effected, and 7 ditch-sewers and outfalls were improved and cleansed. In 44 cases the drainage of back-yards was improved. Fifteen new privies were built and 13 old ones removed. In two cases legal proceedings were taken for the abatement of nuisances—in one case a conviction was obtained and in the other the charge was withdrawn.

**Canal Boats.**—Only eleven canal boats were inspected during the year. More would have been done in this respect but for pressure of other work. Ninety-two were inspected in 1893.

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## STOCKPORT.

Rural Sanitary District.

Brinnington Sub-District.

Medical Officer of Health—DR. H. G. SMEETH.

Population at Census, 1891—485.

Estimated population in middle of 1894—521.

Area in acres—645.

Birth-rate per 1000 living—3·8.

Death-rate per 1000 living—11·5.

Death-rate from seven principal Zymotic diseases—0.

Deaths under one year to 1000 births—1000.

The whole Township of Brinnington has an area of 778 acres, and the population at the Census was 7061. Out of this, 133 acres, the Census population of which was 6576, belong to the County Borough of Stockport.

In 1894, the number of births registered was 2, and the number of deaths registered (exclusive of 1 death occurring within the District, but not belonging thereto) was 6. Two of those who died were infants under one year old. Three deaths were due to advanced age— from 71 to 89 years.

Five cases of zymotic disease were notified. These were cases of scarlatina. In all probability they were imported into this District from the adjoining Borough of Stockport. There was no death from any zymotic disease.

**Regulations for Sale of Milk.**—In June, the Medical Officer of Health drew attention to the provisions of the Dairies,



Cow-sheds and Milk Shops Order, under which Authorities may make regulations in respect of dairies, cow-sheds and milk shops. He now calls the attention of the District Council to this Order, and suggests that regulations should be made. Milk from this District is supplied to Stockport, and the proper supervision and control of the milk trade is of great importance.

**Inspector's Report.**—The District has been in a satisfactory state during the year. It has been duly inspected by the Medical Officer of Health and Inspector. The latter notes that 8 nuisances were reported. Four notices requiring abatement of nuisance were served, and four nuisances were abated without formal notice. In 7 cases sink waste-pipes were disconnected and drains relaid, and in 1 case a pigsty was removed and an ashpit repaired.

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## STOCKPORT.

### Rural Sanitary District.

#### Handforth Sub-District.

Medical Officer of Health—DR. H. G. SMEETH.

Population at Census, 1891—794.

Estimated population in middle of 1894—805.

Area in acres—1311.

Birth-rate per 1000 living—22·3.

Death-rate per 1000 living—12 4.

Death-rate from seven principal Zymotic diseases—0.

Deaths under one year to 1000 births—166.

In 1894, the number of births registered was 18, and the number of deaths registered was 10. Out of these deaths 3 were of infants under one year old. The death-rate is very low, but the infant death-rate is rather high. In 1894, as in previous years, most of the deaths of infants were ascribed to convulsions and gastric troubles—causes of death which, in many cases, are preventable. If more care were given to the infants, and suitable food provided, many of these deaths would be avoided.

Four cases of zymotic disease were notified, viz. : 3 typhoid fever and 1 scarlatina. All these cases were investigated, and isolated as far as possible. All recovered. The origin of the case of scarlatina was not traced.

**Typhoid Fever.**—One of the 3 cases of this disease was traced to drinking polluted well-water. It was recommended that the well should be closed and the house connected with the town supply. Another case originated with the foul state of the drains in rear and in front of the house where it occurred. The drains in rear were put in good condition by the owner, and the

County Council were advised as to the affluvia from the grids in the main road.

Handforth has been in a very satisfactory state during the year. The ditch-drains have been cleaned out regularly and are in better condition. One complaint was made in writing about one of these drains, and the matter was promptly attended to.

**Regulations for Sale of Milk.**—In June the Medical Officer of Health drew attention to the provisions of the Dairies, Cow-sheds, and Milk Shops Order, and recommended the Authority (in accordance with the suggestions of the Medical Officer of Health for the County), to make regulations with reference to dairies, &c. The Medical Officer of Health regrets that this was not done. He now points out to the District Council the importance of registering all dairies, cow sheds and milk shops, and providing for the regular and systematic inspection of the same.

**State of Churchyard.**—Dr. Hoffman, Inspector under the Burial Board, held an inquiry into the condition of the churchyard on November 20th. After inspecting the ground, he said he considered it necessary to recommend the Secretary of State to advise the Privy Council to close it forthwith, but that a piece of ground could, if obtainable, be added to the churchyard, and used for burials after it had been approved by the Secretary of State.

**Inspector's Report.**—The district has been systematically inspected by the Medical Officer of Health and Inspector. The latter reports that during the year 21 nuisances were reported. Seven notices requiring abatement of nuisance were served, and 12 nuisances were abated without formal notice. In 17 cases house-drains were relaid or put in order, in 8 cases ditches were cleaned, 2 ashpits were repaired, and a manure-pit was removed.

Ten new houses were erected.

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## STOCKPORT.

Rural Sanitary District.

Hazel Grove Sub-District.

Medical Officer of Health—DR. T. MOORE.

Population at Census, 1891—7868.

Estimated population in middle of 1894—8073.

Area in acres—6072

Birth-rate per 1000 living—23·4.

Death-rate per 1000 living—16·0.

Death-rate from seven principal Zymotic diseases—0·7.

Deaths under one year to 1000 births—201.

This Sub-District comprises the Townships of Bosden, Norbury, Torkington, Offerton and part of the Township of Bramhall, together forming the drainage-area district of Hazel Grove, with the remaining portion of the Township of Bramhall, lying outside the drainage-area district.

The area and Census-population of the 5 Townships are as follows :—

|                         | Area in Acres. | Population at Census. |
|-------------------------|----------------|-----------------------|
| Bosden .. . . . . .     | 499            | 2342                  |
| Bramhall .. . . . . .   | 2885           | 3365                  |
| Norbury .. . . . . .    | 1249           | 1495                  |
| Torkington .. . . . . . | 823            | 294                   |
| Offerton .. . . . . .   | 623            | 372                   |

The estimated population in 1894, and the births and deaths during the year, as regards these Townships are as follows :—

|                         | Population in middle of 1894. | Births. | Deaths. |
|-------------------------|-------------------------------|---------|---------|
| Bosden .. . . . . .     | 2440                          | 69      | 37      |
| Bramhall .. . . . . .   | 3427                          | 72      | 52      |
| Norbury .. . . . . .    | 1527                          | 37      | 36      |
| Torkington .. . . . . . | 296                           | 4       | 2       |
| Offerton .. . . . . .   | 383                           | 7       | 2       |

The number of births in the whole Sub-District was therefore 189, and the number of deaths 130. Three deaths were the subject of inquests.

There were 2 deaths due to scarlatina and 4 to croup, there was 1 death due to small-pox, 1 to diarrhœa, 1 to typhoid fever, 1 to puerperal fever, and 1 to rheumatic fever. There were also 10 deaths due to phthisis, 21 to bronchitis or pneumonia, and 8 to heart disease.

The health of the Sub-District has been uniformly good. The low general death-rate and low zymotic death-rate indeed bear witness to this.

**Infant Mortality.**—The large proportion of deaths of infants under 1 year old is noticeable in 1894. Although premature birth and low vitality at birth may have influenced this considerably, a great deal may be put to the credit of injudicious feeding and nursing

**Infectious Disease.**—The number of cases of infectious disease notified was 37, viz: small-pox 2, scarlatina 15, diphtheria 1, membranous croup 8, typhoid fever 7, continued fever 1, puerperal fever 1, and erysipelas 2.

