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County Palatine of Chester.

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REPORT

OF THE

*Medical Officer of Health*

FOR THE YEAR 1893,

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,

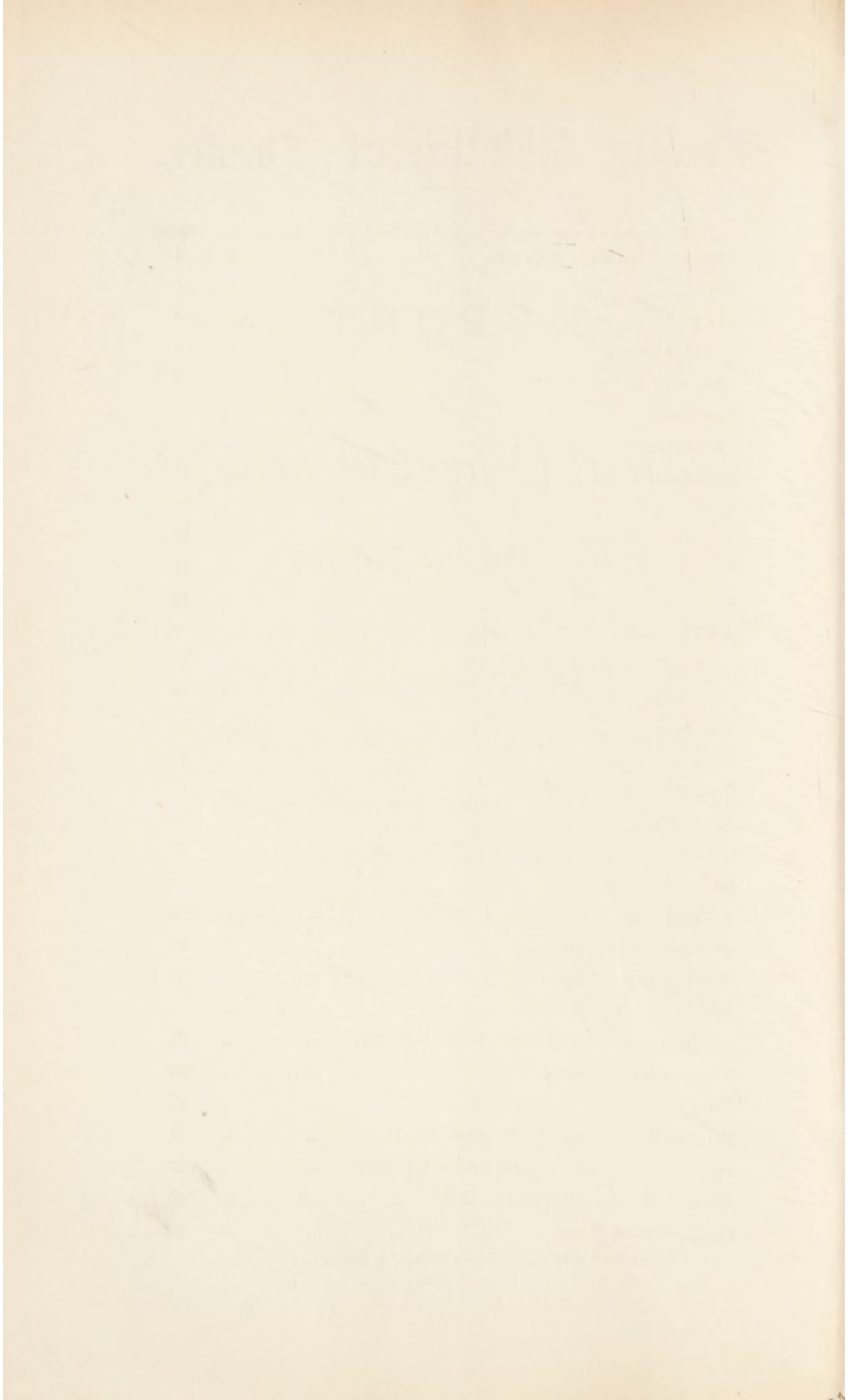
*July 13th, 1894.*

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CHESTER:

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Report of the Medical Officer of Health

For the Year ending December 31st, 1893.

# REPORT

OF THE

## Medical Officer of Health


*For the Year ending Dec. 31st, 1893.*

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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.*



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# Report of the Medical Officer of Health

For the Year ending December 31st, 1893.

**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/> 658233	<hr/> 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 Birken- head ...	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-divisions of County.	Urban Sanitary Districts.	Rural Sanitary Districts.
1	Wirral ...	Wallasey, Higher and Lower Bebington, Bromborough, Hoylake and West Kirby, Neston and Parkgate	Wirral, Birkenhead
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, Yeardsley - cum - Whaley	Macclesfield & part of Hayfield
9	Congleton ...	Congleton, Buglawton, Sandbach	Congleton



The areas of the 9 Sub-divisions of the Administrative County, the Census population, and persons per acre are as under :—

Sub-divisions of County.	Area in Acres.	Population Census, 1891.	Persons per Acre.
Western Sub-divisions—			
Wirral ... ..	50664	70357	1·38
Chester ... ..	120087	34605	0·28
Runcorn ... ..	50499	44711	0·88
Central Sub-divisions—			
Altrincham .. ..	75303	65460	0·86
Nortwich ... ..	62564	50278	0·80
Nantwich ... ..	101935	63132	0·61
Eastern Sub-divisions—			
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 1892 taken from the Nantwich Rural Sanitary District and added to the Tarvin Rural Sanitary District. Thus 5,617 acres and 1,401 population have been transferred from the Nantwich Sub-division to the Chester Sub-division.

The number of Urban Sanitary Districts in the Administrative County is 34—5 Municipal Boroughs and 29 other Urban Sanitary Districts. There are 11 Rural Sanitary Districts wholly within the Administrative County, and portions of 6 other Rural Sanitary Districts. The area and Census population of the 5 Municipal Boroughs taken together, of the other Urban Districts, and of the Rural Districts is as follows :—

	Area in Acres.	Population at Census.
5 Municipal Boroughs ...	14189	136989
29 other Urban Districts ...	66371	208095
11 entire Rural Districts and parts of 6 other Rural Districts }	565467	191560



This differs from the corresponding tabular statement presented in the Annual Report for 1892, as parts of Coppenhall Church, Shavington-cum-Gresty and Wistaston were, in 1892, taken from the Nantwich Rural Sanitary District and added to the Borough of Crewe. The Order effecting this change came into operation on November 9th, 1892. Thus 857 acres and 4,022 population have been transferred from the Rural Districts to the Municipal Boroughs.

The Census was taken in the first week of April, 1891, and for the Annual Report of 1893 an estimate is required of the population at midsummer, 1893. This estimate has been made for each District by the District Medical Officer of Health. The increase during the 2 years and 3 months is set down at 12,899. Thus in the middle of the year 1893 the population was 549,543. It was thus distributed:—

5 Municipal Boroughs ...	...	...	140426
29 other Urban Districts ...	...	...	215970
11 entire Rural Districts and parts of 6)	}	...	193147
other Rural Districts			

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 during the ten years 1881-91. Again, it will be observed that there has been a considerable falling off in the population of the Rural Sanitary Districts of Chester and Wirral since the Census. This is owing to 1,137 persons employed in making the Manchester Ship Canal in the Chester Rural District and 2,432 persons similarly employed in the Wirral Rural District having left the County since the completion of the Canal. It is estimated also that the population of the Runcorn Urban District is the same as at the Census, as many of the enumerated population were employes of the Manchester Ship Canal Company, and have since left the district.

The great difference in the density of population in the Sub-divisions of the County has already been noted. In the various Sanitary Districts it is yet more marked. Thus in Altrincham Urban District there were 19 persons to an acre, and in the Middlewich and Runcorn Urban



Districts 17 persons to an acre, whilst in two Urban Districts, Buglawton and Tarporley, there were more than two acres to a person. The persons to an acre in the 3 groups of Districts were:—

5 Municipal Boroughs	...	...	9.89 persons
29 other Urban Districts	...	...	3.25 „
11 entire Rural Districts and parts of 6 other 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 is not given, as no return has been received from Runcorn Urban District. The number of births registered in the remainder of the County was 15,629. The birth-rate for 96.3 per cent. of the County from which returns have been received was 29.5. In the Reports for 1892 no returns as to births were received from Higher Bebington, Runcorn, Tarporley, and the Cheshire portion of the Rural District of Hayfield. In the Reports for 1893 Runcorn is the only district not furnishing a return as to births.

The birth-rates per 1000 living were in some districts high, and in others very low. In the town of Northwich the birth-rate was upwards of 41 per 1000, and in the town of Middlewich upwards of 40 per 1000, whereas in Bowdon it was under 16 per 1000. In two of the small Rural Districts, Drayton and Birkenhead, the difference was even more striking. But in dealing with populations of less than 500, annual rates have little significance. The birth-rate in the Municipal Boroughs was 29.5, in the other Urban Districts 30.7, and in the Rural Districts 28.2. In the whole of England and Wales the birth-rate for 1893 was 30.8. This is slightly higher than the birth-rate in England and Wales in 1892, but 3.4 per cent. below the average in the ten years 1883-92.

**Deaths.**—The number of deaths registered in the Administrative County was 10,333. The natural increase of the population (excess of births over deaths) in the portion of the County sending in birth-returns was 5,823, *i.e.*, 563 in excess of the estimated increase for 1893. The death-rate for the County was 18.8. There is considerable difference in the death-rates of different districts. They range from 26.2 in the Urban District of Runcorn and 25 per 1000 in the Borough of Stalybridge to less than 8 per



1000 in the Cheshire portion of the Warrington Rural District, while in the Cheshire portion of Drayton there was no death. The death-rate in the Municipal Boroughs was 21·8, in the other Urban Districts 18·4, and in the Rural Districts 16·9. In the whole of England and Wales the death-rate for 1893 was 19·2, corresponding with the mean death-rate in the ten years 1883-92. The death-rate in the 33 great towns in the Kingdom (representing in the aggregate a population of 10,327,846) was 21·6. The death-rate in Cheshire during 1893 was therefore 0·4 below the death-rate of the whole country. The Cheshire death-rate 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 there are great differences. The proportion was very high in the South Werneth Sub-district of Stockport Union (300 per 1000), in Mottram (267 per 1000), and in the Borough of Hyde (235 per 1000), while in Yeardsley-cum-Whaley the proportion was very low (30 per 1000). In the Rural District of Birkenhead, the Cheshire portion of Drayton, and one of the Sub-districts of the Macclesfield Union there were no deaths of infants. The proportion in the Municipal Boroughs was 199, in the other Urban Districts 156, in the Rural Districts 130, and in the Administrative County 158. The proportion for the whole of England and Wales in 1893 was 159 per 1000, and in the 33 large towns 182 per 1000.

**Zymotic Diseases.**—The number of deaths registered in the County which were entered to one or other of the seven principal zymotic diseases was 1370. The death-rate per 1,000 living in the Municipal Boroughs was 3·6, in the other Urban Districts 2·4, in the Rural Districts 1·6, and in the Administrative County 2·4.

The death-rate for each of these seven 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:—

1893.	Death-rates per 1000 living		
	For Cheshire.	For the whole of England and Wales.	For the 33 large Towns of the Kingdom.
Small-pox ...	0·05	0·04	0·07
Measles ...	0·27	0·36	0·39
Scarlatina ...	0·25	0·23	0·30
Diphtheria ...	0·21	0·29	0·43
Whooping-cough	0·21	0·32	0·48
Fever ..	0·28	0·23	0·24
Diarrhœa ...	1·18	0·96	1·23
7 Zymotic Diseases	2·49	2·47	3·19

This shows that, as regards measles, diphtheria, and whooping-cough, the mortality in Cheshire compares favourably with the mortality in the whole country and in the large towns. The mortality in Cheshire from small-pox scarlatina, and diarrhœa is higher than in the whole country but lower than in the large towns. The mortality from fever in the County is also a little in excess.

The mortality from the seven zymotic diseases, taken together, was exceptionally high in the whole country in 1893. Thus this death-rate, which was 2·47 in 1893, was 1·90 and 2·0 in the preceding two years. Cheshire shared in the increase in this death-rate.

**Small-Pox.**—There were 312 cases of this disease notified in 1893 and 32 deaths. In 1892 the number of cases notified was 82, and the number of deaths was 8. Small-pox was therefore about four times as prevalent in 1893 as in 1892. The mortality in both years was about one in ten cases. The disease appeared in 18 Urban Districts, viz.:—Crewe, Hyde, Macclesfield, Stalybridge, Bredbury and Romiley, Cheadle and Gatley, Dukinfield, Hollingworth, Hoole (Workhouse), Lymm, Nantwich, Northwich, Runcorn, Sale, Sandbach, Wallasey, Wilmslow and Winsford; and in 8 Rural Districts, viz.—Altrincham, Congleton, Northwich, Runcorn, Stockport, Tarvin, Warrington, and Wirral. Of the whole



number 257 were removed to hospital, or occurred and were treated in workhouses, or the homes where they occurred were temporarily made into hospitals. It may therefore be said that 82 per cent. of the cases notified had the advantage of efficient isolation and skilled nursing—the remainder were less well isolated and nursed at home. When patients were left at home it was in nearly all cases owing to hospital accommodation not being available; in a few instances it was due to patients when notified being too ill to bear removal. 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, but the means so far as regards isolation accommodation, were in many instances absent or inadequate.

What occurred in the Urban and Rural Districts of Runcorn may be cited as instances of the results of not being fully prepared. In the Urban District the hospital provision made was insufficient, and in the Rural District the Authority had made no hospital provision. In the Urban District small-pox was present at the beginning of the year, and its prevalence so increased in January that the accommodation at the isolation hospital was found to be wholly inadequate. The Authority accordingly erected two large wooden buildings within the hospital grounds, which were utilized for convalescents. The hospital staff also was re-organised and augmented, and the Medical Officer of Health placed in temporary charge of the Hospital. Altogether there were 144 cases, of which 109 were treated in hospital, and the epidemic was not well under control till March. The District Medical Officer of Health is of opinion that more might have been done in limiting the spread of the disease had it not been for the prejudice at first against the hospital, and the disregard shown for the public safety by some persons in charge of patients who neither reported the disease nor called in medical aid. Still it cannot be doubted that had there been a hospital adequate in size, properly equipped and with an efficient staff, ready at the beginning of the outbreak, the disease would not have spread as it did. In the Rural District, also, small-pox was present at the beginning of the year. Navvies, working on the Ship Canal brought the disease into the district, and quite early it had shown itself in more than one Township. The Authority, however, had no hospital accommodation, and were quite unprepared to deal with the outbreak. The Warrington



Health Committee were appealed to, but they could not undertake to receive the Runcorn Rural Authority's cases into their hospital. Then the Ship Canal Company were asked if they would help, and at once lent the largest wooden building they had in the locality, and this was taken down and re-erected at Moore. Meanwhile a Special Committee had been formed, and a steam disinfecter was purchased. During this delay the disease was spreading, about 20 cases had occurred and several deaths, and other portions of the district were being invaded by the disease from different infective points. In January, a patient, being treated at home, became delirious and, eluding the vigilance of his tired-out watchers, with nothing on but his shirt, on a snowy, frosty night, made his way from Appleton nearly as far as Stretton, where he was stopped and brought back in a wheelbarrow, only to die of inflammation of the lungs. On February 6th the hospital was ready—two months at least after it was required. In three or four days the building was full and the question of possible enlargement was arising, but fortunately this was not needed. Altogether there were 56 cases, and though only about one-seventh of this number received no benefit from the hospital, many of the hospital cases were not admitted till weeks after they were reported owing to the building not being ready. Thus in the Runcorn Urban and Rural Districts alone occurred 200 cases of small-pox—nearly two-thirds of the number notified in the whole County. There were 12 deaths in the Urban District and 10 in the Rural, thus the small-pox mortality in these two districts was more than two-thirds of the small-pox mortality in the County.