**Small-pox.**—One of the two cases of this disease reported, occurred in July and the other in August. Both were at once removed to the Stockport Borough Hospital. In neither case

could the origin be traced, the assumption being that the disease had been contracted outside the Sub-District.\*

**Scarlatina.**—The number of cases of this disease notified is exceptionally small. In 1893 there were 94 cases notified, in 1894 only 15. Though 2 patients died, the cases were generally of a mild type.

**Fevers.**—One of the cases of typhoid fever notified was traced to the insanitary surroundings of the works where the patient was employed, but none of the other cases call for special comment. In each instance the premises where the case occurred were inspected and the surrounding conditions inquired into and needed improvements were obtained.

**Milk-supply.**—The milk and all the food-supply of the Sub-District continue to be satisfactory. The Medical Officer of Health draws attention to the necessity of the greatest care being exercised by the vendors. Not only should all milk vessels in use be scrupulously clean, but they should be kept in a building quite separate and detached from the dwelling-house.

**Emptying of Ashpits.**—The systematic and regular emptying of Ashpits by the Authority is a decided improvement on the old method—leaving the pits to be emptied by farmers at irregular intervals. Regular emptying tends to the general health and comfort of the population.

**Sewering.**—During the year part of the Township of Norbury has had a main sewer laid down. This gets rid of a local difficulty. At one time an outbreak of typhoid fever was believed to have been caused by allowing houses to be erected and occupied before means was provided for taking away the sewage. Round about Bramhall village a residential district appears to be developing. This will require watching closely to see that the sanitary regulations are not infringed, and sewage matters allowed to flow into the open ditches. Probably a comprehensive scheme of sewage will be necessary as the neighbourhood develops.

**Street Defects.**—The Medical Officer of Health calls attention to the very unsatisfactory condition of Railway Street (between Hatherton Lane and Chester Road) which in wet weather is scarcely passable. This, being the only approach to the Station, is a very important thoroughfare. Grosvenor Street, and other unpaved streets in Bosden, also deserve attention. It would improve the main road of the

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\* Dr. Porter, Medical Officer of Health for Stockport Borough, reports on these cases as follows:—Case 1. E. G. (female) age 35, living at 1 Albert Street, Brewer's Green, Hazel Grove, admitted July 19th suffering from discrete small-pox, discharged convalescent, August 11th, patient had 3 good vaccination marks. Case 2. M. J. S. (female) age 45, living at 3 Albert Street, Brewer's Green, Hazel Grove, admitted August 7th, suffering from hæmorrhagic small-pox, died August 8th. No vaccination marks could be found though carefully looked for.

village of Hazel Grove, if the Authorities could see their way to the removal of the telegraph poles on the footpath. The danger is not as great as it was before the lamps were provided.

**Lectures on Nursing.**—The Lectures on nursing provided by the County Council have been the means of furnishing much useful information. The Medical Officer of Health suggests that it would be well worth while to provide a public nurse for the district. By this means an uncalculable amount of good might be done, improving the nursing of the sick and seeing that the instructions of the medical men in attendance are systematicall and properly carried out.

**Systematic Inspections** are made by both the Medical Officer of Health and the Inspector, and as a result many improvements have been effected without bringing pressure to bear upon owner or occupier.

**Report of Surveyor and Inspector.** — In all 200 nuisances were entered in the report-book and investigated. Formal notices were served in respect of 81, and 75 were abated without formal notice. Thirty-two house drains were cleansed and repaired, 16 surface drains or ditches were cleansed, 8 cesspools were cleansed, 3 sewers were cleansed, 23 houses were connected to the sewers, 12 waste-pipes were disconnected, 2 houses were supplied with water. Six houses in a dangerous condition were reported and dealt with.

There were 1688 yards of sewers laid, at a cost of £1200. The number of ashpit-emptyings during the year was 963. The cost of this was £154 5s. 7d.

Fifty-five new houses were erected, 9 additions to houses and 15 warehouses, stables, &c. One new street was made, and 5 street-lamps were provided.

## STOCKPORT.

### Rural Sanitary District.

#### South Werneth Sub-District.

Medical Officer of Health—DR. F. CANT.

Population at Census, 1891—1012.

Estimated population in middle of 1894—1012.

Area in acres—909.

Birth-rate per 1000 living—19·7.

Death-rate per 1000 living—22·7.

Death-rate from seven principal Zymotic diseases—3·9.

Deaths under one year to 1000 births—250.

This Sub-District is part of the Township of Werneth, the remainder being in the Borough of Hyde. It includes Comp-stall, with a manufacturing population of about 960, living on about 120 acres. The rest of the population is agricultural.

The number of births registered in 1894 was 20, and the number of deaths registered in 1894 was 23. Ten of the 23 deaths were of children under 5 years of age. The infant mortality is excessive.

There were 13 cases of scarlatina and 2 cases of diphtheria notified. All 15 cases recovered. Scarlatina prevailed in August, September and October. Cases of diphtheria and croup occurred in December. In the spring there was some prevalence of measles and whooping-cough. There were 4 deaths from the seven principal zymotic diseases, viz. :—1 measles and 3 whooping-cough. There were also 3 deaths from phthisis, 3 from heart disease, and 6 from bronchitis or pneumonia.

The Medical Officer of Health visited every case notified and gave instructions as to the isolation of patients so far as was practicable (none were removed to hospital), and as to disinfection. Where any nuisance was discovered steps were taken to have it remedied.

Several personal inspections of the district have been made, special attention having been given to the water-supply. Less cause for complaint has been found than in any former year, both as regards water service and the emptying and repairing of ashpits.

The cowsheds and milk-farms were visited by the Medical Officer of Health, and periodically by the Inspector. They were found to be clean and well kept.

The Inspector reports that 37 ashpits were repaired or altered. There were also 12 nuisances reported. Of these 4 were abated without formal notice, and in respect of 8 formal notices requiring abatement were served.

## TARVIN.

### Rural Sanitary District

Medical Officer of Health—DR. G. A. KENYON.

Population at Census, 1891—12436.

Estimated population in middle of 1894—12407.

Area in acres—54547.

Birth-rate per 1000 living—24·5.

Death-rate per 1000 living—13·2.

Death-rate from seven principal Zymotic diseases—1.

Deaths under one year to 1000 births—68.

This large Rural District is not divided into sub-districts, but it includes no less than 56 townships. These are as follows ;—Broxton, Tilston, Horton, Grafton, Carden, Stretton, Caldecott, Crewe, Farndon, Churton-by-Farndon, Barton, Clutton, Kingsmarsh, Coddington, Chowley, Aldersley, Harthill, Edgerley, Churton-by-Aldford, Aldford, Buerton, Lea Newbold, Churton Heath, Saughton, Iddinshall, Waverton, Huxley,

Hatton, Tattenhall, Golborne Bellow, Newton-by-Tattenhall, Handley, Golborne David, Foulk Stapleford, Bruen Stapleford, Burton, Clutton Hoofield, Dutton, Willington, Kelsall, Ashton, Mouldsworth, Horton-with-Peele, Tarvin, Hockenhull, Pryors Hayes, Barrow, Guilden Sutton, Cotton Edmunds, Cotton Abbots, Rowton, Huntington, Tiverton, Tilston Fearnall, Beeston, and Burwardsley.

There has been transferred to this District the enumerated population of the Tarvin Union Workhouse, situated at Great Boughton, in the Chester Rural District.