Many other Districts were wholly without hospital provision like Runcorn Rural District, while some were inadequately provided as was Runcorn Urban District, and what happened in and around Runcorn in 1893 may happen elsewhere another year. It is therefore the duty of every Sanitary Authority to be provided with isolation accommodation. It is pleasing to contrast the unpreparedness at Runcorn with the preparedness at Hyde, where the Authority were not only able to isolate all the small-pox cases (7) occurring in their own District, but 43 other cases, viz.:—those occurring at Stalybridge, Bredbury and Romiley, Cheadle and Gatley, Dukinfield and Hollingworth. Having a good hospital ready Hyde succeeded in getting all the notified cases into it; though in one instance at least there seems to have been a strong prejudice to overcome, for a woman on being told she had small-pox escaped and hid in a public-house. However she was



found and taken care of, and eventually fined for exposing herself when in an infectious state.

It is interesting to note how often small-pox was introduced into a district by means of tramps or paupers, or canal boat people, or the inmates of common lodging houses. In Macclesfield Borough, out of 6 cases, 2 were tramps who arrived at the Workhouse, and 3 were inmates of common lodging houses. At Bredbury also, the disease was introduced by tramps. At Nantwich Urban District 2 cases out of 3 were tramps, and the third occurred on a canal boat. At Sandbach there was an out-break at a lodging house, and at Wallasey a case was reported on board a canal boat, while at Hoole the first case was a pauper in the Workhouse. The first case in the Altrincham Rural District was also a pauper in a Workhouse. Again, the disease was on two occasions brought into the Chester Rural District by a tramp, and the first of 2 cases in the Wirral Rural District was a lodger just off a three weeks' tramp. A canal boat brought the disease into the Northwich Rural District, and at Winsford 2 cases occurred in a living-van.

In some instances the mildness of the initial cases was the occasion of the spread of the disease. Thus in a detached house at Northenden the first case was mistaken for chicken-pox and not reported, and small-pox was communicated to the other 3 inmates of the house. Also at Hollingworth the two initial patients had a much modified form of the disease, and continued at work for nearly a week after the eruption commenced, and no medical aid was procured.

The local small-pox epidemic abated before the middle of the year, and very few cases were reported later than July.

Some brief memoranda are given of the cost to the Authority of cases of small-pox. In Crewe the entire cost of removing and treating 2 cases (including compensation paid for infected bedding, &c., destroyed) was £101. In Northwich Urban District the cost of isolating and treating a patient at his own house was £30, and the cost of treating two patients in a marquee was £35. The cost of dealing with the outbreak in the Runcorn Rural District is calculated to have been £1120, less £350, the present value of effects remaining. The particulars of expenditure not being furnished in detail, these memoranda are hardly comparable with each other, still they are worth calling attention to.



**Vaccination** is a subject on which the information supplied is less complete than it should be. After an out-break, and indeed after the occurrence of any single case, vaccination and re-vaccination seems generally to have been offered, and often effectually pressed. However in some districts few submitted to re-vaccination, especially at the first, and in one (Runcorn Rural District) re-vaccination was opposed, the most persistent opponent losing her husband and son-in-law from small-pox within a few days of each other. It is a great pity particulars are not given as to the vaccination of the 312 cases of small-pox notified. The Medical Officer of Health for Bredbury and Romiley furnishes a note as to the vaccination of the cases he reports, and a few other Medical Officers of Health refer to the matter, but particulars are not given as regards one in 25 of the notified cases. The exact truth as to the vaccination of every case of small-pox 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.

It is important to notice that vaccination or re-vaccination may be useful in modifying small-pox, even when done after the disease has been caught, as appears to have been the case with the nurse who, through a misunderstanding, was allowed on duty at the Hyde Hospital for a short time before re-vaccinated.

The Medical Officers of Health of two large Urban Districts give the Vaccination Returns for twelve months. In Dukinfield the return is not satisfactory—out of 513 children born, 156 were successfully vaccinated, and 254 were reported as “defaulters or cases not accounted for.” In Wallasey the return is very satisfactory—out of 1116 children born, 962 were successfully vaccinated, and only 22 were not found or in default.

**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 the Municipal Boroughs was 89, in the other Urban Districts 33, and in the Rural Districts 27—in all 149. More than two-thirds of the whole number of deaths occurred in 5 districts, viz., 37 in Crewe, 25 in Hyde, 25 in Stalybridge, 11 in Ashton-under-Lyne, and 9 in Dukinfield. The mortality for the County is certainly not high, still it indicates a considerable amount of sickness. Owing to the infectiousness of measles before the appearance of the eruption, it spreads readily, especially among school



children, and even if subject to notification would still not be much under control. Some cases occurring at Mottram appeared to show that infection must be carried in the air. At Tintwistle (Ashton-under-Lyne), the disease was so prevalent that with the Authority's sanction the schools were closed for several weeks, and the desired result was obtained. In Crewe measles was very prevalent from January to May, and letters were sent to those in charge of the Day Schools and Sunday Schools asking that no children from infected households should be allowed to attend school till they could do so with safety to their companions.

Measles would not be nearly as fatal as it commonly is if children affected were kept in bed from the earliest manifestation of the disease till after the disappearance of the eruption, and if they were never exposed to draughts or weather till quite recovered.

**Scarlatina**, sometimes called scarlet fever, is reported in all parts of the County in which notification of dangerous infectious disease is required; thus more is known of the incidence of scarlatina than of measles. In all 2950 cases were notified, out of which 310 (just over 10½ per cent.) were removed to hospital for treatment. That is to say—

In 5 Municipal Boroughs 495 cases were notified and 96 removed.

In 29 other Urban Districts 1234 cases were notified and 196 removed.

In 11 entire Rural Districts and parts of 6 other Rural Districts 1221 cases were notified and 18 removed.

Thus in the Municipal Boroughs 19·4 per cent. of the cases were removed, in the other Urban Districts 15·8 per cent. were removed, and in the Rural Districts only 1·4 per cent. were removed. The proportion of cases removed does not appear to depend so much on the need for removal as on the facilities afforded. In Hyde, where there is a good hospital, but much used for small-pox cases, about half the scarlatina cases were removed; in Altrincham where there is a suitable hospital, and no small-pox, 88 out of 99 scarlatina cases were removed; and in Northwich, where there is no hospital, there were 186 cases of scarlatina and none removed. Then in Rural Districts, where hospital accommodation is scanty and the means of transfer are often wanting, it is not surprising that very few cases indeed are removed. With compulsory notification and adequate hospital provision, scarlatina should be very



much under control. Even where the hospital accommodation is very limited, or where there is none, the Reports from many districts show that Medical Officers of Health may do a great deal in checking the spread of this disease. Isolation (more or less satisfactory), especially of the first cases, may be obtained; exposure during convalescence may be prevented, premises, clothing, &c., may be disinfected, children from infected families may be kept from school, schools may be closed, the sale of suspected milk may be prohibited, &c.

The influence of schools in the spread of scarlatina is noted by many Medical Officers of Health. In some districts printed bills were left at houses where cases occurred, intimating that the children should be kept from school and advising what precautions should be taken. At Crewe, also, those in charge of Day Schools and Sunday Schools were written to and asked not to allow the attendance of scholars from infected houses. At Macclesfield, where scarlatina was exceedingly prevalent (250 cases having been notified) printed bills were posted throughout the town recommending precautions against its spread, and the public schools were closed for a month. Schools were also closed for longer or shorter periods at Knutsford, Kingsley, Whitby, Norley, Hazel Grove, Malpas and Little Sutton. In the Reports from Mottram, Ashton-under-Lyne and Hazelgrove, specific instances are given of scarlatina being spread through patients, while "peeling," being permitted to attend school. However, there is danger at play as well as in school, and in Hollingworth scarlatina seems to have been spread by children from infected houses (who had been kept from school) playing with others.

At Macclesfield more might have been done in limiting the spread of the disease had the local hospital been available for isolating the early cases of scarlatina instead of being needed for smallpox; and at Hyde more of the scarlatina cases might have been removed, but for the sentimental objections to removal of some of the parents.

The number of deaths registered as scarlatina in the County was 142—that is 4·8 per cent. of the known cases of the disease. This is certainly a low percentage of deaths, and it must have been even lower, for all the deaths are recorded, but only a certain proportion of the cases are reported, as in five districts there is still no compulsory notification of infectious disease. Indeed the mildness of the type of scarlatina prevalent locally, in 1893, is remarked on by many of the district Medical Officers of Health, and



was probably the occasion of its being so widely spread, owing to the difficulty of recognizing many cases in their early stages. The experience at the Convalescent Home for Children, West Kirby, illustrates the difficulty of early diagnosis, for the disease was several times imported and it was at last found necessary to close the institution for some weeks.

**Diphtheria and Croup** are diseases which appear to be notified very irregularly. During the year, there were 395 cases of diphtheria reported and 116 deaths, while there were 35 cases of croup reported and 49 deaths. Fifteen of the diphtheria cases were removed to hospital and none of the croup cases. The deaths from diphtheria being nearly 30 per cent. of the cases reported, and there being more deaths from croup than cases reported, appears to indicate that many cases of both diseases were not notified.

No less than 317 of the cases of diphtheria reported were in seven districts, viz. : 62 in Hyde, 21 in Dukinfield, 24 in Hoylake and West Kirby, 36 in the town of Runcorn, 36 in Wallasey, 64 in Whitchurch, and 74 in Wirral, and very few districts escaped the disease altogether. About two-thirds of the whole number of cases were in towns, about one-third in the country.

The cause of diphtheria is a subject which has been much debated and on which there is considerable difference of opinion. For instance, one district Medical Officer of Health remarks "it is not supposed that outbreaks of diphtheria have any relation to bad sanitary states," and another notes that most of the cases that he reports seem to have been associated with accumulations of decaying refuse or privy contents. The view that outbreaks have no relation to bad sanitary states is, to say the least, unusual. Three or four observations made in the County tended to show that the poison of the disease remained active in cesspools, and was disseminated when these were emptied. In Sale the occurrence of diphtheria in two children was ascribed to effluvia from sewer ventilators, in Hayfield two cases appeared to be due to the bad condition of village drains. In the Altrincham Rural District a youth who had diphtheria attributed the disease to some very offensive manure he had been carting. At Hollingworth there seemed to be some relation between a fatal case and the abominable effluvium from blood in a state of decomposition thrown from a slaughter-house. At Wallasey, in 5 cases there were complaints of effluvia from sewer man-holes, and an outbreak of 7 cases (5 fatal) originated in a public school, where the privies were foul and offensive.



Whatever be the cause of diphtheria all are agreed as to its being communicable from person to person, therefore diphtheria patients should be segregated with as much care as scarlatina patients. Indeed it might be well to adopt the suggestion of the Medical Officer of Health for Dukinfield and prevent children from attending school even when suffering from seemingly simple sore-throat.

**Whooping-Cough** is not notified, and the extent of its prevalence must be gauged by the death record. There were 52 deaths in the Municipal Boroughs, 24 in the other Urban Districts, and 44 in the Rural Districts—in all 120. In 1892 the number of deaths from this cause in the County was 230. The death-rate from this cause in the County was 0·44 in 1892 and only 0·21 in 1893. But for the prevalence of the disease during part of the year in Stalybridge, Crewe and Hyde the death-rate would have been considerably lower. There is no doubt about the infectiousness of whooping-cough, or the need of keeping infected children from school.

**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, only two cases were notified, and there was one death. There were 564 cases of typhoid notified and 113 deaths. There were 202 cases of continued fever notified and 5 deaths. There were 46 cases of puerperal fever notified and 40 deaths. No case of relapsing fever was notified. It is evident from these figures that many cases (at least so far as puerperal fever is concerned) were not reported.

**Typhus.**—A case of this disease was notified at Runcorn, and another case was notified at Marple. At Runcorn the disease was imported into the town, and the patient was isolated as well as possible at her own home, where she made a good recovery. The case at Marple was imported from Manchester, and it also had to be treated at home. It proved fatal.

**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 the Municipal Boroughs there were 25 deaths from typhoid fever (yielding a death-rate of 0·17), and in the Rural Districts there were 31 deaths from typhoid and 4 from continued fever (together yielding a death-rate of 0·18).



The mortality was therefore not high in the Boroughs or Rural Districts. In the other Urban Districts it was high, for there were 57 deaths from typhoid fever and one death from continued fever (together yielding a death-rate of 0.26). Of these 58 deaths 19 occurred in Runcorn and 23 in Wallasey. Thus the typhoid death-rate was 0.94 in Runcorn and 0.64 in Wallasey. It is curious that in these two towns the typhoid death-rate was exceptionally high in 1892.

Of the 202 cases notified as continued fever 142 were at Runcorn, and the Medical Officer of Health mentions that those proving fatal (with one exception) were certified as dying from typhoid fever. He cannot undertake to discriminate between the two terms—under one or other name 224 cases of fever were reported and a considerable number were in single cottages, ill-ventilated and usually over-crowded. As regards the typhoid fever at Wallasey, the Medical Officer of Health states that the warm weather, extending from February to October, had almost certainly an important bearing on the numerous cases, and that the diminished rainfall contributed to the result. He gives notes of three out-breaks, and points out the necessity of efficiently disinfecting typhoid excretions.

Various causes are assigned for cases, of which three or four may be instanced. At both Hollingworth and Ashton-under-Lyne a patient appeared to have caught the disease through being in close proximity to privies, into which typhoid excreta had been emptied. A local outbreak at Middlewich is attributed to a contaminated water supply. At Sale a child who caught the disease had been playing about a recently-opened drain. At Handforth a fatal case in a young child was supposed to have arisen from effluvia inhaled from a grave which was opened for the purpose of interring another child.

Out of the 563 cases of typhoid fever 98 (*i.e.*, 17 per cent.) were removed to hospital. However removal to hospital is not as necessary in dealing with typhoid fever cases as it is in dealing with directly infectious diseases, such as small-pox and typhus. As regards typhoid fever perhaps the most important matter is the thorough disinfection of the excreta. At Crewe special precautions are taken—zinc pails, with tightly fitting covers, charged with peat, are sent to houses (not having W.C.'s) where typhoid fever is notified; disinfectants are also given and instructions as to their use.

The Medical Officer of Health for Tarvin, reporting on the typhoid fever in this district, points out that Sanitary



Authorities should have powers enabling them to provide nurses. It must frequently happen, he says, that in districts where the population is scattered, hospital accommodation is remote and all that is wanted is a nurse or nurses. The sick are not paupers and in no particular need of anything but personal attendance. In one case a woman on the verge of her confinement had to nurse her husband through an attack of typhoid fever, while in another cottage the typhoid patient was delirious and his wife (worn out with nursing) was ill able to restrain him; yet there was no power to adopt the simple expedient of sending in a nurse at the cost of the Sanitary Authority.

**Puerperal Fever** caused 15 deaths in the Municipal Boroughs, 15 in the other Urban Districts and 10 in the Rural Districts. Comparatively few cases appear to be notified, and often the first intimation the Medical Officer of Health has of a case is after the death of the patient. A fatal case occurred at Hazelgrove through the patient having injudiciously visited a case of scarlatina the day previous to her confinement. Indeed the disease is not infrequently related to scarlatina and erysipelas; and the insanitary conditions favourable to typhoid fever are favourable to puerperal fever. Something might be done to limit the spread of this disease if Medical Officers of Health received early notice of every case, and if all midwives were properly trained and made subject to a few simple regulations.

**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. 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 254 deaths ascribed to diarrhœa, in the other Urban Districts 273 deaths, and in the Rural Districts 125 deaths. Out of the 652 deaths 566 were of children under five years of age. The greatest number of deaths were notified at Runcorn (87), at Crewe (84) and at Hyde (65). In these three towns the diarrhœa death-rates were respectively 4·33, 2·37 and 2·08.

A large proportion of the deaths from diarrhœa were registered in the summer and autumn. The exceptional prevalence of the disease is generally ascribed to the drought and the prolonged period of hot weather, coupled with defective sanitary conditions. In Macclesfield the Medical Officer of Health notes that the disease was markedly



fatal in the worst-drained parts of the town, and he quotes Dr. Ballard's observation that "the cause of infantile diarrhoea resides ordinarily in the superficial layers of the earth." The Medical Officer of Health for Hollingworth draws attention to the effect of high temperature in favouring early putrefactive changes in food, changes assisted by uncleanness and often affecting the food of bottle-fed infants.

**Cholera.**—A case of this disease was reported at Weston, in the Runcorn Rural District, but investigation showed that it was only what is called "cholera nostras." At Hoole a death from the disease was reported, but it was only infantile cholera, and might just as well have been certified as infantile diarrhoea.

In August a man came to Bredbury from Antwerp, where cholera was then epidemic. Advice was sent on from Hull when he landed, and the man was for some time kept under observation.

**Precautions against Cholera.**—It is mentioned that a deputation from the Runcorn Rural Sanitary Authority attended a meeting at Liverpool to arrange for conjoint action on the part of the local Port Sanitary Authorities in the event of an invasion of cholera. In August the Altrincham Rural Sanitary Authority issued a Report, dealing with all essential precautionary measures with respect to cholera.

In June, Dr. Wilson, one of the Medical Inspectors of the Local Government Board, visited Stalybridge, and made a sanitary survey. Afterwards he attended a meeting of the General Purposes Committee and recommended certain measures, with a view to dealing with cholera and other infectious diseases. He appears to have recommended the provision of a hospital for infectious diseases, an improved system for the disposal of refuse and excreta, and that action should be taken under the Housing of the Working Classes Act, 1890.

**Erysipelas** is notified, but not as regularly as some infectious diseases. In the Municipal Boroughs there were 20 cases notified and five deaths, in the other Urban Districts 247 cases notified and 16 deaths, and in the Rural Districts 91 cases notified and 6 deaths. Of the cases reported 10 were treated in hospital. This disease is undoubtedly associated with insanitary conditions, and any premises on which it appears should be most carefully inspected.



**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 Buglawton, Marple and Wallasey the disease was epidemic at the beginning of the year and at the end, in Dukinfield it commenced in June, and in Crewe, Hyde, Macclesfield, Altrincham, Bowden, Chorley, Hollingworth, Mottram, Sale, Yeardsley and Whaley, and Ashton-under Lyne, it prevailed with more or less severity at the close of the year. Cases of influenza are also referred to at Higher Bebington, Hoylake and West Kirby, Wilmslow and the Rural Districts of Runcorn. On the whole the type of the malady appears to have been milder than in previous years, still it is stated that 36 deaths were directly due to it, and a great many of the large number of deaths ascribed to acute diseases of the lungs appear to have been indirectly the result of attacks of influenza. An attack of influenza often leaves the patient exceedingly weak and is not uncommonly followed by inflammation of the lungs to which he succumbs. Thus in Sale though influenza was only directly fatal in 5 cases, the Medical Officer of Health reports that it was mainly instrumental in raising the death rate from 8.8 in the third quarter to 16.8 in the fourth quarter.

**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 9 deaths ascribed to this cause in the Municipal Boroughs, 14 in the other Urban Districts, and 14 in the Rural Districts. 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 Boroughs phthisis was certified as the cause of death in 206 cases; in the other Urban Districts it was certified as causing 273 deaths, and in the Rural Districts as causing 211 deaths. In the Municipal Boroughs the death-rate was 1.46; in the other Urban Districts the death rate was 1.26, and in the Rural Districts the death-rate was 1.09. These are fairly high death-rates for one disease, though all three are a little below the corresponding rates in 1892. High phthisis



death-rates were returned from the following towns in 1893:—Macclesfield, 1·88; Altrincham, 1·80; Dukinfield, 1·80; Stalybridge, 1·68; and Wallasey, 1·66.

The infectiousness of phthisis being generally admitted the propriety of including it in the list of diseases required to be notified has been much debated, and towards the close of the year 1893 the Cheshire County Council recommended the Sanitary Authorities in the County who had adopted the Infectious Diseases (Notification) Act to pass resolutions extending the interpretation of infectious diseases in this Act so as to include phthisis. The recommendation was brought before the various Authorities for consideration at the end of 1893 or early in 1894, and in some Districts phthisis would be now subject to notification had not the Local Government Board declined to sanction phthisis being added to the list of infectious diseases to which the Act applies.

The Medical Officer of Health for Whitchurch expresses cordial appreciation of the action taken by the Authority in endeavouring to include phthisis among notifiable diseases. The Medical Officer of Health of the Altrincham Rural Authority states that he has long believed phthisis to be infectious. The Medical Officer of Health for Bowdon points out that phthisical visitors are attracted there and to contiguous districts by the Consumption Hospital, but that there is also an increase of tuberculous affections among permanent residents, which need not occasion wonder considering the infectious nature of tuberculosis, and its easy transmission in dust, especially by means of phthisical sputa. The Medical Officer of Health for Crewe has issued a circular of general rules and precautions with his Report, to be sent to those suffering from phthisis coming under his notice.

In the Reports from three of the towns showing high phthisis death rates, there is naturally some reference to the subject. The Medical Officer of Health for Macclesfield reprints a Special Report, presented by him to the Health Committee, in reference to the recommendation of the County Council to add phthisis to the list of notifiable diseases. The Medical Officer of Health for Altrincham refers to the high death rate from phthisis (2·37) in 1892. He regards it as quite exceptional, and adds that practitioners in the town believe that a considerable number of the cases are sent to Altrincham from other districts owing to the suitability of the climate for chest diseases generally. The Medical Officer of Health for Dukinfield remarks that although the employment of workpeople in cotton-mills,



coal-pits and spindle-works is rather favourable to the development of this disease, the phthisis death-rate in the district should be much lower. Patients should be isolated as far as possible and have their rooms well disinfected.

**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 1893 than in 1892. In the Municipal Boroughs 697 deaths (equal to a death-rate of 4.96) were due to these causes; in the other Urban Districts 723 deaths (equal to a death-rate of 3.34) were due to these causes; and in the Rural Districts 571 deaths (equal to a death-rate of 2.95) were due to these causes. This shows 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 highest death-rates from these causes appear to have been in the towns of Stalybridge (6.64), Dukinfield (6.38) and Hyde (5.65).

**Heart Disease.**—The mortality under this heading also was considerably less in 1893 than in 1892. In the Municipal Boroughs 238 deaths (equal to a death-rate of 1.69) were due to heart disease; in the other Urban Districts 263 deaths (equal to a death-rate of 1.21) were due to heart disease; and in the Rural Districts 255 deaths (equal to a death-rate of 1.32) were due to heart disease.

**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 52 deaths (equal to a death-rate of 0.37) were due to injuries; in the other Urban Districts 118 deaths (equal to a death-rate of 0.54) were due to injuries; and in the Rural Districts 93 deaths (equal to a death-rate of 0.48) were due to injuries. These are not high death-rates. In the town of Runcorn the number of deaths from injuries was 31, which is equal to the high death-rate of 1.54. Most of the deaths from injuries were, of course, due to accident, but the proportion is not stated.

**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, add any other infectious disease, either temporarily or permanently, to this list.

At the close of the year 1892, all but 6 of the Local Sanitary Authorities in the County had adopted this Act. In February, 1893, the Mottram Urban Sanitary Authority adopted the Act. Thus there remain but 5 Local Sanitary Authorities which have not yet adopted the Act, viz. :—

Congleton Municipal Boro.'

Crewe Municipal Boro.'

Marple Urban S. A.

Yeardsley-cum-Whaley Urban S. A.

Nantwich Rural S. A.

The Medical Officers of Health who advise these Authorities are (with possibly one exception) favourable to the adoption of the Act. At Congleton the Medical Officer of Health has on three occasions urged his Authority to adopt the Act, but it has been decided not to do so by a large majority. He still hopes the decision come to will be reconsidered. 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, and that phthisis be added to the list of diseases to be notified. The Medical Officer of Health for Marple regrets that his Authority have not seen fit to adopt the Act. The Medical Officer of Health for Yeardsley-cum-Whaley remarks, that owing to the Act not being adopted, the only case of zymotic disease proving fatal in the district, was not reported to him till a month after its occurrence. The Medical Officer of Health for the Nantwich Rural District believes that in districts which have adopted the Act, the mortality from scarlatina is greater than in the Nantwich Rural District. He is not in favour of adding phthisis to the list of diseases to be notified.

At Stalybridge, on September 11th, it was resolved that the provisions of the Act in the Borough should apply to choleraic diarrhœa (including diarrhœa) till October 31st,



and in consequence 96 cases of diarrhœa were notified. At Dukinfield, at one time, medical practitioners were requested to notify all severe cases of diarrhœa, but only a single case was notified.

At Chorley, in the course of the year, the Local Board added measles to the list of infectious diseases to be notified. The Medical Officer of Health for the Warrington Rural District thinks measles should be subject to compulsory notification, and the Medical Officer of Health for Bredbury and Romiley recommends that both measles and whooping-cough should be subject to compulsory notification. At Bollington, the Medical Officer of Health reports that he advised the Local Board to include measles and phthisis in the list of infectious diseases to be notified, and a resolution to this effect was proposed and seconded at a meeting of the Board on January 4th, 1894, but was lost by one vote. At Winsford and at the Altrincham Rural District, the Medical Officer of Health advised the Authorities to make chicken-pox notifiable temporarily, and they did so. Accordingly 8 cases of chicken-pox were notified at Winsford and 2 in Altrincham Rural District—2 were also notified in the town of Northwich. Certain cases of small-pox had been mistaken for chicken-pox, and this led to the proposal that the latter should be subject to compulsory notification. The Medical Officer of Health for these districts questions the usefulness of notification, and objects strongly to erysipelas having been included in the list in the Act.

The Medical Officer of Health for Drayton suggests that every notifier should sign a declaration that he had promptly given all apparently needful instructions.

**Hospitals for Infectious Diseases.**—As far as the Medical Officer of Health has been able to ascertain, the Hospital accommodation in the Administrative County for the isolation and treatment of cases of infectious disease is as follows:—

- Altrincham.—Lloyd's Fever Hospital.
- Altrincham Rural Authority.—A marquee, and a cottage used as a temporary hospital.
- Congleton Borough.—Cottages set apart as a Hospital for small-pox.
- Congleton Rural Authority's Hospital at Arclid.
- Crewe Borough Hospital for small-pox.
- Hyde Corporation Hospital.
- Lymm.—Hospital extemporized for small-pox.
- Macclesfield.—Small "Ducker Hospital."



Northwich.—A marquee provided and a large room hired.

Northwich Rural Authority.—5 small houses made into temporary hospital.

Runcorn Commissioners' Hospital.

Runcorn Rural Authority.—Temporary wooden erection lent by the Ship Canal Company.

Wallasey.—Mill Lane Hospital.

Warrington.—Hospital extemporized in a hut belonging to the Ship Canal Company.

Winsford.—Temporary wooden erection.

Wirral Joint Hospital at Greasby.

Wirral Joint Hospital at Spital.

There is also the small Isolation Hospital at Bromborough, solely for the use of those belonging to the Bromborough Works; and the Wrexham Joint Hospital, which is available for the small portion of the Wrexham Rural Sanitary District in Cheshire. This is the complete list, omitting nothing. How singularly inadequate the provision is to meet the requirements of an area with a population of about 550,000, must be obvious. And the provision is even more inadequate than it looks on paper. The accommodation in more than one of the so-called hospitals on the list is but two beds, some are not kept in readiness when patients leave, some though in use during 1893 may have since been abandoned, pulled down or let as cottage-dwellings. Without disparaging in the least the efforts of those who have done their best to make provision in an emergency, perhaps it is not beyond the truth to say that out of the above list only the Hospitals belonging to Hyde, Wallasey and Wirral are really efficient, having been built as hospitals, being large enough, well equipped and always open.

In 1893 there were 4,863 cases of infectious disease notified, and only 690 (14.1 per cent.) received hospital treatment of any kind. Patients are sent to Chester Infirmary, Stockport Borough Hospital, Warrington Hospital and Monksall Hospital, and several are treated at various Workhouses, still 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 Sanitary Authority has not done all that was practicable for preventing the spread of infectious disease.



Further provision for the isolation of the infectious sick is certainly needed.

In many of the Reports are references to hospital requirements, and statements as to what has been done or is under consideration. For instance, there was a meeting at Stockport of the representatives of the Stockport Rural District, Hayfield, New Mills, Marple, and Bredbury and Romiley, to consider the desirability of erecting a joint-hospital for the reception of patients from these districts, but eventually the matter was referred for the consideration of the various Authorities. At Chorley and Gatley Hospital provision was discussed, but nothing done. The Medical Officer of Health for Dukinfield suggests that his Authority should jointly provide a hospital with Stalybridge. The Medical Officer of Health for the Altrincham Rural Districts states that a Hospital should be provided for Knutsford and the combined townships of Timperley, Hale, Dunham Massey, and Ashton-on-Mersey. The Medical Officer of Health for Bowdon suggests that the requirements of Bowdon, Altrincham (town), Hale, and Dunham Massey should be jointly provided for. The Medical Officers of Health for Nantwich refers to contemplated arrangements for joint provision by the Nantwich Urban and Rural Authorities. The Medical Officer of Health for Wilmslow presses on the attention of his Authority the need of accommodation, and the Medical Officer of Health for Warrington states that a Hospital for infectious cases is a principal requirement of the district. The Medical Officer of Health for the small Rural District of Birkenhead suggests that some arrangement should be made giving the Authority the right to use some Hospital not too far off. Thus the question of Hospital provision has been brought forward and discussed in many districts which have as yet provided no Hospital.