In 1894, the births registered in the district numbered 305, and the deaths (including 6 deaths occurring outside the district, but belonging thereto) numbered 164. The death-rate is lower than any recorded in the district during the last 20 years, and the proportion of deaths among infants is very small.

There were 10 deaths from diphtheria, 4 from membranous croup, 3 from puerperal fever, 1 from erysipelas, 2 from diarrhœa, 13 from phthisis, 18 from bronchitis or pneumonia, 24 from heart disease, and 3 from injuries.

Under the Infectious Disease Notification Act there were reported 24 cases of scarlatina, 50 of diphtheria, 4 of typhoid fever, 2 of puerperal fever, and 9 of erysipelas. Of these one case of scarlatina, 8 cases of diphtheria, and 3 cases of typhoid fever were removed to the Fever Hospital at the Chester Infirmary. The Medical Officer of Health acknowledges the courteous manner in which medical practitioners in the district respond to the supplementary questions on the notification forms, and in every way do what they can to prevent the spread of infection.

**Diphtheria.**—Most of the cases of this disease occurred at Kelsall or Tarvin, and all but one on the north-east side of the Chester and Crewe Railway—a portion of the district in which Kelsall and Tarvin are the only large villages. The 50 cases occurred in 31 households; in some cases successive members of a family being attacked. Many of the cases were very mild. In January, February, July, and August there were very few cases. Among the other months cases were about equally distributed. The Medical Officer of Health personally investigated nearly all the cases. They were isolated as far as possible, but the disease manifested little tendency to spread from house to house. Where accommodation was insufficient the cases were removed to the Fever Hospital, Chester, and treated at the expense of the district. When sanitary defects were discovered they were remedied. Disinfectants were supplied when the people were poor, and in several cases Mr. Clarke assisted in the disinfection. Care was taken to prevent children from infected families attending school. There was no suspicion of the disease spreading through the agency of milk, or water, or other articles of food.

The cases of erysipelas and puerperal fever occurred for the most part in the same localities as the cases of diphtheria. Scarletina was more equally distributed, there being as many cases on the one side of the district as the other. At Dutton the managers closed the infant school for a time, owing to the prevalence of scarlatina. The same action was taken in respect of cases of typhoid fever and scarlatina as in dealing with diphtheria.

The Medical Officer of Health has visited the district frequently, and, besides investigating cases of infectious disease, has made general inspections with Mr. Clarke, and otherwise. The Inspector (Mr. Clarke) continues to perform his duties with assiduity, and progress is being made in removing conditions injurious to health.

**Water-supply.**—Efforts to improve the water-supply are hampered by the very limited outlay owners can be called upon to make, to say nothing about the roundabout way in which only can proceedings be taken.

A new well has been sunk at Oscroft (Tarvin) for the use of several houses, by the owners in combination. Three other wells have been sunk, one (a private well) being at Tiverton. At the last-named place a good supply is much needed. The Authority have, in conjunction with the agent for the principal proprietor, Lord Tollemache, been endeavouring to devise a scheme for the general supply of the village with water by a deep well, or the extension of water mains from the Liverpool Works in the neighbourhood. The two public wells, being "dip" wells, are contaminated with surface and subsoil impurities, besides being inconvenient of access. Good water is not easily obtained in the district, owing to the nature of the subsoil. An attempt on the part of the Sanitary Authority to improve the water-supply by a small local gravitation scheme at Burwardsley (where there is good water, but not convenient of access) was arrested by a petition from the inhabitants, headed by the Vicar, to the effect that they "preferred to endure the present inconvenience to which they were accustomed, rather than incur the expense of any improvement which, whether done at the cost of the rates or landlords, would equally be felt by the occupiers."

During the year 15 samples of water were submitted to the Medical Officer of Health for analysis. Eight were found to be bad and unfit to drink. In these cases action was taken to remove sources of contamination, and instructions given to discontinue the use of water or (when this was impossible) to boil it.

**Dairies, &c.**—The premises registered for the sale of milk are regularly visited by the Inspector, and are generally well kept.



**Slaughter-houses.**—There are 12 slaughter-houses, regularly inspected.

**Sewers, Ashpits, &c.**—The district being thinly populated, and not having many large villages, there are few sewers, and water-closets are comparatively rare. The sewers at Barrow and Tattenhall are flushed occasionally during the hot weather. Throughout the whole district most of the houses are provided with ashpit-privies. These in some instances are emptied at short intervals, the contents being used on adjoining land, but the emptying generally awaits the convenience of neighbouring farmers. The Sanitary Authority has aimed at getting these privies modified so as to approximate them as far as possible to earth-closets, and much has been done in this direction.

**Inspector's Report.**—Mr. Clarke, the Inspector of Nuisances, makes a very complete report of his work, during the year. According to this 30 complaints were received, and 176 orders were issued with reference to nuisances, &c, on premises. As a result 40 houses were repaired or cleansed and white-washed, 30 house-drains were put in order, 80 privies were repaired, &c., and 7 new ones provided. Fifty accumulations of refuse were removed and 8 cisterns were cleansed, repaired and covered. Few cases of overcrowding came under notice, and they were dealt with amicably. No prosecutions were undertaken.

**Lodging-houses.**—There are two lodging-houses registered in the district. These were regularly inspected.

## WARRINGTON.

### Part of Rural Sanitary District in Cheshire.

Medical Officer of Health—DR. R. SEPTON.

Population at Census, 1891—2194.

Estimated population in middle of 1894—2437.

Area in acres—3397.

Birth-rate per 1000 living—17.6.

Death rate per 1000 living—11.0.

Death-rate from seven principal Zymotic diseases—1.2.

Deaths under one year to 1000 births—139.

This Rural District has an area of 23681 acres, and is mainly situated in Lancashire. The Cheshire portion is as follows :—

|                                 | Area in<br>Acres. | Population<br>at Census. |
|---------------------------------|-------------------|--------------------------|
| Part of Latchford ...           | 529               | 440                      |
| Grappenhall ...                 | 1610              | 984                      |
| Thelwall (including Greenfield) | 1258              | 770                      |

In 1894 there were registered in the Cheshire portion of this district 43 births and 27 deaths. The number of deaths from zymotic diseases was 3, viz. : 2 typhoid fever and 1 measles. The birth-rate, death-rate and zymotic-rate are low.

**Infectious Disease.**—Only six cases of infectious disease came to the knowledge of the Medical Officer of Health, viz. : 2 scarlatina, 3 typhoid fever and 1 measles.

**Typhoid Fever.**—Two out of the three reported cases of this disease were brought into the district, the disease having been contracted outside. In the third case no insanitary surroundings were discovered and the cause could not be ascertained.

**Isolation Hospital Needed.**—As reported previously, the District is still without any means of isolating and treating infectious diseases, except in the homes of the patients. Several efforts have been made to find a suitable house for a hospital, or a site on which to erect one, but as yet without success. Every precaution is taken to prevent the spread of infectious cases, by using disinfectants, and by isolating the patients as far as possible, but it is very difficult and at times impossible to separate the sick from the healthy in the homes of the poor.

**Water-supply.**—During the year many supplies have been sampled, and the samples submitted to the Analyst for analysis and report. All waters certified as “bad” or “doubtful” have been rejected, and better supplies have in many cases been obtained.

**Routine Work.**—Every part of the district is inspected by the Medical Officer of Health periodically, and when insanitary conditions exist or there is excess of sickness, frequent visits of inspection are made. Defects discovered have been reported and remedied. Common lodging-houses, bake-houses, dairies, cow-sheds, milk shops, slaughter-houses and knackers' yards have been inspected.