Now as regards districts where there is already some Hospital accommodation, and where it is to be increased or improved. The Medical Officer of Health for Crewe Borough appreciates the advantage of having a small-pox Hospital, with space for 10 beds, horse ambulance, &c., but draws attention to the need of accommodation for other infectious diseases, especially scarlatina. A Sub-Committee have the question of further provision under consideration. The Medical Officer of Health for Macclesfield Borough states that the provision of better accommodation will soon become urgent, as the present temporary building is fast becoming dilapidated and cannot wear much longer. The Medical Officer of Health for Wallasey reports that his



Hospital was of the greatest service during the year, and that the new pavilion (to provide 12 additional beds) will soon be ready. The Medical Officer of Health for the Congleton Rural District reports that the disused building converted into a Hospital was ready on February 27th, and that it provides 10 beds. The little wooden building erected by the Winsford Local Board in April, and which provides 2 beds for the treatment of small-pox cases, is to be extended in 1894, so as to provide 2 wards having 2 beds each. The Medical Officer of Health for the Runcorn Rural District states that his Authority have definitely decided to build a permanent Hospital, and are at present engaged selecting a site.

The Medical Officer of Health for Congleton Borough draws attention to a nuisance from a foul ditch (receiving the contents of a number of privies) close to the Authority's Hospital.

The Medical Officer of Health for Wirral reports that the Greasby Hospital has been taken over by the Joint Hospital Board, who pay rent for it, and have been using it specially for small-pox. He states that the old wooden Hospital at Ellesmere Port was sold by the Joint Hospital Board, and shortly afterwards was burnt to the ground.

**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 or 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 in the Isolation Hospitals Act. The Clerk of the County Council has recently issued a summary of this Act—the Council will therefore be generally familiar with its provisions, and no doubt steps will be taken in due course for the exercise of the extensive powers thus entrusted to them for augmenting the means at present available for dealing with outbreaks of infectious disease.

**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 family who have been compelled to leave their houses to enable them to be disinfected by the Authority.

In the Report for the Borough of Crewe it is stated that this Act has been adopted. In the last Annual Report it was stated that the Chester Rural Authority had adopted the Act. Nothing is stated as 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 the times for removal through the streets of offensive matter, and as to the 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 also adopted by the Chester Rural Authority towards the end of 1892. In the Northwich Urban District it appears to be in force.



**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 any 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, and the Surveyor is now engaged on works under the Act. Nothing is stated as to the Act having been 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 1892-3. From Crewe it is reported that the Corporation have sanctioned the purchase of a steam disinfector for £300, and have applied to the Local Government Board for permission to borrow this sum. It is proposed to erect the apparatus on ground



adjoining the sewage farm pumping station, from which steam will be supplied. The Medical Officers of Health for Bollington, Dukinfield and Sale point out the need of such an apparatus.

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. At Hyde the ambulance waggon is used for carrying the bedding, clothing, &c., and at Sale an ambulance waggon is the only vehicle they have for sending bedding, clothing &c., to be disinfected at Manchester. The Medical Officers of Health for both towns request that suitable vans may be provided.

**Systematic Inspection.**—Probably the Inspector's first duty is 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 "nuisances," 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, is 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 or 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 the nuisances entered in 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. One of the Sanitary Inspectors points out that obtaining the abatement of a nuisance is often greatly delayed through owners and agents having arrangements with dilatory tradesmen, who when notices are forwarded to them to carry out the necessary work allow the matter to stand over till the last moment. This occurs especially in connection with cottage property, causing much unnecessary inconvenience to the tenants, and trouble to the Inspector.

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

**Examination of Houses.**—What might almost be described as “a new departure” has been taken at Crewe. In November last public notice was given that any person might have his house examined as to its sanitary condition, free of charge, upon making application to the Sanitary Department, and it is reported that already several persons have taken advantage of the offer. The Medical Officer of Health explains that his object in issuing the notice was principally to enable new-comers to the town to be made acquainted with the condition of any house they might contemplate taking.

Occasionally examining houses for incoming tenants is of course not unusual in many Districts; but announcing that anyone may have his house examined free, is open to two objections—(1) it may throw so much additional work on the Inspectors as to interfere with the proper



performance of their multifarious duties, or (2) it may be regarded as competing with the practice of local surveyors, part of whose ordinary business it may be to examine houses for the detection of sanitary defects. However it is quite possible the experiment may prove a success, and if so it will doubtless be tried in other Districts

**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 1893--in Wallasey alone there were 135. 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. Indeed the Medical Officer of Health for the Runcorn Urban District seriously proposes that his Authority should institute an examination into the merits of the various kinds of closets and recommend one.

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. In the Borough of Congleton a plan is being tried of charging each pail with sufficient peat dust to absorb moisture and deodorise the contents, and adding sulphuric acid enough to disinfect the whole when the pail is full. So far it answers well, and it is believed will increase the value of the pail-contents for agricultural purposes. Cess-pools 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 Health for Wallasey reports that under the contract now in force, the emptying is being done every six weeks, but to insure the contract being carried out, it has been necessary to appoint an Inspector whose sole duty is to attend to 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 several 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) £106 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, including about 1800 privy pails and about 3000 compound middens, or "mixens," the cost of emptying is found to work out to 1/4½ per head. This is not too much provided the work is well done. It appears to be well supervised—the carts for carrying dry ashes as well as the night soil carts are covered—the comfort of the nightmen is also considered, and they are provided with hot coffee or bovril.

Another duty of the Authority in reference to refuse removal is arranging that the tips they provide are in suitable situations, sufficiently remote from inhabited houses, and that tipping on land to be used for building purposes be strictly prohibited. At Mottram, Marple, Bredbury and Romiley, &c., new tips have been recently provided.

**"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 thrown into a mortar-mill and ground, taking the place in the mortar of clean sand. Any iron waste found with the slag is sorted out and finds a ready market.

At the Borough of Hyde one of these destructors was erected towards the close of 1892, on a site adjoining the sewage works. The Medical Officer of Health has now had some experience with it and recognizes its usefulness. He reports that the provision of a destructor, considered in connection with the emptying of privy middens, now undertaken by the Corporation, insures the destruction of a large quantity of noxious matter, formerly very difficult to deal with in a satisfactory manner. In 1892 Wallasey decided to erect a destructor, but at the close of 1893 the report was only that the erection was soon to be commenced. Frequent complaints of nuisance from some tips, should induce the Authority to proceed with the work. A Committee from the Borough of Crewe have been visiting towns in which destructors are in operation. Rochdale, Halifax,



Bradford, Leeds and Huddersfield were visited, where destructors of various types were inspected; and experiments are now being carried on at the pumping station. The Medical Officer of Health for Dukinfield again advises his Authority to provide a destructor.

**Sewering.**—The work of draining and sewerage has been carried forward in almost every part of the County during 1893. At Crewe a large portion of the town discharges its sewage into one or other of the main outfalls (northern and southern) which themselves are emptied on the sewage farm at the pumping-station; and works now being proceeded with will connect also a large district in the newly-added area of Sydney and Coppenhall. At Hyde the new sewage works were completed and opened, rendering the Hyde effluent practically innocuous. At Bredbury and Romiley two separate undertakings are in hand to provide main drainage. At Cheadle and Gatley 5581 yards of public sewers were laid and completed. At Dukinfield negotiations are still going on as regards a complete sewage scheme for the district. At Hoylake and West Kirby 300 yards of public sewer were laid. In 1892 it was reported that, with the exception of Heatley, the district of Lymm was provided with an efficient system of sewers. The work of sewerage Heatley has now been achieved. The District system of sewers has an outfall comprising  $15\frac{3}{4}$  acres of land yielding 74 tons of osiers. At Marple a decision has been arrived at to extend the sewers to parts of the district not at present included in the system, and to enclose land for dealing with the sewage. The new sewers are to extend from Rose Hill to Hawk Green and Spring Bank. Plans have been prepared and await the sanction of the Local Government Board. Neston and Parkgate are generally well-sewered, and 150 yards of sewer have been added during the year. Little Neston is partially sewerage, and works are in hand for completing its sewerage. At Northwich 400 yards of sewers have been laid, and a sewage tank on sewage land (where there has been a subsidence) has been raised 3 ft. At Sale considerable progress has been made with the new sewage scheme. At Sandbach the outfall sewer and two outlying districts have been occupying the attention of the Board, and an eminent engineer has been consulted. A section of the sewerage of Tarporley has been completed during the year. At Wallasey much has been done to improve the sewers—many being entirely relaid, others partly relaid. At Wilmslow no progress seems to have been made, but it is reported that there is a probability of the Northern drainage scheme being soon begun.



The Report from Yeardsley-cum-Whaley states that improvements have been made in the drainage of Whaley Bridge, but no steps have been taken for dealing with the sewage of the whole district.

In the Rural Districts, also, sewerage and sewage works seem to have full attention, but much remains to be done. In the Chester Rural District, at Elton 150 yards have been laid in extension of the existing sewers. Considerable difficulty has been experienced with the sewer at Newton in the same Rural District. It requires to be relaid where it passes through ground belonging to the Joint Railway Company, who have made difficulties about access. The drainage of Christleton too is still under consideration, it being difficult to find a suitable outfall. Steps are being taken to deal with the sewage outfall at Eccleston and Eaton. Plans have been prepared, also, for the sewerage of Boughton Heath, and application made to the Chester Corporation for permission to drain into the city sewers. In the Hayfield Rural District, plans for a sewage scheme for Disley are being prepared. At present the outlet is into a stream running through the village. The drainage of 17 houses in a terrace in the village has also been relaid. In the Runcorn Rural District, the sewerage extensions, necessitated by the erection of new property at Appleton, have been carried out, and a further extension is contemplated. At Moore, belonging to the same Rural District, a satisfactory extension of sewers has been carried out in Moss Lane. In the Stockport Rural District, 35 yards of sewer were laid at Handforth and 52 yards at Hazelgrove. In the Wirral Rural District, great improvements have been effected at Prenton, Irby and Moreton in replacing sewage ditches with sewers.

**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 Northwich all main sewers are periodically flushed, and at Lymm periodical attention is given to flushing. At Hoole flushing is done regularly; at Bromborough it is done every week. In the District of Hoylake and West Kirby the difficult Lang sewer is flushed twice a week, other sewers are done weekly in the summer and fortnightly in the winter. At Chorley the Local Board have decided to put down three automatic flushing tanks. Special attention



is given to the subject in Runcorn (town), but at present only a portion of the intercepting sewer is flushed. In the Wirral District the sewers at Eastham are flushed fortnightly, and the sewers at Heswall and Ellesmere Port are flushed monthly. At Wallasey the systematic flushing of drains and sewers is carried on throughout the year. The flushing-gangs are instructed to visit every house twice a year. The quantity of water used for flushing in the District during 1893, by the hose or through automatic sewer flushers, was 12,689,381 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, where complaints of this kind are not unusual, the illness of two children who had diphtheria was attributed to effluvia from sewer ventilators. In consequence of the drought the nuisance was worse in 1893, and was mitigated by placing baskets of "polarite" in the man-holes. At Crewe, beside the ventilators delivering at the street level, shafts are run up the gable-ends of buildings or placed in other suitable positions. The shafts are found to work well and it is recommended that their number be increased. Providing additional ventilators which deliver at a high level is a great advantage, as if there are enough of them the ventilators at the street level will ordinarily act as inlets.

**Pollution of Rivers.**—A few notes from some of the Reports refer to this, and are not unimportant. At the Borough of Congleton three of the houses in which typhoid fever occurred were situated close to the river Dane, which for a long time, during the dry weather, was in a most offensive state for a distance of 150 to 200 yards, a little below where the sewage enters the river. A fatal case of typhoid fever at Northenden, in the Altrincham Rural District, was ascribed to the abominable state of the river contiguous (the Mersey). The Medical Officer of Health for Bowdon states that the river Bollin is so filthy that as it flows it poisons the air. From Dukinfield comes the report that the river 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 different industries—cotton mills, iron works, hat works, dye works and dry soap works. In the Hayfield District, the drainage from Drake Carr and houses in that neighbourhood pollute a stream



which runs into a reservoir belonging to the Stockport District Water Works Company.

**The Rivers Pollution Prevention Act, 1893.**—It may be well here to draw attention to an Act passed in July, 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 1893, in closing houses unfit for habitation or rendering them habitable. From Hyde comes the report that some progress has been made in altering insanitary property with a view to its improvement, but two very bad properties, before referred to, are still untouched in the way recommended. In the Stalybridge Report a list of 17 properties is given, which were in a bad sanitary condition and have been put into proper order, under the direction of the Borough Surveyor. At Marple 4 dilapidated cottages were taken down and re-built, and 6 other cottages were demolished as unfit for habitation. A group of small houses, known as Zion Place, in the town of Runcorn, were so ill-drained that the soil beneath and around them became sewage-soaked. Thirteen cases of fever were notified here in 1893, and the property was certified as unfit for habitation and after the close of the year shut up by magisterial order. In the Macclesfield Rural District, 3 houses unfit for habitation were vacated without service of notice, and will not be re-occupied. At Hazlegrove one house was condemned as unsafe.

One of the difficult problems Sanitary Authorities and their advisers are called on to solve, as the Medical Officer of Health for Whitchurch points out, is how to act with reference to rural cottages which in construction and environment are scarcely healthy dwellings, and yet which can neither be put in good order nor condemned.

**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 7 cases were investigated and dealt with. In Whitchurch it is stated that there is not much gross overcrowding, though



it is often found that the air-space per person in cottages is insufficient. Perhaps there is more overcrowding in the town of Northwich than elsewhere. Owing to commercial activity the District has been called upon almost suddenly to accommodate many more than there is house-room for. However the Medical Officer of Health is of opinion that the extent of the overcrowding has been greatly exaggerated. Altogether it was only found necessary to take proceedings before the Magistrates in 16 instances at Northwich.

**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 building, after compensating the owner.

Very little action has been taken under this Act—according to the Reports received, in four Districts only.

In the Borough of Macclesfield action was begun against the owners of certain insanitary dwellings in 1891. Many of these have been since repaired, improved, pulled down, made into warehouses, &c. Closing orders have been recently obtained against the owners of 45 of them.

At Lower Bebington closing orders were obtained in respect of insanitary property in the Wynt. The houses are vacated, and will be shortly pulled down.

In the Northwich Urban District an attempt was made, by the assistance of the Act, to close certain houses in Bostock Court, but the effort was not successful. The Clerk ruled, in effect, that any non-compensation scheme was impracticable.

In the Altrincham Rural District houses were closed in Cotton Shop Yard, Knutsford.

In the Macclesfield Rural District proceedings were taken with respect to 5 houses. Three have been vacated and are to come down, and in two structural alterations and repairs are in progress.

**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. Such a report as the following from a small Urban District (Cheadle and Gatley) is therefore highly satisfactory:—  
 “Twenty new houses have been built and occupied during the year, and the Surveyor has seen that the requirements of the Board’s bye-laws have been observed. On December 13th the Board resolved that water-closets be required in connection with all dwelling-houses which may be hereafter built in the district.” As regards bye-laws, it is noted by the Medical Officer of Health for Dukinfield that those in use in this district were adopted in 1857, and he recommends the Authority to pass model bye-laws. In Runcorn Urban District new building bye-laws have been passed; and in the Chester Rural District the Local Government Board model bye-laws with respect to new buildings have been adopted and are now in force. Building operations appear to have been fairly active in 7 Urban Districts and 7 Rural Districts. In the town of Northwich 287 houses were built, in the Altrincham Rural District 147 houses, and in the Hazelgrove Sub-district 67 houses.

**New Streets or Roads.**—The work of making new streets or roads is proceeding slowly in several districts. However at Hoylake and West Kirby a good deal seems to have been done. Seven new streets were made and macadamised, three streets were paved with sets and others are being dealt with. In conjunction with the County Council the Local Board have constructed a fine road, a mile and three-quarters in length, between Hoylake and West Kirby.

**Streets in need of Repair.**—Reports are received from three or four Districts of streets being allowed to remain out of repair till they become nuisances. In the Borough of Macclesfield are two streets in this condition. As regards one (Daybrook Street) the Medical Officer of Health writes “putting it in order has been talked of and put off until a more convenient season for the past 45 years.” In Bollington several streets are named as being in a particularly bad state, and a street in Hazelgrove is also complained of.

**School Accommodation** is a subject that may well come within the observation of the Medical Officer of Health, yet it is referred to in only two Reports. The Medical Officer of Health for Bollington notes the over-



crowded condition of certain day-schools in his district, and the Medical Officer of Health for Crewe reports that he visited nearly all the schools in the Borough and did not find any noticeable overcrowding. The public school accommodation ranges from 13 per cent. to 26 per cent. of the population in the four wards, and is equal to 20 per cent. of the population in the whole district.

**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.

At Crewe there are five common lodging-houses in use, and one at present without a keeper, his license having been cancelled owing to conviction before the magistrates. The maximum number of lodgers that can be taken in the five houses is 81. In the aggregate there are 20 rooms for the occupation of lodgers. The average amount of air-space allowed per head is 413 cubic feet, and the statutory allowance is exceeded in every room. In the course of the year a keeper was fined 5s. for refusing to admit the Sanitary Inspector. The model bye-laws with respect to houses let in lodgings have been adopted and are in force.

The Medical Officer of Health for Hyde draws attention to what he considers a defect in the Public Health Act, 1875, with regard to the licensing of common lodging-houses. The Authority ought to have ample power to revoke these licenses and have the houses closed if it be considered that they have become unsuitable for the purpose.

There are 19 registered common lodging-houses in Macclesfield Borough, but 2 of these are now used as private dwellings. During the year one was added to the number. An average of 170 persons per night were accommodated in 1893. Each house was visited at least twice a week, and generally found to be kept cleanly. However, most of the houses are old-fashioned and not altogether suitable for the purpose. A model lodging-house would be a great convenience to the town.

The Medical Officer of Health for Stalybridge states that he visited all the registered common lodging-houses in the Borough and found them in fairly sanitary condition. The Medical Officers of Health for the towns of Altrincham, Northwich, Sandbach and Wilmslow, and for the Rural Districts of Congleton and Warrington report that the



lodging-houses therein are inspected. The common lodging-houses in the Altrincham Rural District are stated to be all of an unsuitable character, and the objects of vigilant supervision—one license was revoked. At Higher Bebington, Cheadle and Gatley, Dukinfield, Hollingworth, Marple and Ashton-under-Lyne there are no common lodging-houses.

**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 storey 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 reason-



able 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 implied 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 the water good, but the Public Analyst suggests alterations in the filter-beds, which are about to be carried out. At Crewe the quality of the water supplied to the town from the artesian wells at Whitmore is not complained of, but the pressure is sometimes insufficient. There are still a few private wells, but the water therefrom is not used for drinking. The Water Works are the property of the L. & N. W. Railway Company, who supply it per meter to the Corporation, and the Corporation distribute it, charging a water-rate to consumers. About 700 houses, owned by the L. & N. W. Railway Company are supplied direct from the Company. The supply is not more than 10 gallons per head per day.



At Hyde a great improvement in the water-supply has been effected by the completion and starting of the pumping-station for supplying Manchester water to the higher parts of the District. The Medical Officer of Health notes with pleasure that his recommendation as to the supply of town's water to the district of Gibraltar has been carried out. In the town of Altrincham the supply was deficient during the summer and for some time the quality deteriorated somewhat. Taking the drought into consideration the supply was little affected. At Bromborough and Higher Bebington there is a good supply from the Wirral Water Works, and at Lower Bebington (with one or two exceptions) every house is supplied from the mains, several outlying cottages having been brought into connection in 1893. At Bollington the drought dried up many of the springs on which the inhabitants have to depend. The Local Board have kept the water question before them and consulted experts. They find there is a sufficient quantity of pure water in the township of Rainow to supply the whole of Bollington. The Board accordingly arranged for the possession of a plot of land at Rainow, and are taking the necessary steps to prove whether or not the supply will be adequate. Bowdon continues to be well supplied from Manchester. At Bredbury and Romiley the supply was well maintained during the year, and efforts were made to secure a more constant supply to the higher parts of the District. At Buglawton a scheme for giving an efficient supply to Church Bank village has been submitted to the Local Government Board. It is at present supplied inadequately by Congleton. Cheadle and Gatley have a sufficient supply from the Stockport Water Works Company, and precautions are taken to insure the purity of the well-waters which form the supply of houses at a distance from the mains. At Chorley the Water Company, owing to the long drought were compelled to use a large quantity of well-water. The supply was sufficient, but excessively hard. Dukinfield, the town of Ashton-under-Lyne in Lancashire, and Stalybridge jointly own the district Water Works. The supply is pure and abundant—20 gallons per head per day. The supply to Hollingworth and Mottram was good, but owing to the drought it was found necessary to limit the quantity. Hoyle and West Kirby have a good supply from deep wells at West Kirby. At Marple there are 964 dwelling-houses (nearly 90 per cent. of the houses in the District) supplied from the mains. The supply is excellent and notwithstanding the drought was available from 6 a.m. to 6 p.m. At Middlewich the Local Board is considering the provision of a public water-supply. The



Medical Officer of Health writes that the water must be pure and plentiful and there must be positive knowledge the gathering ground will not run any risk of being overtaken by dwelling-houses. At Nantwich the supply was restricted during a portion of the year, but not so as materially to interfere with public convenience and certainly not so as to affect disadvantageously the public health. The Board appointed a Water Inspector to look after leakages, &c. Neston and Parkgate have a pure supply from the Local Board's Water Works' deep wells. The mains have been extended 800 yards during the year. At Northwich the water-supply is receiving incessant attention. There has been a daily supply of 300,000 gallons of Cote Brook water. No Wade Brook or Castle water was used for domestic purposes. The Wade Brook water was used for street-watering, engine purposes, &c. At Sandbach the work of connecting fresh houses to the mains has been pushed forward. There only remain 24 houses which in violation of the Board's wishes are using water certified as unfit. When Elworth, Ettiley Heath and Hind Heath are supplied the whole District will have the benefit of the new supply. At Tarporley also the work of connecting houses with the new water mains is being pushed forward—72 premises were connected during the year. The softness of the new water is greatly appreciated. At Wallasey the water is good, but hard. The average quantity used per head per day is 33 gallons. The well at Sea View Road has for a portion of the year been supplying at the rate of 12,000 gallons daily. The water from the new supply is equally pure and promises to be softer. At Wilmslow many samples from different parts were submitted to examination. Those from the village were generally found good, those from outlying districts not good. The Medical Officer of Health strongly recommends that Dean Row, Davenport Green and Morley be supplied with town water. In his last Annual Report the Medical Officer of Health for Yeardsley-cum-Whaley drew attention to the need of an improved supply at Whaley Bridge. At a meeting of the Local Board it was stated that the Local Government Board would not sanction the outlay required. There is a good supply at Taxall.

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 Altrincham the North Cheshire Water Company supply Ashton-on-Mersey, Timperley, Dunham, Northenden, and part of Hale. Over



Knutsford and Nether Knutsford have an independent supply. The other Townships are dependent on private sources. Out of 17 samples analysed from different parts 3 were condemned, and 3 new wells were sampled and passed. At Ashton-under-Lyne there is good water, but owing to exceptionally dry weather it was found necessary to limit the supply. The Birkenhead Rural District is well supplied from the Birkenhead Water Works. In the Chester Rural District several parts are supplied by the Chester Water Works and the Wrexham Water Works, other parts have good well-water, and elsewhere the water is unsuitable or deficient. At Great Saughall want has been experienced among the poor, and some attempt was made to get water from a distance, but expense proved a serious obstacle. Of 2 samples analysed one was found bad. In the Congleton District, Alsager is the only Township which has an independent and general source of supply. Public wells at Mow Cop, Kent Green, Mount Pleasant, and Holmes Chapel are in care of the Inspector. In Hayfield the supply of Disley held out fairly considering the long drought. The Medical Officer recommends that water should be brought to the sink in every house in the village. A great improvement has been made in the supply of 19 houses in Furness Vale. In Macclesfield Rural District 31 samples were analysed, and 12 found unfit for domestic use. Thirty-one houses were provided with improved water supply. The Nantwich Rural Authority supplied during the year 26,000,000 gallons. The number of houses supplied was 2,817 (representing 14,000 people) in 32 Townships. The next scheme will be for the supply of the Townships of Bulkeley, Bickerton, and Egerton, where the water generally is reported by the Medical Officer of Health as entirely unfit for domestic use. Much time was expended during the year in the inspection of water at dairy farms, and improved water was obtained when necessary. In one case twenty dead mice were found in a well, and a mysterious source of pollution was at once removed. The number of houses newly connected to the mains during the year was 249. In Northwich Rural District the water mains were extended for a distance of 1500 yards, to supply Cuddington, Weaverham and Lostock. In the Runcorn Rural District there is need of an improved supply at Alvanley, Helsby, Bartington, Dutton, Norley, Preston-on-the-Hill, Weston and "the Common" at Halton. At Dutton notice was served on owners to provide improved supply, but the Local Government Board were of opinion that the cost was too great. The great cost has also stood in the way of



provision being made for Bartington. At Helsby, a premium has been offered for a satisfactory water scheme. Four houses have been supplied at Preston-on-the-Hill by sinking a well. At Clifton the supply has been recently improved, and is satisfactory. At Sutton the new public pump has not answered expectations owing to the great depth from which the water has to be raised. The village of Norton has been supplied from the Liverpool Water Works, but some farms at Norton still require water and an extension of the mains is recommended. As regards the important Township of Frodsham (where a good supply is wanted for a population of about 3000) a contract has been let for carrying out a scheme which is calculated to yield 30,000 gallons a day. This would give all Frodsham proper, but not the outlying parts of the Township, about 12 gallons a head per day. At Hazelgrove the supply is very good, coming from the reservoirs of Lyme Park, belonging to the Stockport Water Works Co. Some inconvenience was caused during the drought by the limited supply. At South Werneth the supply is satisfactory except at two farms where arrangements are being made for boring. At Tarvin the Authority's operations are hampered owing to the very limited outlay owners can be called on to make. Nineteen samples were analysed and 10 found bad. A new well was sunk by the Authority to improve the supply at Tarvin, and yields very good water. Three other new wells were obtained. At Warrington many samples were sent for analysis and all certified bad or doubtful were rejected. The supply to various parts has been improved by sinking new wells or deepening old ones. In Whitchurch, the supply to Malpas is from the Liverpool mains, but it is turned off at night. The Medical Officer of Health recommends that steps should be taken for making the supply constant. Wirral is generally well supplied by the Wirral Water Works, but during the long dry summer the pressure was not always satisfactory. The well referred to in the last Annual Report as contaminated underground by the Ship Canal Works has regained its purity. Out of 6 samples from the District, which were analysed only one was found 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 a 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 visited all the dairies, &c. on the register, and finds them on the whole well conducted. In Macclesfield Borough 64 premises are registered. They were all visited, and there was no occasion to take proceedings. In the town of Altrincham all the premises were visited twice in the year. In one instance a notice to clean had to be served. At Higher and Lower Bebington the dairies, &c., are regularly visited and generally well kept. At Bredbury and Romiley the Inspector visits at least four times a year, and a steady improvement is taking place. At Cheadle and Gatley are 56 premises systematically inspected. In 5 instances during the year drainage, paving, &c., were found defective, and the defects were remedied. The Medical Officer of Health proposes



that the regulations made should be published throughout the District, as it was found that some of the dairy keepers were ignorant of their existence. In Dukinfield there are 15 dairies, &c., and 36 visits were paid to them. At Hoole are 12 premises regularly inspected, at Neston and Parkgate are 7, also regularly inspected. At Marple there are no regulations, and the Medical Officer of Health recommends that they be made. In the Northwich Urban District and the Rural Districts of Altrincham, Ashton-under-Lyne, Nantwich, Tarvin, and Warrington, the dairies, &c., are inspected. In Congleton Rural District are 46 premises, in Chester Rural District 88 premises, and in Wirral Rural District 241 premises, all regularly inspected. In the Birkenhead Rural District are 27 milk farms and numerous dairies, which are inspected monthly. At Wallasey are 27 cow-keepers and 30 purveyors of milk registered. During the year a thorough inspection was made of all, and a tabular statement giving full particulars is printed with the Wallasey Report. The sub-committee, to whom this statement and report thereon were referred, resolved to amend the bye-laws made for the regulation of the milk-trade. The Authority at Whitchurch have not made any regulation, but the Inspector sees that the dairies, &c., are kept clean and in order. In the Macclesfield Rural District there are 341 persons registered for the sale of milk. All the premises occupied were inspected during the year and a fair amount of improvement noticed; still the air-space in many cow-sheds is considerably below what is authoritatively regarded as a minimum, but it was felt that it would be scarcely reasonable to put the cost of structural alterations and extensions on a tenant, when he was not also the owner.

**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 12 out of 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. At Crewe in one building was a W.C. leading into a bakehouse and its removal was obtained. At Macclesfield Borough action was taken for the removal of a privy and ashpit adjoining a bakehouse. At Altrincham it was necessary to serve 3 notices to clean bakehouses, and in another bakehouse the drains were defective and had to be altered. This is the sum of the defects noted.

**Unsound Meat, &c.**—The statutory powers under which unwholesome food is now ordinary 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 Sanitary Authority (Urban or Rural) by adopting this Section may effect the required change so far as relates to the Authority's District.

The powers of Medical Officers of Health and Inspectors to seize and obtain an order to destroy all 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 five Reports. The prosecution of a butcher for having in possession unsound meat intended for the food of man, and his being sent to prison for two months' without the option of a fine, noticed in the Report from the Macclesfield Rural District, took place early in the year, and was mentioned in the last Annual Report from Macclesfield Borough. At Wallasey there was a considerable seizure (4108 lbs. of meat and 5610 lbs. of offal), the greater part being at the Wallasey Lairages; and at Crewe 2 cwt. of fish and a portion of a cheese were seized. This appears to be all the unsound food seized in the County during the year.