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## WHITCHURCH.

Part of Rural Sanitary District in Cheshire,

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## MALPAS

Rural District.

Medical Officer of Health—DR. W. N. THURSFIELD.

Population at Census, 1891—4318.

Estimated population in middle of 1894—4318.

Area in acres—21160.

Birth-rate per 1000 living—28·7.

Death-rate per 1000 living—12·0.

Death-rate from seven principal Zymotic diseases—0·6.

Deaths under one year to 1000 births—80.

The Rural Sanitary District of Whitchurch was situated partly in Shropshire and Flint. The main portion, in Cheshire, included the whole of the registration sub-district of Malpas, and the three townships in the registration sub-district of Whitchurch.

Malpas sub-district has an area of 16468 acres and a population of 3528. It includes Bickley, Hampton, Larkton, Duckington, Edge, Overton, Malpas, Chorlton, Cuddington, Oldcastle, Newton-by-Malpas, Stockton, Wyclough, Wigland, Agden, Chidlow, Bradley, Macefen, and Tushingham with Grindley.

The portion of Whitchurch sub-district in Cheshire has an area of 4692 acres and a population of 792. It includes Wirswall, Marbury with Quoisley, and Norbury.

The whole of the Cheshire portion of the Whitchurch Rural Sanitary District forms the new Rural District of Malpas.

In 1894 the number of births registered was 124, and the number of deaths was 52, including 3 deaths occurring outside the district among persons belonging thereto. The birth-rate is nearly 1 above the mean birth-rate of the 15 years immediately preceding, and the death rate is 2·4 below the mean death-rate of the 15 years immediately preceding. The proportion of deaths under one year to births is small, as it has been for many years.

There were 3 deaths from zymotic diseases, viz : 1 scarlatina, and 2 diarrhœa.

The number of cases of infectious disease which came to the knowledge of the Medical Officer of Health was 22, viz : 15 scarlatina, 4 diphtheria and 3 erysipelas. The number of cases given exceeds the number notified under the Infectious Disease (Notification) Act. Indeed it is found as a rule that careful investigation after an outbreak of scarlatina or diphtheria will reveal other cases of undoubtedly the same disease, but so mild and ill defined as not to have attracted much notice or received medical attendance. These mild cases are most important, as it is generally through their not being kept from school disease is disseminated. No hospital is provided, but the necessity of isolation as far as practicable is enjoined, and printed directions are given showing those in charge of the sick how to prevent the spread of infection. Special care is taken to obviate risk of infection by school attendance, clothing taken to wash, milk selling, &c. On the patient's recovery the need is pointed out of having the infected clothing &c., thoroughly cleansed, and the infected rooms fumigated with sulphur and lime-washed.

**Scarlatina.**—The 15 cases of this disease represent several outbreaks. In some the infection was imported, and

was successfully confined to the houses in which the disease first appeared. In others the spread of the disease was evidently due to the intercourse of children at school, and on this account the Macefen School was very wisely closed by the managers for a short time in October, with a good effect in checking the outbreak. Only one of the 15 known cases proved fatal.

**Diphtheria.**—But one outbreak of this disease came under notice. It was at a house where slight cases of the disease seemed to have occurred a year or two before. Proper precautions were taken. Four persons had the disease, and no cases were known outside the household first attacked.

**Water-supply.**—The supply for Malpas is from the Liverpool mains, but it is intermittent, being turned off at night. Considering the insidious sources of contamination to which an intermittent supply is liable, it is very desirable the supply should be made constant. On the other hand, unless this change were preceded by a careful survey of the water fittings, there would be a considerably increased loss through leakages, and, as the water is paid for per 1000 gallons, this is an important consideration. After a skilled survey, a good code of regulations as to water fittings should be adopted, and a class of fittings suitable for a supply on the constant system should be gradually introduced. The Medical Officer of Health suggests that the subject of regulating the pressure from the Liverpool mains by automatic appliances might well receive attention.

The detection of unnecessary waste of water, under such circumstances as exist at Malpas, is skilled work, and has to be undertaken chiefly at night. The Medical Officer of Health suggests that the Council should engage for a short time the assistance of one of the numerous inspectors who make a speciality of this work.

The hamlet of Cuddington, containing some 30 houses (of which there appear to be more than a dozen owners) is badly in need of a good supply. There are seven private pump-wells in connection with houses, and to some of these cottagers are allowed access as a matter of kindness, but the supply therefrom is not satisfactory. The water from one pump-well cannot be used, owing to its bad taste and smell. Another of these wells is liable to frequent flooding by a brook, and another is "between a pigstye on one side and a stable on the other, and within a short distance of a defective house drain." The majority of the cottagers resort to a source in a field, which fails in dry weather. There is also a public dip-well on the Malpas side of the brook, which is little used. It is surrounded by a brick wall to keep out the soil and surface water, but this is a very imperfect protection, and on the side next the brook has been broken down. In the opinion of the Medical Officer of Health this public well cannot be regarded as a proper water-supply for the village, and a wholesome supply

should be provided either by the extension of the Malpas main (which comes to within a quarter of a mile of the village) or by the sinking of a village well. The extension of the main is he fears impracticable, but the sinking of a well may be recommended, as a site within easy access of all the houses could easily be obtained, where the well would have a grass field on one side and for some distance all around, and a high road on the other.

**Pollution of a Brook.**—Complaints have been received that in summer the brook running through Cuddington is extremely offensive. This is probably due to the fact that the sewage of a considerable portion of Malpas, after irrigation over land, finds its way to the brook, and at times when irrigation cannot be practised is turned direct into ditches, so that some portion of it is liable to be washed into the brook. In its course through the village the brook also receives contaminations, chiefly from house-drainage, which in some instances is turned direct into it. In one instance at least, a closet drains directly into the brook.

**Houses unfit for Habitation.**—Some of the houses in Cuddington are in a very bad condition. There is a dwelling occupied by two women and two children, which cannot be regarded otherwise than unfit for human habitation. In the case of another house the occupier declines to permit it to be inspected, but as viewed from the outside, it is seen to be in a very bad state. Where action has been taken against the owners of insanitary houses, the procedure in all cases has been under the Public Health Act, 1875, and the results are included in the return referring to the abatement of nuisances.

**Systematic Inspection.**—During the year, at certain periods and as occasion required, the Medical Officer of Health inspected the district, to keep himself informed by personal observation, as to the conditions injurious to health existing therein, or to advise in doubtful cases, &c. Important as are these inspections, the investigation of the condition and surroundings of each house is the surest foundation and most practicable method of sanitary progress. A precise and detailed house-to-house survey has therefore been ordered by the Authority, and is now being carried out by the Inspector, and followed by notices, &c., as may be required when defects are discovered.

**Abatement of Nuisances.**—The attention given by the Inspector to complaints made, and to a systematic house to-house survey, is indicated in the following return:—The number of houses inspected was 370; the number of notices served, formal and informal, was 120, and the approximate number of these complied with was 90. In 32 houses the drainage was defective, in 72 the closet accommodation was unsatisfactory, in 9 cases

the houses were dilapidated, damp or dirty, in 4 the water-supply was objectionable, and in 4 cases offensive accumulations had to be removed. Twelve houses were disinfected. In a case of overcrowding proceedings were taken before the magistrates to obtain abatement of the nuisance.

## WIRRAL.

### Rural Sanitary District.

Medical Officer of Health—DR. G. A. KENYON.

Population at Census, 1891—18707.

Estimated population in middle of 1894—16452.

Area in acres—38669.

Birth-rate per 1000 living—26·9.

Death-rate per 1000 living—11·3.

Death-rate from seven principal Zymotic diseases—1·6.

Deaths under one year to 1000 births—94.

This district has for registration purposes been divided into four sub-districts, viz. :—Neston, Eastham, Bebington and Woodchurch. Till quite recently the district had but three sub-districts, Brimstage, Poulton-cum-Spital and Storeton (now constituting the sub-district of Bebington), being part of the sub-district of Eastham. Keeping to the old arrangement the sub-districts are as follows :—

1. Neston, having an area of 12668 acres, and an estimated population of 3665. It includes Puddington, Burton, Ledsham, Willaston, Ness, Raby, Thornton Hough, Gayton and Heswall-with Oldfield.
2. Eastham, having an area of 11348 acres, and an estimated population of 8558. It includes Great Sutton, Little Sutton, Whitby, Overpool, Netherpool, Childer Thornton, Hooton, Eastham, Primstage, Poulton-cum-Spital and Storeton.
3. Woodchurch, having an area of 12610 acres, and an estimated population of 3750. It includes Prenton, Woodchurch, Landican, Thingwall, Barnston, Pensby, Irby, Arrow, Thurstaston, Caldy, Frankby, Greasby, Grange (part of), Upton, Saughall Massie, and Moreton.

To the Rural District, as thus constituted, must now be added what has hitherto been the Rural District of Birkenhead. This consists of Bidsten-with Ford, having an area of 1713 acres, and Noctorum, having an area of 330 acres. The population of the Birkenhead Rural District at the Census was 456 and the estimated population for 1894 is 479.

It will be noted that the estimated population of the Wirral Rural District is much below the population recorded at the time of the Census. This is due to the fact that among those enumerated at Whitby, Netherpool, Hooton and Eastham,

were 2432 persons engaged on the Manchester Ship Canal. These formed no part of the local population in 1893 or 1894.

The birth-rates of the 3 sub-districts, in 1894, were respectively 30·5, 26·4 and 27·4. The death-rates of the 3 sub-districts, in 1894, were respectively 10·1, 11·8 and 13·7. As there were only 3 births and 3 deaths in the Birkenhead Rural District, the birth-rate was 6·2, and the death-rate the same.

The births registered in the whole new Wirral Rural District numbered 444. The deaths registered in the whole new Wirral Rural District (excluding 18 deaths occurring within the district among persons not belonging thereto) numbered 192.

There were 27 deaths from the principal zymotic diseases, viz: 9 measles (all of infants under 2 years old), 1 scarlatina, 3 typhoid fever, 7 whooping-cough (6 of which were of infants under one year old), and 7 diarrhœa (6 of which were of infants under one year old). There were also 2 deaths from croup, 11 from phthisis, 27 from bronchitis or pneumonia, 17 from heart disease, and 8 from injuries.

Under the Infectious Disease Notification Act there were reported 69 cases of scarlatina, 11 cases of typhoid fever, 1 case of puerperal fever and 17 cases of erysipelas. Of these 10 cases of scarlatina and 1 case of typhoid fever were removed to hospital.

The cases were all visited, and action taken as required for removal of the patients needing it to hospital, for disinfection, for remedying insanitary conditions and preventing attendance at school. In one locality (Burton) the managers, on the advice of the Medical Officer of Health, closed the schools, owing to the prevalence of scarlatina. At Ellesmere Port the managers, on the advice of the Medical Officer of Health, closed the schools, owing to the prevalence of measles.

**Scarlatina.**—The cases of this disease were scattered over distant parts of the district, at intervals throughout the year. There was no great spread in any one locality, although in several cases the disease spread through the family. Thus 29 out of the 69 cases occurred in 6 families. The whole number of families affected was 32. The mortality it will be noted was remarkably low.

The Medical Officer of Health visited the district frequently, making general and special inspections and investigating outbreaks of disease.

**A Polluted Brook.**—Particular attention has been directed to the Spital boundary brook, which has become a nuisance. Into this brook two houses have for years discharged the overflow from their cesspools, without occasioning any inconvenience. But recently the owner of one of these houses, on reconstructing the sanitary arrangements of his house, under the advice of a sanitary engineer, abolished the cesspools and turned the crude sewage into the water-course. Thus a

nuisance was created, and just at the time a handsome house was built on land near the brook (a little distance below) the owner of which justly complained. In response to the demands of the Sanitary Authority, some considerable expense was incurred by the owners of the offending houses, in constructing large settling-tanks to divert the grosser parts of their sewage from the brook. The expense, however, was unavailing, on account of a failure to arrange with the Railway Company, who own the intervening land and oppose any alteration. A further delay was caused by an application on the part of the owners of the houses to the Local Government Board, with a view of causing the Sanitary Authority to sewer the district, which except with regard to the two houses has been sufficiently sewered at the cost of the owners of property. The Sanitary Authority have given directions for proceedings to be taken before the magistrates—the statutory notice has been served and should be followed up forthwith.

**Building Bye-laws** have been for years in force throughout the more populous part of the district. They were, during 1894, at the request of the Sanitary Authority, carefully revised by Mr. Priest (Messrs. Beloe and Priest) in conjunction with the Medical Officer of Health, in view of their re-issue and extension throughout the whole of the district. Messrs. Beloe and Priest are engaged to examine the plans of proposed buildings for the Sanitary Authority.

**Water-supply.**—The district is very generally supplied with water from the Wirral Water Works. The Company are sinking a well at Hooton to improve the water-supply. Bidston-with-Ford and Noctorum are supplied from the Birkenhead Water Works.

During the year 3 samples of water from private wells were submitted to the Medical Officer of Health for analysis. One was found to be highly contaminated and two were of indifferent quality. They were all condemned as unfit for use.

**Sewers, Ashpits, &c.**—The sewers at Eastham, Heswall and Ellesmere Port are flushed regularly. The sewers at Upton are flushed when required. The Sanitary Authority continue to contract for the removal of privy and ashpit refuse at Ellesmere Port, Little Sutton and Childer Thornton.

**Inspector's Report.**—Mr. Wallis, the Inspector for the greater part of the district, is very attentive to his duties. These duties, in addition to the more ordinary sanitary work, include the inspection of new houses to see that they conform to requirements of the building bye-laws, the inspection of cowsheds and dairies (241 in number), the inspection of canal boats (185) the care of the sewers and the flushing thereof, and the supervision of the contractors who remove the ashpit refuse, Mr. Wallis reports that he specially inspected 1395 houses and



served 143 notices. Thirty-eight houses and premises were disinfected and lime-washed, 35 houses were supplied with water, 40 privies were cleansed and repaired, 2 new privies were built, 20 drains were trapped, 56 drains were cleansed and repaired, 4 animals kept so as to be a nuisance were removed and 6 piggeries were cleansed. Two cases of overcrowding were dealt with, a house unfit for habitation was also dealt with, and a smoke nuisance. Six canal boats were ordered to be painted and repaired.

Mr. Carter continues to act as Inspector of the old Birkenhead Rural District, maintaining a vigilant supervision over it. There are here 27 milk farms and numerous dairies regularly inspected.

**The Wirral Joint Hospitals.**—Towards the close of the year the Spital Hospital was enlarged by the addition of an extra pavilion furnished with 12 beds. The Greasby Hospital, in the absence of small-pox, was made available for the reception of convalescents, to relieve the pressure on the Spital Hospital during the prevalence of scarlatina in the Wirral Joint Hospital District.