**Slaughter Houses.**—Urban Authorities may provide public abattoirs for the regulation of which they must 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 18 Districts record that local slaughter-houses have been inspected and that they are generally well kept. At Crewe special efforts seem to have been made to get the butchers to conform to the bye-laws as regards their slaughter-houses, yet not one of the 14 registered slaughter-houses in the Borough fulfils all requirements, as indicated by the Local Government Board recommendations. At Bredbury and Romiley the Sanitary Committee made a visit of inspection to all the local slaughter-houses (9), to enable them to decide which might be licensed, and at the close of the year the matter was still under consideration. At Cheadle and Gatley the Medical Officer of Health reports that the slaughter-houses are most of them structurally fairly good, but that there is room for improvement in the way they are kept. One, which is only used occasionally, is quite unfit for the purpose. At Dukinfield 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 Officers of Health for Wilmslow and Hayfield recommend their Authorities to provide public abattoirs. Several of the slaughter-



houses in the Hayfield District are stated to be under dwelling-houses and improperly drained. The Medical Officer of Health for Marple recommends that the local slaughter-houses be registered. At Wallasey a butcher was prosecuted for slaughtering on unlicensed premises.

**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 practicable 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-dryer, leather dresser, tanner, fat melter, glue maker, size maker, and gut scraper.

In only one District was any action taken with reference to offensive trades. In the Borough of Crewe a man carrying on the trade of a tripe boiler, and another carrying on the trade of a gut scraper, were served with notices calling on them to give up their business within three months. At Wallasey complaint was made to the Local Board and to the Local Government Board of offensive smells from a tallow-melting works, but on investigation there was little evidence of nuisance.

**Food Adulteration.**—Mention is made in three 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 8 samples of food (6 milk, 1 pepper and 1 coffee) were sent to the Analyst and found pure. At Macclesfield Borough 33 samples (11 milk, 6 butter, 6 cheese, 3 bread, 3 lard, 2 vinegar, 1 flour and 1 rum) were sent to the Analyst. All were found pure but 2 samples of butter, which were reported to be margarine. In one case the shopkeeper who sold the goods was warned by the Health Committee, and in



the other proceedings were taken before the local Justices and a fine of one shilling and costs imposed

**Recreation Grounds.**—The Report from the Borough of Macclesfield states that a fine plot of land in Buxton Road, beautifully laid out as a public park, has been presented to the town by Mr. F. D. Brocklehurst. In connection with this new park a well-made road has also been formed and presented to the town by the same donor. The Report from Bollington states that a cricket and recreation ground, forming a very pretty park, in a central position, has been presented to the District by Mr. Francis Greg, J.P., C.C. The Medical Officer of Health suggests that the Local Board might follow Mr. Greg's example as they have land, which could be improved and utilized as a recreation ground.

**Meteorological Results.**—Only three Medical Officers of Health furnish any record on the meteorology of the year. It is rather remarkable that these were taken at Bidston, Stalybridge and Crewe, representing very nearly the western and eastern extremities of the County, and a point in the south about equidistant from the other two points of observation. The results are not quite comparable. However they serve to shew that W. and E. and S. the temperature was exceptionally high and the rainfall deficient—that is below the mean local fall. The year's rainfall at Bidston was 24.53 inches, at Stalybridge 33.80 inches, and at Crewe 16.37 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 Board. 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, promoting cleanliness and preventing infectious diseases in such boats are (as required) the Local Government Board's.

Judging by the Reports there are 12 districts in which the provisions of these Acts are in force—the Urban Districts of Macclesfield, Altrincham, Dukinfield, Lymm and Wallasey, and the Rural Districts of Altrincham, Chester, Congleton, Macclesfield, Nantwich, Runcorn and Wirral. The number of boats inspected is not stated as regards Nantwich. The number of boats inspected in all the other districts was 771.



The number of instances in which some breach of the regulations was noticed was 23. In only one case was a prosecution instituted and a fine inflicted—the offence was having too many persons on board. The other offences were failure of master to produce certificate, not having the boat registered, not having the boat marked and numbered, not carrying a suitable cask for drinking water, &c. The owners on being served with notices did what was required. No cases of infectious disease, except the cases of small-pox already referred to, were notified on board canal-boats.

**Interments.**—Reports have been received from three Districts that the land available for the burial of the dead is insufficient. At Bollington the churchyard is stated to be nearly full. In the last Annual Report for Cheadle and Gatley it was noted that there was need of additional land and that the Local Board had advertised for offers of suitable land for a cemetery. Nothing has been done by the Board in 1893, but the Medical Officer of Health is informed that a gentleman has offered a small plot of land (which will provide about 80 graves) for the enlargement of the churchyard. The early provision of a suitable burying-ground is still very necessary. The Medical Officer of Health for Handforth writes that the Handforth Churchyard remains in the state he described a year ago, except that more bodies have been interred in what was then an insanitary and overcrowded burying-ground.

FRANCIS VACHER,

*County Medical Officer of Health.*

June 30, 1894







ADMINISTRATIVE COUNTY OF CHESTER.

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# SUMMARY OF REPORTS

OF

## District Medical Officers of Health

FOR THE YEAR

1893.



Administrative County of Chester

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SUMMARY OF REPORTS

District Medical Officers of Health

FOR THE YEAR

1883



SUMMARY OF REPORTS  
OF  
DISTRICT MEDICAL OFFICERS OF HEALTH,  
For the Year 1893.

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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 1893—10744.

Area in acres—2572.

Birth-rate per 1000 living—28·4.

Death-rate per 1000 living—18·8.

Death-rate from seven principal Zymotic diseases—2·4.

Deaths under one year to 1000 births—163.

During the year 306 births were registered. The birth-rate for 1893 (28·4) is not quite equal to the mean birth-rate of the five years 1888-92 (28·8). During the year 203 deaths were registered. The death-rate for 1893 (18·8) is well below the mean death-rate of the five years 1888-92 (20·1). Fifty deaths were of infants under one year old. This, though exceeded in some districts, is a large proportion for a town like Congleton. Twenty-two died within a month, indicating that they were born in a state rendering lengthened tenure of life improbable, and that death was not attributable to the causes supposed to give rise to high rates of infantile mortality in some large manufacturing towns. In the case of 25 it was ascertained that the mothers had not any connection with factory work taking them away from home.

The following cases of zymotic diseases came to the knowledge of the Medical Officer of Health, viz:—29 of scarlatina, 4 of diphtheria, 5 of fever (4 typhoid and 1 puerperal), 3 of measles, 39 of whooping-cough and 41 of diarrhœa. There were 25 deaths from these diseases, viz:—1 from scarlatina, 3 from diphtheria, 2 from typhoid fever, 1 from puerperal fever, 1 from measles, 6 from whooping-cough and 12 from diarrhœa. The zymotic death-rate for 1893 (2·4) is about equal to twice the zymotic mean death-rate of the five years 1888-92.

It is not pretended that the above list of cases of zymotic disease is even proximately complete. It is just an enumeration of such cases as were in various ways brought to the notice of



the sanitary officials in the course of the year. In many instances the cases were not heard of till long after their occurrence, and long after the time had passed within which something might have been done to prevent the spread of infection. The importance of receiving early information of first cases, in order that steps may be taken to prevent the extension of the disease, cannot be overrated, and this can only be obtained by imposing an obligation on householders and the medical practitioners in the district to give information to the Medical Officer of Health immediately. On three occasions has the Medical Officer of Health brought this matter of the adoption of the Infectious Disease Notification Act before the Sanitary Authority, and on each occasion have they decided not to adopt the Act. Now that the Act has been adopted in nearly every town in England, the Medical Officer of Health hopes that the Borough of Congleton will reconsider the decision come to.

**Scarlatina.**—Cases of scarlatina kept appearing here and there in the town, throughout the year. There was, however, no general outbreak, and the disease was of an unusually mild character, as may be inferred from the circumstance that only one death took place.

**Diphtheria.**—As there were 3 deaths from diphtheria, unless the disease was of a very malignant type, there must have been many more cases than the 4 that came to the knowledge of the Sanitary Authority. It is not supposed that outbreaks of diphtheria have any relation to bad sanitary states, and at this moment there is no very plausible theory as to its causation. There is no doubt however of the disease being communicable from one person to another, and it therefore becomes very desirable that every effort should be made to separate the affected from the healthy.

In the last quarter of the year there was what almost amounted to an epidemic of sore throats, but from its comparatively mild character and the circumstance of its occurring after instead of before the diphtheria cases, it was not thought to have any relation to that disease.

**Typhoid Fever.**—All the houses where typhoid fever occurred were supplied with the town's water, which was ascertained to be free from pollution, and there was not any sanitary defect found about the houses sufficient to account for the disease. Three of the houses were situated close to the river, which, for a long time during the dry weather, was in a most offensive state for a distance of 150 or 200 yards downwards from the Dane Bridge, owing to the quantity of water in the river being insufficient to carry off the sewage which enters a little



higher up. The quantity of sewage entering each day may not be very much, and at ordinary times the appearance of the river hardly indicates that it enters at all, but when (in times of drought) it accumulates for weeks in a limited space, the quantity is sufficient to create a very great nuisance. Whether this nuisance actually caused typhoid fever or not, the Medical Officer of Health thinks it was likely to do so. With regard to the fourth case of the disease, there are grounds for doubting that it was a case of typhoid fever at all. There was nothing in the sanitary state of the house or neighbourhood to cause the disease.

**Measles.**—The 3 cases of measles known to the Authority were imported from other places. As usually happens with this disease, under such circumstances, it did not spread.

**Diarrhœa.**—A severe outbreak of diarrhœa began early in July and continued through the greater part of August. The weather had been exceptionally hot and dry for a long time before the end of June, when there was a considerable quantity of rain for a day or two, followed by very hot weather again. This condition of things, coupled with defective sanitation, is what summer diarrhœa is supposed to arise from, and it will not occur in the absence of either. For some years there has been no diarrhœa outbreak, and locally this was attributed to the sanitary improvements affected, whereas it was merely due to the absence of high temperature and favourable weather conditions. When these came into operation this year, it was made perfectly clear that the sanitary state of the district was as bad as some years back, when such outbreaks were of frequent occurrence. No estimate can be formed of the number of cases but the number must have been large. The deaths (12) were confined to infants under one year old, but from this it must not be inferred that the disease specially attacked children of that age. It is thought that all ages were affected in about equal proportions, but the very young were less able to resist its effects.

**Water-Supply.**—In view of a possible importation of cholera, and on account of the occurrence of typhoid fever, the town's water was examined several times, and a sample was sent to the Public Analyst, who pronounced it good, but suggested an alteration in the filter beds, which, it is understood, is about to be carried out. It was not found necessary at any time during the very dry summer to interrupt the usual constant supply, or to limit its use in any way.

**Nuisance near Hospital.**—Owing to the prevalence of small-pox in several places at no great distance from Congleton, a watch was kept for a time on the lodging-houses and the tramp ward; and the equipment of the Hospital was over-



hauled and found to be ready for use at any time. But on inspecting the Hospital itself, the Medical Officer of Health was surprised to find the open ditch close behind it and several houses in New Street, and receiving the contents of a considerable number of privies, was still there, and in the same state as usual. Attention had been called to it over and over again since the Hospital was last in use, and the Surveyor had promised the matter should be attended to. Nothing has yet been done, and in the event of an outbreak of small-pox the Medical Officer of Health would hesitate to send a patient into Hospital, till the removal of this nuisance.

**Removing and Deodorizing Excreta.**—The "pail system" continues to be recognised as a great improvement on the old privy and ashpit system. The emptying of the pails has been fairly well attended to throughout the year. Up to a short time ago no attempt was made to deodorise or disinfect the pails, except on their being removed to the town yard, and then only in a very imperfect way. A plan is now being tried which consists in placing in each pail, when put in the closet, a sufficiency of peat dust to absorb the moisture and deodorize the contents, and a quantity of sulphuric acid sufficient to disinfect the whole when the pail is full. What is attempted is certainly effected, for when the pails are brought to the yard their contents are found to be free from disagreeable odour and comparatively dry. It is said that the value of the night-soil for agricultural purposes, when thus treated, is considerable, and it is expected to do more than meet the increased cost from increased receipts. Indeed, under the old plan, the value of the manure was so doubtful that it was difficult to get farmers to take it at any price. In any case the change is a great improvement from a sanitary point of view. One advantage is that the pails (under the new plan) may be removed in the day-time, without people being conscious of anything unusual going on.

The Medical Officer of Health believes that it was the difficulty of disposing of the night-soil which induced the Sanitary Authority some years ago to pass a resolution discontinuing the conversion of privies into pail closets, except in very special instances. Previous to the passing of that resolution the conversion was going on rapidly, and but for the resolution long before now all the privies would have been pail-closets. Under the worst management experienced locally, pails have been found infinitely more satisfactory than privies. Indeed, with the utmost care there is no preventing privies being a nuisance. With the care they get, they are a very serious nuisance indeed, and a source of great danger—unemptied for months, often lodging foul water, and during hot



weather offensive beyond description. Now that the reasons for passing the resolution referred to are likely to be permanently removed, it is hoped the conversion of privies into pail-closets will be pushed on with vigour.

**Abatement of Nuisances.**—In the course of the year the Medical Officer of Health visited the whole district more than once, and parts of it several times. As regards street drainage and improvements as much has been done as could be expected, considering the depressed state of the trade of the town. As regards abatement of nuisances the record is not satisfactory. It is the exception rather than the rule for house connections with main drains to be trapped at all, or at any rate to have efficient traps in working order, and the number of houses with defective or blocked drains is considerable. In this respect it is believed things have lately been getting worse than they were some time ago. It is almost superfluous to point out that when such nuisances are complained of as a sewer having given way and flooded the cellars of a dwelling-house with sewage, or that the contents of an ashpit are running into a house, or that a privy is so full that it cannot be made use of, they ought to be attended to immediately, instead of, perhaps, weeks after. Prompt attention to such matters is of first importance. The Sanitary Inspector is no doubt a capable officer, and quite equal to doing all that is required, if he had time to do it, but as he also holds the office of Borough Surveyor and has the superintendence of several miles of main roads, it is utterly impossible for him to devote to sanitary work, a twentieth part of the time it demands. The Medical Officer of Health does not blame the Inspector, seeing that there are thrust upon him duties which are quite beyond the physical powers of any man. In a town of the size of Congleton there ought to be a Sanitary Inspector whose whole time is devoted to sanitary work. By constant inspection he would know the state of every part of the district, and be in a position to deal with nuisances and defects promptly, as they arose. Under the present system sanitation at Congleton is likely to become a mere pretence. The Medical Officer of Health trusts the Sanitary Authority will take this into serious consideration, when he has little doubt they will come to the conclusion that there is abundance of work for one man as Surveyor and for another as Inspector, and that the duties of neither can be efficiently performed while both offices are held by the same man.



## CREWE.

## Municipal Borough.

Medical Officer of Health—DR. HERBERT JONES.

Population at Census, 1891—32783.

Estimated population in middle of 1893—35338.

Area in acres—2193.

Birth-rate per 1000 living—34·7.

Death-rate per 1000 living—19·6.

Death-rate from seven principal Zymotic diseases—5·3.

Deaths under one year to 1000 births—171.