**Parochial Committee.**—A regularly constituted parochial committee was during the year supervising sanitary matters at Ellesmere Port.

## WREXHAM.

### Part of Rural Sanitary District in Cheshire.

Medical Officers of Health—DR. E. DAVIES and DR. W. JONES.

Population at Census, 1891—522.

Estimated population in middle of 1894—522.

Area in acres—2478.

Birth-rate per 1000 living—24·9.

Death-rate per 1000 living—21·0.

Death-rate from seven principal Zymotic diseases—1·9.

Deaths under one year to 1000 births—153.

The portion of this Rural District in Cheshire includes the townships of Shocklach Church and Shocklach Oviatt, and part of the township of Threapwood. The area and population, as given in the Census Report, are as follows:—

|   | Area in Acres. | Population at Census. |
|---|----------------|-----------------------|
| Shocklach Church ... ..                             | 1278           | 158                   |
| Shocklach Oviatt (including Shocklach Green) ... .. | 1048           | 158                   |
| Part of Threapwood ... ..                           | 152            | 206                   |

In Shocklach Church there were 6 births and 4 deaths. In Shocklach Oviatt there were 4 births and 4 deaths. In the

Cheshire portion of Threapwood there were 3 births and 3 deaths. Thus the whole number of births was 13 and the whole number of deaths 11.

One of the deaths at Shocklach Oviatt was from scarlatina, and one of the deaths at Shocklach Church was from phthisis.

Two of the deaths were of infants under one year old.

Thirteen cases of scarlatina and 2 cases of erysipelas were notified during the first 3 months of the year. They all occurred in Shocklach Church or Oviatt. There were not any of them removed to hospital.

Dr. E. Davies is Medical Officer of Health for the Northern division of the district, containing Shocklach Church and Shocklach Oviatt. Dr. W. Jones is Medical Officer of Health for the Southern division of the district, containing Threapwood.

Administrative County of Chester

APPENDIX OF STATISTICS

FOR 1891

NOTE.—The information in these three Tables is derived from the Returns made by the district Medical Officers of Health on Forms **A** and **B**, supplied to them by the Local Government Board. The proportion of persons per acre, the birth-rates and death-rates, proportion of deaths of infants to births, the deaths from the seven principal zymotic diseases and corresponding death-rates, have been added. The population in 1891 and the areas are from the official Census returns.

TABLE III.—Infantile Diseases.

Showing new cases notified, and new cases removed to Hospital, classified according to Localities, Ages, and Diseases; and giving particulars as to compulsory notification of Infantile Diseases and Hospital Provision.

TABLE I.—POPULATION, AREA, BIRTHS, DEATHS, &C.

Showing enumerated and estimated population, area, persons per acre, births and deaths, birth-rates and death-rates, deaths at various ages, proportion of deaths of infants to births, deaths from 7 principal zymotic diseases, & corresponding death-rates.

| SANITARY DISTRICTS.                             | Population at Census, 1891 | Estimated Population in mid of 1894. | Area Acres.  | Persons to an Acre. | Births.     | Birth-rate per 1000 Living. | Deaths.     | Death-rate per 1000 Living. | Deaths from All Causes at subjoined Ages. |               |                |                 |                 |                 | Deaths under 1 Year to 1000 Births. | Deaths from seven principal Zymotic Diseases. | Principal Zymotic Diseases. | Death-rate. |
|---|----------------------------|--------------------------------------|--------------|---------------------|-------------|-----------------------------|-------------|-----------------------------|---|---------------|----------------|-----------------|-----------------|-----------------|-------------------------------------|---|-----------------------------|-------------|
|   |                            |                                      |              |                     |             |                             |             |                             | under 1 Year                              | 1 and under 5 | 5 and under 15 | 15 and under 25 | 25 and under 65 | 65 and upwards. |                                     |   |                             |             |
| <b>MUNICIPAL BOROUGHS.</b>                      |                            |                                      |              |                     |             |                             |             |                             |   |               |                |                 |                 |                 |                                     |   |                             |             |
| Congleton ... ..                                | 10744                      | 10744                                | 2579         | 4.17                | 235         | 27.4                        | 163         | 15.0                        | 36  | 11            | 10             | 5               | 47              | 40              | 192                                 | 7   | 0.6                         |             |
| Crewe ... ..                                    | 32783                      | 32950                                | 2193         | 16.30               | 1215        | 35.7                        | 553         | 14.4                        | 174                                       | 72            | 22             | 24              | 154             | 74              | 143                                 | 54  | 1.5                         |             |
| Hyde ... ..                                     | 31570                      | 31389                                | 3074         | 10.30               | 334         | 30.4                        | 315         | 16.4                        | 148                                       | 61            | 16             | 33              | 164             | 93              | 155                                 | 30  | 0.9                         |             |
| Macclesfield ... ..                             | 80293                      | 80229                                | 3215         | 11.20               | 1017        | 28.2                        | 419         | 17.8                        | 138                                       | 80            | 14             | 32              | 219             | 161             | 183                                 | 61  | 1.6                         |             |
| Stalybridge ... ..                              | 36783                      | 37583                                | 8135         | 8.70                | 811         | 29.4                        | 510         | 18.4                        | 122                                       | 63            | 26             | 23              | 147             | 123             | 150                                 | 44  | 1.5                         |             |
| <b>OTHER URBAN DISTRICTS.</b>                   | <b>186589</b>              | <b>181655</b>                        | <b>14189</b> | <b>9.98</b>         | <b>4292</b> | <b>30.3</b>                 | <b>2350</b> | <b>16.5</b>                 | <b>619</b>                                | <b>267</b>    | <b>88</b>      | <b>122</b>      | <b>742</b>      | <b>492</b>      | <b>144</b>                          | <b>190</b>                                    | <b>1.4</b>                  |             |
| Alcester (new district)                         | 1019                       | 5300                                 | 2241         | 1.02                | 51          | 21.1                        | 24          | 10.4                        | 5   | ..            | ..             | 2               | 12              | 5               | 98                                  | 1   | 0.4                         |             |
| Atrincham                                       | 12440                      | 14888                                | 502          | 12.45               | 338         | 28.5                        | 276         | 18.3                        | 53  | 45            | 8              | 12              | 61              | 57              | 144                                 | 22  | 1.7                         |             |
| Higher Babington                                | 1421                       | 1508                                 | 990          | 2.15                | 88          | 25.2                        | 30          | 13.2                        | 1   | 1             | ..             | ..              | 9               | 7               | 26                                  | 2   | 1.3                         |             |
| Lower Babington                                 | 5215                       | 5503                                 | 1054         | 5.22                | 182         | 33.0                        | 90          | 16.3                        | 24  | 11            | 7              | ..              | 25              | 23              | 131                                 | 18  | 3.2                         |             |
| Bollington                                      | 3913                       | 3913                                 | 454          | 7.94                | 108         | 27.8                        | 57          | 14.5                        | 15  | 5             | 4              | 3               | 12              | 18              | 137                                 | 7   | 1.7                         |             |
| Bowdon  | 3702                       | 3840                                 | 850          | 8.34                | 25          | 12.8                        | 25          | 8.8                         | 2   | 3             | 1              | 1               | 8               | 10              | 57                                  | 5   | 1.7                         |             |
| Bredbury and Romiley                            | 3702                       | 4601                                 | 2336         | 1.57                | 119         | 22.7                        | 60          | 14.0                        | 16  | 6             | ..             | ..              | 5               | 21              | 12                                  | 5   | 1.2                         |             |
| Bredbury  | 1920                       | 1701                                 | 1189         | 1.68                | 31          | 30.3                        | 34          | 16.0                        | 6   | 9             | ..             | 1               | 9               | 12              | 131                                 | 5   | 1.2                         |             |
| Romiley   | 1782                       | 1701                                 | 1155         | 1.18                | 55          | 31.2                        | 17          | 9.6                         | 5   | 3             | ..             | ..              | 5               | 4               | 90                                  | 4   | 1.9                         |             |
| Buglawton                                       | 1382                       | 1382                                 | 2011         | 0.47                | 53          | 38.3                        | 26          | 18.8                        | 9   | 3             | ..             | ..              | 1               | 9               | 4                                   | 169   | 0                           | 0.5         |
| Cheadle and Gatley                              | 7783                       | 8028                                 | 1812         | 1.39                | 292         | 24.9                        | 105         | 13.0                        | 26  | 10            | 6              | 8               | 24              | 38              | 128                                 | 9   | 1.4                         |             |
| Chorley (now Alderley Edge)                     | 2270                       | 2470                                 | 880          | 3.85                | 45          | 18.9                        | 57          | 11.8                        | 3   | 2             | 3              | ..              | 12              | 7               | 69                                  | 3   | 1.3                         |             |
| Dukinfield                                      | 17468                      | 17800                                | 1412         | 13.60               | 552         | 31.0                        | 315         | 17.7                        | 103                                       | 37            | 18             | 12              | 80              | 65              | 186                                 | 17  | 0.9                         |             |
| Hollingworth                                    | 2895                       | 2895                                 | 2088         | 1.88                | 65          | 23.8                        | 38          | 13.1                        | 9   | 5             | 1              | 2               | 13              | 8               | 130                                 | 1   | 0.4                         |             |
| Hoole   | 3829                       | 3829                                 | 381          | 10.05               | 113         | 33.0                        | 56          | 16.8                        | 20  | 4             | 1              | 1               | 22              | 8               | 177                                 | 6   | 1.8                         |             |
| Hoyle and West Kirby                            | 4076                       | 4079                                 | 1514         | 3.05                | 204         | 27.1                        | 59          | 12.6                        | 18  | 3             | 1              | 4               | 21              | 12              | 112                                 | 6   | 1.2                         |             |
| Hoyle   | 2469                       | 2834                                 | 505          | 5.91                | 142         | 25.3                        | 77          | 13.7                        | 18  | 9             | 3              | 2               | 80              | 15              | 125                                 | 4   | 0.7                         |             |
| West Kirby                                      | 1607                       | 1245                                 | 1009         | 1.52                | 103         | 39.8                        | 71          | 14.3                        | 16  | 14            | 6              | 5               | 13              | 17              | 155                                 | 14  | 2.8                         |             |
| Lymm  | 4955                       | 4530                                 | 4875         | 1.28                | 194         | 23.1                        | 51          | 11.3                        | 17  | 8             | 1              | 1               | 8               | 16              | 87                                  | 3   | 0.6                         |             |
| Martle  | 4844                       | 4530                                 | 3353         | 1.52                | 103         | 39.8                        | 71          | 14.3                        | 16  | 14            | 6              | 5               | 13              | 17              | 155                                 | 14  | 2.8                         |             |
| Middlewich                                      | 3708                       | 4500                                 | 1785         | 1.85                | 184         | 23.1                        | 51          | 11.3                        | 17  | 8             | 1              | 1               | 8               | 16              | 87                                  | 3   | 0.6                         |             |
| Mottam  | 3270                       | 3270                                 | 1254         | 8.01                | 73          | 33.0                        | 146         | 19.4                        | 46  | 20            | ..             | ..              | 3               | 20              | 15                                  | 236   | 4                           | 1.2         |
| Nantwich  | 7412                       | 7500                                 | 703          | 10.62               | 222         | 33.3                        | 146         | 19.4                        | 46  | 20            | ..             | ..              | 3               | 20              | 15                                  | 236   | 4                           | 1.2         |
| Neston and Parigate                             | 3377                       | 3385                                 | 3830         | 1.11                | 147         | 40.4                        | 70          | 19.2                        | 18  | 9             | 5              | 5               | 82              | 50              | 181                                 | 40  | 5.3                         |             |
| Northwich                                       | 14914                      | 17000                                | 1738         | 9.71                | 653         | 38.2                        | 318         | 18.7                        | 114                                       | 48            | 5              | 20              | 13              | 122             | 19                                  | 5.2   |                             |             |
| Runcorn   | 30059                      | 19000                                | 1179         | 16.11               | 710         | 37.8                        | 317         | 16.7                        | 90  | 53            | 8              | 11              | 15              | 87              | 43                                  | 175   | 41                          | 2.4         |
| Sale  | 9844                       | 10350                                | 2006         | 5.38                | 269         | 25.3                        | 137         | 13.4                        | 33  | 18            | 6              | 4               | 35              | 40              | 132                                 | 14  | 1.3                         |             |
| Sandbach  | 5824                       | 6030                                 | 2694         | 2.22                | 100         | 31.6                        | 88          | 14.6                        | 21  | 8             | 5              | 4               | 23              | 27              | 110                                 | 3   | 0.5                         |             |