**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, apportioned as follows:—

East Ward	...	...	271 acres.
South „	...	...	712 „
West „	...	...	450 „
North „	...	...	760 „

**Altitude and Subsoil.**—At Hightown the height above sea-level is 200 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, therefore, got the Sanitary Inspector to take a census of the added area on September 29th, 1893, and at the same time to ascertain the number of inhabitants in the added area at midsummer, 1893. Estimating the population of the old Borough at midsummer, 1893, and adding to it the enumerated population of the annexed area, it is



calculated the whole population of the Borough at midsummer, 1893, was 35,338. The accuracy of this calculation was checked by ascertaining the natural increase in the population since the census, the number of new houses erected since the census, and the number of empty houses at Midsummer, 1893.

Although the extended area came within the jurisdiction of the Crewe Urban Sanitary Authority on November 9th, 1892, whenever comparative figures are given (unless otherwise stated) those for 1893 will refer to the extended Borough, and those for the whole of 1892, and previous years, to the old Borough.

The population of the four wards, the number of persons per acre, and the number of persons per house at midsummer, 1893, are given as follows:—

	Population.	Persons per Acre.	Persons per House.
East Ward ...	7052	26	5.0
South „ ...	11364	16	5.0
West „ ...	13274	29	4.9
North „ ...	3648	5	4.7

**House Accommodation.**—As showing the proportion of small houses in the Borough, the following statement compiled from the return of the Census, 1891, is given. There were in the old Borough in April, 1891:—

13	houses of 1 room only.
45	„ 2 rooms only.
81	„ 3 „
1451	„ 4 „
4221	„ more than 4 rooms.

The number of new houses completed in 1892 was 143, and the number of new houses completed in 1893 was 142.

**Age.**—In the Census are particulars of the number per 1000 living at different age periods, furnishing materials for comparing the local age-distribution with the age distribution in England and Wales. Dividing lifetime into three stages, approximately representing childhood, manhood and old age, the comparison is as follows:—

	Under 15 years.	15 to 55 years.	over 55 years.
England and Wales, 1891 ...	351	545	104
Borough of Crewe, 1891 ...	374	545	81

Difference ...	+ 23	...	— 23
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Thus in the middle period of life the Crewe population does not differ from that of England and Wales, but Crewe has relatively more children and fewer old people.

**Births and Deaths.**—In 1893, the number of births registered was 1228, yielding a birth-rate which is 0.8 higher



than the mean birth-rate in the five years 1888—92. In 1893, the number of deaths registered was 694, yielding a death-rate which is 3·5 higher than the mean death-rate in the five years 1888—92. The monthly death-rate varied from 11·2 in September, to 26·4 in March.

The high death-rate for the year is no doubt accounted for by the large number of deaths from the zymotic diseases, especially diarrhœa, and the increased mortality from diseases of the respiratory organs.

In East Ward the death-rate was 21·9 per 1000; in South Ward it was 17·2; in West Ward it was 20·0; and in North Ward it was 18·1. Thus the two wards most thickly populated are the wards in which the death-rate is high.

Of the whole number of deaths 211 were among infants under one year old. This is a large proportion.

**Zymotic Diseases.**—The number of deaths in 1893 from the seven principal zymotic diseases was 190—viz.: 37 measles, 20 scarlatina, 19 diphtheria, 15 whooping-cough, 15 fever (10 typhoid and 5 puerperal), and 84 diarrhœa. The death-rate from these diseases was therefore 5·3, which is exceptionally high. For East Ward the zymotic death-rate was 5·8; for South Ward it was 4·0; for West Ward it was 5·7; and for North Ward 4·6. Thus this death-rate was higher in the two wards where the density of population was greater.

**Notification.**—Cases of infectious disease are not subject to compulsory notification in the Borough, yet no less than 222 cases came to the knowledge of the Medical Officer of Health—viz.: 2 small-pox, 3 measles, 130 scarlatina, 7 diphtheria, 59 whooping-cough, and 21 typhoid fever. All these, with the exception of the two cases of smallpox, were reported since September 1st.

**Small-pox.**—Two cases occurred in the Borough, in January: one in Beech Street, and the second in New Street, two days after the first. In each instance the infection was traced to Warrington. The patients were at once removed to the Small-pox Hospital, the infected bedding, &c., was destroyed, and the houses where the disease occurred were disinfected. Six weeks after being admitted the patients were discharged, well and free from infection. The cost incurred by the Corporation amounted to £101 12s. 8d., including £10 1s. 6d. given in compensation for clothing, bedding, &c. destroyed.

On April 5th, an engine driver slept at the Enginemens' Barracks and was taken ill there, but worked his engine home to Carlisle, when he was found to be suffering from small-pox. The L. & N. W. Railway Company (who provide these barracks for the convenience of those engine-drivers who finish their day's



work at a distance from home) had the bedding, &c. destroyed, and the building disinfected and cleansed.

No other cases occurred during the year. It is probable that only two or three per cent. of the children born at Crewe are unvaccinated.

**Measles** was very prevalent during the earlier half of the year. Thirty-six deaths were recorded as due to it before the end of May, all of children under five years old. During November and December, a few isolated cases were reported, but no deaths occurred. When a case of measles is reported, the Medical Officer of Health addresses a circular letter to the head teacher of the day school and the superintendent of the Sunday school attended by the child affected, and all the children of the household, urging that they should not be allowed to attend school until they can do so with safety to their companions. The rash of measles usually appears on the fourth day after the child begins to sicken, but for two and perhaps three days before it makes its appearance, the patient is highly infectious and may transmit the disease as readily as during three weeks after the illness has begun. Children commonly not being kept at home till the rash comes out the disease readily spreads through schools. The prevalent belief that measles is not a fatal disease, should be sufficiently disproved by the number of deaths from it in Crewe in 1893.

**Scarlatina.**—This disease was present in the Borough during the whole year. Of the 20 deaths registered 5 were of persons 25 years and upwards. The houses where cases were reported were visited by the Medical Officer of Health and Inspector, a circular was left at each house stating the precautions to be taken, and instructions were given as to disinfection of the rooms at the close of the illness (work usually done by the Inspector). Particulars have in each case been registered, including probable source of infection, milk supply, closet accommodation &c. As in the case of measles, circular letters have been sent to those in charge of the day schools and Sunday schools attended by all the children in each infected household.

In no instance has milk been a vehicle for carrying the contagion.

**Diphtheria** has also been present in the Borough during the whole year. Twelve of the 19 who died of the disease were children under five years old. It was noticed that the fatal cases of diphtheria and scarlatina occurred in the same districts. Two semi detached villas in Wellington Square, examined, owing to diphtheria cases being reported in the Square, were



found to have several faulty sanitary arrangements. These were pointed out to the owners and at once rectified.

The diphtheritic poison being exceedingly tenacious of life, the Medical Officer of Health caused a thorough examination to be made of every house at which a case of the disease was reported, and any ashpit, privy, or cesspool found was at once cleaned out. In two instances a fatal case occurred in the immediate neighbourhood of a case that had been fatal some months before, and it was found that the cesspools, which had been emptied about the time of the occurrence of the first two, had not been again emptied till just before the second two patients were attacked—the poison having probably remained active and been thus disseminated.

**Whooping-cough** was present in the earlier months of 1893, and in the last quarter became epidemic. All parts of the town, but the North Ward, were affected. The head teachers at the day schools are very careful not to admit to their classes children known to be suffering from whooping-cough. In order that the disease might not be spread in Sunday schools, letters were addressed to the superintendents urging them to exclude from their schools children known to have whooping-cough.

Parents treat this disease lightly, making no effort to keep their children from those infected, or when infected to keep them from those who are well. The fact that in Crewe, 15 died of whooping-cough during 1893 and 23 during 1892, should be sufficient evidence of its seriousness.

**Typhoid Fever** was present during the latter half of the year, but in a more or less confined district. Four deaths occurred in the South Ward, and six in the West Ward, only two cases were heard of in East Ward, and only one case in North Ward (caught from one of the East Ward cases). It is probable the first case in the Borough was imported from a sea-side resort.

On first visiting premises in which typhoid cases existed, the Medical Officer of Health noticed that no special precautions were taken with the patients' excreta, through which alone the infection is carried. Accordingly, he obtained leave from the Health Committee to purchase some zinc pails with tightly fitting covers, and one of these is now sent to every house that has no water-closet, where a case of typhoid fever is reported. A layer of peat is placed in the pail, disinfectants are sent with it, and instructions given to use the disinfectants to the stools freely, and to keep the pail closed. The pail is exchanged weekly.

No case of typhoid fever was traced to the milk supply.



**Diarrhœa.**—Crewe suffered, like almost every other town in the country, from a severe epidemic of diarrhœa during the summer of 1893. A large proportion of those who died (79 out of 89) were children under five years old. Of the 79 children 64 were under one year. The death-rate from this disease was 2·5 per 1000 living. The exceptionally hot and dry summer, no doubt, accounts for a great deal of this mortality; there are, however, other factors to consider, which will be dealt with under the heading "refuse removal."

In the East Ward there were 15 deaths, in the South Ward not half-a-dozen streets were without a death from the disease, in the West Ward fatal cases occurred in every second street, and in the North Ward there were deaths only in three streets.

**Pneumonia.**—During the last quarter of 1893, inflammation of the lungs assumed almost an epidemic character, especially among young children. The number of deaths registered as due to pneumonia during the year was 90, and 47 of these were of children under five years of age, 25 being under one year. The disease was most fatal in West Ward. The death-rate from pneumonia was 2·5 per 1000 living in the whole town—in West Ward it was 3·7.

**Influenza** was very prevalent in every part of the town during the last quarter. Eight deaths were registered as due to it in 1893 (2 in the third quarter, and four in the last). In 1892 there were 11 deaths due to this disease.

**Phthisis** was registered as the cause of 32 deaths. This gives a death-rate of 0·9 per 1000 living. The mean death-rate from phthisis in the five years 1888-92 was 1·0 per 1000. The Medical Officer of Health has drawn up a circular to be sent to those suffering from this disease coming under his notice, pointing out its infectious character, and giving instructions as to precautions. It is proposed, when the disinfecter is at work, to have the clothing, bedding and carpets from the rooms of phthisical patients disinfected.

**Isolation Hospital.**—There is at present a Small-pox Isolation Hospital, which was established in 1883, and is capable of accommodating 10 patients. A caretaker lives on the premises, and keeps the rooms, linen, &c., well-aired, and nurses are obtained as required. There is a horse-ambulance in an out-building adjoining the Hospital for the removal of patients. The Medical Officer of Health has medical and general care of the Hospital. It afforded the means of isolating the only two cases of small-pox which occurred in the town during the year.

There is no Hospital for the isolation of other infectious



diseases; but a Sub-committee has the question of further hospital provision under consideration.

The Medical Officer of Health cites instances showing the infectiousness of scarlatina, and the need of isolation to check its spread. For the first ten days or a fortnight, while the patient is ill in bed, only few are exposed to infection, but for the next month or so, while the skin is peeling, the patient is considered well enough to be amongst his companions, and during this period the disease is usually spread. It is not too much to hope that an early knowledge of cases of scarlatina and their removal to hospital would greatly lessen the incidence of the disease.

**The Infectious Disease (Notification) Act.**—The complement of the provision of an infectious hospital is the adoption of this Act. Should the Authority decide to provide a hospital, they would do well to adopt the Act; and the Medical Officer of Health suggests that phthisis be added to the list of notifiable diseases. Already many cases of infectious disease have been reported through the Relieving Officer and the School Attendance Officer, to whom are supplied books of printed forms, which they fill up and transmit. In this way notices of 200 cases were received during the last four months of the year.

**The Infectious Diseases (Prevention) Act,** giving increased control over the milk-supply, greater powers of disinfection, &c., was adopted in 1892.

**Disinfection.**—During 1893 seven tons of a powder containing 15 per cent. of carbolic acid have been used by the Sanitary Department. The night-soil men are supplied and instructed to use it freely. Any householder in the town may have a free supply when necessary, and some is sent to every local medical practitioner, to be distributed by him as he thinks fit.

The Corporation have sanctioned the purchase of a steam disinfecter at a cost of £300, and await the consent of the Local Government Board to the borrowing of this sum. It is proposed to erect the apparatus on ground immediately adjoining the sewage farm pumping-station, from which steam will be supplied.

**School Accommodation.**—There is school accommodation in the Borough for 7008 children, distributed as follows :

			Per cent. of Population.
East Ward,	1889	...	26
South „	1455	...	13
West „	2814	...	21
North „	850	...	23



The Medical Officer of Health has visited nearly all the schools and not found any noticeable overcrowding.

The Authority is much indebted to the School Attendance Committee, the School Attendance Officer, and to the head teachers for assistance rendered in dealing with cases of infectious disease.

The provision of playgrounds or open spaces for children is of great importance. The vacant lands in the more crowded parts of the Borough are gradually being built upon, and it is desirable some of these should be secured before it is too late.

**Vans and Tents.**—Only a few of these have been visited. The Medical Officer of Health proposes henceforth to have them regularly inspected. He recommends that sanitary accommodation should be provided at the back of the Market Hall, for the use of showmen, &c., living in vans and tents.

**Milk Shops and Dairies.**—The register of these is about to be revised. The Medical Officer of Health has visited all the dairies in the town, and finds them on the whole well conducted.

**Unsound Meat, &c.**—In July, 2 cwt. of fish were seized and condemned. In December a portion of a cheese was seized and condemned. These were the only seizures, but the meat, fish and provisions exposed for sale in the town are carefully inspected.

**Slaughter-Houses.**—There are 14 registered slaughter-houses in the Borough. In July, 1877, the Local Government Board recommended that certain rules should influence an Urban Authority when considering the desirability of registering premises for use as a slaughter-house. Not one of the 14 fulfils all requirements, as laid down by these rules. However, with two exceptions they were registered previous to July, 1877. These two fulfil the requirements very nearly indeed.

Early in October, the Medical Officer of Health visited all the slaughter-houses, and afterwards sent a copy of the bye-laws to each occupier, with a letter calling attention to the special bye-law that was not being obeyed. Several of those written to did what was required at once, others needed a second or third reminder. With, perhaps, one or two exceptions, all the butchers seem anxious to carry out the bye-laws regulating their occupation.

**Bakehouses.**—There are thirteen registered bakehouses in the Borough. In four the ovens are stoked from the outside, and this must very considerably lessen the amount of dust in the bakehouses. In some the coal lies in an uncovered heap, allowing the coal dust to blow into the flour bins or on the bread. In one instance there was a w.c. leading into the bakehouse, but



at the suggestion of the Medical Officer of Health it was removed. In four bakehouses the arrangements were admirable in every way.

**Factories and Workshops.** — In addition to the L. & N. W. Ry. Co's. Works, there are some 60 factories and workshops in the Borough, all of which the Medical Officer of Health proposes to visit periodically.

**Offensive Trades.** — Although application has been frequently made to the Authority asking them to consent to the establishment of a tripe-boiling business, they have always refused to give such consent. One man has been carrying on the trade for some 25 years, his premises being partly in the old Borough and partly in the adjoining district. Since the extension of the Borough boundaries the whole of the premises have been in the Borough. In October a notice was sent, calling upon him to cease carrying on the business within three months. A similar notice was served on a man carrying on the trade of a gut scraper.