| Tatporley                                       | 3702                       | 3710                                 | 3194         | 0.43                | 85          | 31.2                        | 64          | 23.5                        | 15  | 5             | 2              | 3               | 22              | 17              | 176                                 | 5   | 1.8                         |             |
| Wallasey  | 14839                      | 16000                                | 880          | 20.00               | 531         | 32.1                        | 250         | 15.0                        | 59  | 44            | 10             | 16              | 72              | 48              | 110                                 | 33  | 2.0                         |             |
| Poulton-cum-Seacombe                            | 16823                      | 18100                                | 282          | 18.43               | 408         | 25.5                        | 248         | 13.7                        | 45  | 31            | 10             | 12              | 82              | 68              | 110                                 | 30  | 1.6                         |             |
| Liscard   | 9007                       | 2400                                 | 1502         | 1.44                | 61          | 25.0                        | 28          | 12.1                        | 11  | 2             | ..             | ..              | 8               | 6               | 180                                 | 1   | 0.4                         |             |
| Wallasey  | 3344                       | 5144                                 | 5103         | 1.24                | 150         | 25.0                        | 88          | 13.8                        | 20  | 3             | 4              | 31              | 27              | 105             | 2                                   | 0.3   |                             |             |
| Wilslow   | 10440                      | 10600                                | 5780         | 1.83                | 378         | 35.1                        | 151         | 14.2                        | 44  | 23            | 5              | 4               | 41              | 34              | 117                                 | 19  | 1.8                         |             |
| Winsford  | 1285                       | 1285                                 | 1323         | 0.98                | 88          | 30.7                        | 9           | 7.2                         | 2   | ..            | ..             | ..              | 3               | 3               | 52                                  | 0   | ..                          |             |
| Yearsley-cum-Whaley                             | 470                        | 491                                  | ..           | ..                  | ..          | ..                          | 34          | ..                          | ..  | ..            | 1              | 3               | 21              | 9               | ..                                  | ..  | ..                          |             |
| Convalescent Hospital & Royal Asylum, Chester   | ..                         | ..                                   | ..           | ..                  | ..          | ..                          | ..          | ..                          | ..  | ..            | ..             | ..              | ..              | ..              | ..                                  | ..  | ..                          |             |
| Chester Union Workhouse                         | ..                         | ..                                   | ..           | ..                  | ..          | ..                          | ..          | ..                          | ..  | ..            | ..             | ..              | ..              | ..              | ..                                  | ..  | ..                          |             |
| Hoole (less proportion not belonging to County) | 563                        | 650                                  | ..           | ..                  | 21          | ..                          | 97          | ..                          | 10  | 3             | 1              | 5               | 48              | 30              | ..                                  | 2   | ..                          |             |
| <b>RURAL DISTRICTS.</b>                         | <b>212007</b>              | <b>230706</b>                        | <b>68612</b> | <b>3.21</b>         | <b>6521</b> | <b>30.3</b>                 | <b>6547</b> | <b>16.0</b>                 | <b>917</b>                                | <b>464</b>    | <b>189</b>     | <b>162</b>      | <b>1056</b>     | <b>799</b>      | <b>187</b>                          | <b>400</b>                                    | <b>1.8</b>                  |             |
| Altrincham (now Buckham)                        | 13114                      | 14125                                | 14783        | 0.95                | 336         | 23.0                        | 181         | 12.8                        | 46  | 10            | 8              | 8               | 59              | 50              | 141                                 | 12  | 0.8                         |             |
| Altrincham                                      | 8320                       | 3702                                 | 14497        | 0.25                | 74          | 19.9                        | 39          | 10.5                        | 4   | 3             | ..             | ..              | 9               | 17              | 54                                  | 1   | 0.2                         |             |
| Lymm  | 3204                       | 8204                                 | 3270         | 0.98                | 208         | 24.1                        | 15.7        | 15.2                        | 25  | 11            | 4              | 5               | 56              | 56              | 120                                 | 7   | 0.8                         |             |
| Wilslow   | 4437                       | 4829                                 | 10475        | 0.18                | 103         | 23.3                        | 61          | 12.5                        | 5   | 2             | ..             | ..              | 13              | 28              | 109                                 | 5   | 1.0                         |             |
| Ashton-under-Lyne (now Tintwistle)              | 2576                       | 2680                                 | 13615        | 0.10                | 33          | 23.5                        | 35          | 13.3                        | 8   | 2             | ..             | ..              | 2               | 10              | 13                                  | 2.9   | 5                           |             |
| Chester   | 10080                      | 9418                                 | 8577         | 0.20                | 239         | 23.8                        | 134         | 14.2                        | 29  | 14            | 7              | 7               | 9               | 31              | 44                                  | 12  | 1.3                         |             |
| Congleton-Church Hulme                          | 3000                       | 3903                                 | 16212        | 0.20                | 130         | 48.0                        | 45          | 15.0                        | 6   | 2             | 2              | 2               | 16              | 17              | 46                                  | 2   | 0.6                         |             |
| Congleton                                       | 1131                       | 1131                                 | 7882         | 0.14                | 21          | 18.5                        | 14          | 12.3                        | 4   | 1             | 1              | 1               | 3               | 4               | 190                                 | 1   | 0.8                         |             |
| Sandbach  | 3374                       | 3757                                 | 17557        | 0.50                | 271         | 30.9                        | 167         | 19.0                        | 85  | 16            | 6              | 7               | 62              | 51              | 129                                 | 10  | 1.1                         |             |
| Drayton-Tittentley                              | 34                         | 34                                   | 1            | 0.03                | 1           | 29.3                        | ..          | ..                          | ..  | ..            | ..             | ..              | ..              | ..              | ..                                  | ..  | ..                          |             |
| Hayfield (now Disley)                           | 2260                       | 2260                                 | 2454         | 0.21                | 65          | 29.2                        | 35          | 15.4                        | 8   | 5             | ..             | ..              | 2               | 10              | 13                                  | 121   | 1                           |             |
| Macclesfield-Alderley                           | 2965                       | 3003                                 | 18223        | 0.22                | 79          | 26.3                        | 52          | 17.0                        | 10  | 9             | ..             | ..              | 2               | 10              | 13                                  | 121   | 1                           |             |
| Bollington                                      | 1846                       | 2282                                 | 7814         | 0.35                | 66          | 32.9                        | 57          | 19.8                        | 6   | 2             | 1              | 1               | 17              | 14              | 128                                 | 2   | 0.4                         |             |
| Gawsworth                                       | 1672                       | 2708                                 | 17883        | 0.15                | 71          | 26.2                        | 44          | 16.2                        | 7   | 1             | 3              | 4               | 21              | 16              | 90                                  | 5   | 1.7                         |             |
| Prestbury                                       | 4965                       | 5083                                 | 13667        | 0.35                | 148         | 29.4                        | 87          | 17.2                        | 14  | 2             | 3              | 6               | 44              | 15              | 38                                  | 3   | 1.1                         |             |
| Rainow  | 2917                       | 2138                                 | 14274        | 0.14                | 33          | 29.6                        | 35          | 16.4                        | 2   | 2             | ..             | ..              | 2               | 20              | 9                                   | 31  | 0                           |             |
| Button  | 1789                       | 1863                                 | 12954        | 0.13                | 94          | 18.8                        | 20          | 11.1                        | 2   | 1             | ..             | ..              | 8               | 9               | 59                                  | 0   | ..                          |             |
| Nantwich-Crewe                                  | 10863                      | 10830                                | 31145        | 0.34                | 222         | 25.9                        | 151         | 19.0                        | 35  | 9             | 7              | 15              | 38              | 47              | 119                                 | 16  | 1.4                         |             |
| Nantwich  | 3538                       | 3592                                 | 2100         | 0.16                | 48          | 24.4                        | 43          | 11.9                        | 7   | 3             | 1              | 1               | 15              | 14              | 79                                  | 2   | 0.5                         |             |
| Bunbury   | 3105                       | 3179                                 | 15845        | 0.20                | 101         | 31.7                        | 49          | 15.4                        | 9   | 1             | ..             | ..              | 1               | 11              | 27                                  | 89  | 0                           |             |
| Wrenbury  | 5597                       | 5984                                 | 30168        | 0.18                | 177         | 31.1                        | 70          | 13.9                        | 9   | 7             | 4              | 2               | 14              | 43              | 50                                  | 3   | 0.5                         |             |
| Northwich-Weaverham                             | 6060                       | 8613                                 | 17630        | 0.48                | 269         | 31.2                        | 131         | 15.2                        | 35  | 15            | 7              | 6               | 39              | 29              | 110                                 | 14  | 1.6                         |             |
| Northwich                                       | 7081                       | 3053                                 | 10891        | 0.76                | 320         | 38.3                        | 144         | 17.2                        | 49  | 21            | 9              | 11              | 52              | 22              | 151                                 | 22  | 2.6                         |             |
| Over  | 3083                       | 2994                                 | 12472        | 0.24                | 74          | 34.0                        | 41          | 19.3                        | 10  | 6             | 2              | 3               | 1               | 11              | 14                                  | 135   | 1                           |             |
| Middlewich                                      | 2294                       | 2294                                 | 13781        | 0.21                | 100         | 33.8                        | 30          | 16.2                        | 14  | 7             | 7              | 4               | 41              | 16              | 111                                 | 100   | 3                           |             |
| Runcorn-Budworth                                | 8332                       | 8654                                 | 21162        | 0.48                | 375         | 31.7                        | 141         | 16.2                        | 32  | 14            | 7              | 7               |                 |                 |                                     |   |                             |             |

