**Common Lodging-houses.** — There are in use five registered common lodging-houses—the maximum number of lodgers that can be taken in being 81. During 1893 the registered keeper of a sixth house, having been convicted before a magistrate, had his license cancelled, and the house (accommodating 24 lodgers) is not yet provided with another licensed keeper. In the 5 houses there are, in the aggregate, 20 rooms for lodgers, and the average amount of air space per head is 413 cubic feet. The statutory allowance is exceeded by very little in some instances, still it is always exceeded.

There is an evident disposition on the part of the keepers to carry out the bye-laws to the best of their ability; and the low rents charged per bed per night ( $3\frac{1}{2}$ d. and 4d.) make it almost impossible for the keepers to do more than the bye-laws compel them. One keeper was fined 5/- and costs for refusing admission to the Inspector.

**Houses let in Lodgings.** — The Model Bye-laws with respect to houses let in lodgings were adopted by the Corporation in 1877.

**Water-Supply.** — No complaints have been made of the quality of the water supplied to the town from the artesian wells at Whitmore, though in one or two instances it was reported that the pressure was not so great as it should be. There are still a few wells in the town, but the water therefrom is not used for drinking purposes. The Medical Officer of Health will obtain samples and analyse them.

The Water Works are the property of the L. & N. W.



Ry. Co., who supply the water by meter to the Corporation, the Corporation distributing it, and charging a water rate to consumers. There are some 700 houses owned by the Railway Company, which are supplied direct by the Company. It is thus a little difficult to estimate the amount of water consumed—probably it is not more than 10 gallons per head per day.

**Ashpits and Refuse Removal.**—Of the 7000 houses in the Borough about 2500 are provided with ash-pails, about 1500 have dry ashpits, and about 3000 “mixens” or midden-privies. Of the 4000 houses provided with ashpails or ashpits, about 1300 have ordinary water-closets and 580 “tippler” closets, about 1800 have privy pails, 120 fixed receptacles, and 200 privy pits.

It is a recognised canon of sanitation that all refuse (whether excremental, household or trade refuse) should be removed as speedily as possible from the dwellings of the inhabitants. Where there are water-closets and ash-pails the refuse is removed, perhaps as speedily as need be, and where there are privy pails the good rule as to speedy removal is observed fairly well. However, the dry ashpits, midden-privies, cesspools, and fixed receptacles are opposed to the requirements of sanitation, and they no doubt took an active part during the summer months in the production of infantile diarrhœa.

The fixed receptacle has nothing to recommend it, being practically a small cesspool, the contents of which have to be laded out. The privy pit can only be allowed in a sparsely-populated district, where its contents can be frequently and regularly put upon the adjoining land.

The 3000 midden-privies (mixens) are a serious difficulty. Such a receptacle, if properly constructed with a well-made floor, and not below the level of the ground, arranged so that fine ashes can be thrown upon the excrement, cannot be taken exception to, *that is, if it is properly used*. However, it has been found next to impossible to get occupiers to use these receptacles properly. Circulars have been issued urging occupiers to throw ashes on the excrement, and not merely behind; and handbills have been distributed warning people not to throw water and slops in the middens. Still the bad practices are carried on.

During the last eleven years notices have been served for the reconstruction of no less than 2,460 privies and ashpits: notices referring to 350 were served in 1893. It seems a pity that owners should be asked to reconstruct upon a system, which the Authority is not satisfied is the best. Wherever it has been possible the Medical Officer of Health has urged those called on to reconstruct, to provide ash-pails, and either w.c's. or privy pails.



The average amount of sewage pumped daily is now a million gallons. If every house in the town had a w.c., allowing 15 gallons per day from each house, the additional quantity of sewage to be pumped would amount to only 75,000 gallons daily. The cost of water for each w.c. is about 3s. per annum, but no charge is made by the Corporation for water supplied to a w.c.

The cost of emptying the privies and ashpits, in 1893, amounted to £2,410—about 1s. 4½d. per head of the population. The staff employed in this work consists on an average of a foreman and 12 men, with 10 horses and their drivers. Extra men and horses are engaged as occasion arises.

Each of the carts, used for carrying dry ashes in the day time, is now provided with a canvas sheet which is drawn over the loaded cart as it goes through the streets; and each night-soil cart has now a double-hinged wooden cover.

In October, the Health Committee decided to allow the men engaged during the night, hot coffee or bovril. The beverage is prepared at the Sanitary Office, and it is kept warm by means of a lamp, in a box, designed by the foreman.

The whole question of dealing with the refuse of the town is under consideration of a Sub committee, to whom a special report was submitted by the Medical Officer of Health in November. Visits were paid in December to Rochdale, Halifax, Bradford, Leeds, and Huddersfield, where cremators were inspected, and as a result experiments are now being carried on at the pumping-station on the sewage farm.

There are in the town 9 public urinals, each having an automatic flushing-cistern. They are all flushed and cleansed by the scavengers daily, except on Sundays. The number of urinals is quite inadequate. In the event of some of the railway bridges being altered, it is suggested that a urinal might be placed at one corner or other of a bridge where practicable.

**Examination of Houses.**—In November, public notice was given that any person might have his house examined as to its sanitary condition, free of charge, upon making application to the Sanitary Department. Already several persons have taken advantage of the offer.

**House-to-house Inspection.**—It has only been possible to carry on house-to-house inspection to a very limited extent. With a view to make the inspections as thorough as possible, a form of particulars is used, to be filled up on the premises. During the last four months of 1893, there were examined and particulars recorded of 82 houses.



**Nuisance Abatement.**—The Sanitary Inspector has latterly in lieu of serving a legal notice to abate a nuisance, filled up a skeleton letter addressed to the owner of the property affected, pointing out where certain nuisances exist, suggesting a proper remedy, and proposing that the owner confer with the Medical Officer of Health or Inspector on the matter. In the event of no attention being paid to such a letter a "notice to abate" is sent.

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

1893.	Rainfall in Inches.	No. of days on which no rain fell.	Temperature in shades.	
			Highest.	Lowest.
January ... ..	0·71	25	...	...
February ... ..	0·63	11	...	..
March ... ..	0·46	22	...	...
April ... ..	0·36	26	...	...
May ... ..	2·80	20	...	...
June... ..	1·19	22	96	42
July ... ..	2·11	18	..	...
August ... ..	1·61	16	87	30
September ... ..	1·89	13	76	26
October ... ..	1·29	17	63	14
November ... ..	0·77	18	55	20
December... ..	2·55	10	50	14

The entire rainfall of 1893, in Crewe was therefore only 16·37 inches, and there were 218 rainless days. During 1894 the earth temperature will be recorded at one foot and four feet below the level of the ground.

**Inspector's Report.**—Mr. W. Urquhart, the Sanitary Inspector submits a report giving full particulars of the work done in his department and of the scavenging. Nearly all the matters dealt with have been already referred to.

## HYDE.

### Municipal Borough.

Medical Officer of Health—Dr. G. W. Sidebotham.

Population at Census, 1891—30670.

Estimated population in middle of 1893—31104.

Area in acres—3074.

Birth-rate per 1000 living--30·5.



Death-rate per 1000 living—24·1.

Death-rate from seven principal Zymotic diseases—4·2.

Deaths under one year to 1000 births—235.

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 1893, the number of births registered was 951 and the number of deaths registered (excluding the death of a patient from Stalybridge which took place in the Infectious Hospital) was 750. The seven principal zymotic diseases account for 131 of the local deaths. Thus the general death-rate and the zymotic death-rate are both high.

**Notification of Infectious Disease.**—No less than 216 cases of dangerous infectious disease were notified to the Authority, viz. :—50 small-pox, 65 scarlatina, 62 diphtheria, 35 typhoid fever, and 4 puerperal fever; but 43 of the small-pox cases, and 24 of the scarlatina cases occurred outside the district and were sent into hospital.

**Small-pox.**—Seven cases appeared at intervals during 1893. Except in one case, that of a nurse who took the disease in hospital, the infection was probably contracted outside the district. In most cases there was a distinct history of this. Fortunately all the cases were notified early, and the Medical Officer of Health was thus able to remove the patients to hospital immediately, to re-vaccinate in each case all the other inmates of the house, and to carry out thorough disinfection. By this means the disease was prevented from spreading. In one case, unquestionably, a great risk was run. The patient, a woman, after being told that she was suffering from small-pox, refused to go into hospital, and escaped to a public house, where she remained a short time till she was found and removed. As soon as recovery was complete, she was brought up before the magistrates for exposing herself in a public place while suffering from small-pox, and a penalty was inflicted.

In the case of the nurse referred to above, it was understood when she entered hospital, on duty, that she had been re-vaccinated, but it was discovered after she had been at work for some hours that this was not so. Although the Medical Officer of Health at once performed the operation on the nurse,



it was too late to protect her entirely, for on the thirteenth day from the date she began work the eruption of small-pox appeared. The disease was much modified, and the patient recovered without being marked.

Although 43 cases of small-pox were received into the Hospital, during the year from neighbouring districts, it is quite certain that no one belonging to the Borough was infected from this source. This bears out the contention of the Medical Officer of Health, that there is little or no danger attending the policy pursued by the Sanitary Authority, in receiving cases from outside districts, under certain conditions and with suitable precautions and safeguards. It would appear that this is the opinion of the Government, judging by the spirit of the new Act for providing district infectious hospitals, which in effect corresponds to what has been done locally, having one hospital at Hyde, with facilities granted to surrounding districts for the accommodation of their cases.

**Scarlatina.**—Sixty-five cases were reported, but in no part and at no time did the disease assume serious epidemic form. The Medical Officer of Health thinks it may be fairly assumed that this was probably in great measure due to the promptitude with which so many of the cases were notified and removed. He wishes an even larger proportion of the notified cases were removed to hospital. There is no reason why every case of scarlatina detected in the district should not be treated in Hospital. This could easily be accomplished if certain of the parents could be induced to overcome the sentimental objection (there can be no other) they have to their children being taken to hospital. They would soon find what enormous advantages treatment there presented, not only saving trouble and expense, but giving the patients a healthy country life during convalescence. These remarks apply with greater force to the district of Newton than to other parts of the Borough.

The Medical Officer of Health has not had reason to suspect any milk-supply as being responsible for an outbreak; nor has he found it necessary to take steps for the closing of any School through its having been a focus of infection.

For the most part the cases were mild, only 3 proving fatal—two in the town and one at the hospital. The mildness is however, not without disadvantages, as it sometimes makes it difficult if not impossible to detect the disease in its early stages, cases occasionally not being recognised till they have communicated the infection to others.

**Diphtheria.**—Sixty-two cases of diphtheria were notified, of which 11 were fatal. So large a number of cases occurring is difficult to account for. "Have the cases been unusually



mild, so mild in fact in a great many instances as to lead the medical man in attendance to question whether the case is really diphtheria or only follicular tonsillitis, and that he has therefore given it the benefit of the doubt and notified? or was it another manifestation of a condition of ill-health produced by the long spell of dry weather and scanty water-supply?' The seven cases admitted to hospital were moderately severe, but recovered without any bad symptoms.

**Fevers.**—There was a large number (35) of cases of typhoid fever reported, but at the time they occurred the conditions of climate were such as tend to foster typhoid fever. Two only were removed to the Hospital, and one of the patients died soon after admission from intestinal hæmorrhage. In all there were 6 deaths from typhoid fever. As regards puerperal fever, there were only 4 cases notified, but seven deaths were recorded. No cases were removed to Hospital.

**Measles and Whooping-cough.**—Neither of these diseases being notified there is no way of judging of the extent of their prevalence except by the number of deaths registered year by year. In 1893, the number of deaths ascribed to measles was 25, and the number of deaths ascribed to whooping-cough was 14.

**Diarrhœa** is also not notified, but its prevalence is shown by the mortality therefrom. The number of deaths registered was 65, *i.e.*,  $8\frac{2}{3}$  per cent. of the deaths from all causes. Sixty out of the 65 were children under five years old. Undoubtedly this was mostly caused by the prolonged hot weather and scarcity of water, as well as the unusually foul condition of middens, and the water-courses still contaminated with sewage.

**Influenza and Acute Diseases of the Lungs.**—There was another outbreak of influenza during the autumn and winter of 1893. Though no deaths were registered as actually caused by it, a great many cases of fatal lung diseases (bronchitis, pneumonia, &c.) were due to it in the first instance. Thus 176 deaths were ascribed to acute diseases of the lungs, equal to a death-rate of 5.6 per 1000 living.

**Phthisis** appears to occasion about the same number of deaths annually. Forty-nine deaths were ascribed to this disease in 1893—a large number considering the great sanitary improvements made in the Borough recently.

**Infectious Diseases Hospital.**—During 1893, 112 cases of infectious disease were treated in this Hospital. Forty-five were cases belonging to the Borough, *viz.*: 7 small-pox 28 scarlatina, 7 diphtheria, 2 typhoid fever, and one doubtful. Sixty-seven were cases received from neighbouring



districts, viz.: 43 small-pox and 24 scarlatina. Out of the whole number there were but 3 deaths. One was an unvaccinated case of small-pox from Stalybridge, the second a case of malignant scarlatina, and the third was the case of typhoid just referred to as being due to hæmorrhage. The remaining 109 patients made absolute recovery.

Efforts to limit the spread of infectious disease by prompt removal of all notified cases to Hospital have not yet been so successful as the Medical Officer of Health could wish, except as regards small-pox, where he has had practically no difficulty in getting all patients into Hospital. In respect of scarlatina there is still a certain amount of prejudice to be overcome. Doubtless this prejudice is unreasoning and merely sentimental, but it exists in the minds of some and will take time to eradicate. Still the progress made in this direction is very hopeful, and before long the Authority may be able to materially lessen the incidence of scarlatina by at once isolating every centre of infection. At present the locality does not get the full value of the money spent on the Hospital, as it would were every infectious case, that could be safely removed, taken to Hospital. The Medical Officer of Health believes an Authority can quite as effectually subdue an outbreak of scarlatina as of small-pox, if people would only look on both diseases as highly infectious, and second the endeavours of the Authority to prevent infection being communicated.

No complaints have come to the ears of the Medical Officer of Health. The Hospital continues to bear, as hitherto, an excellent reputation.

An alteration in the drains is needed to divert surface water from the pipes leading to the settling-tank, and prevent them being silted up with gravel and sand washed from the main approach road and garden walks. Several times, through silting up caused in this way, the drain has burst and discharged its contents near the scarlatina ward, creating a nuisance.

There should be some kind of paved causeway leading from one building to the other, so that persons passing from one to the other may keep their feet dry.

The ambulance, which has been in use for some years, requires painting and some slight repairs.

**A van needed for infected clothing, &c.**—A covered van for the removal of infected clothing, &c., is not yet provided, though the want of such a vehicle was referred to in the last Annual Report. It is required for the conveyance of clothing, bedding, rugs, &c. to the steam disinfecter, or the new destructor, as circumstances require, and its use would certainly lessen any risk there may be in carrying infected things through the streets. Should the Corporation accede to the request of



some neighbouring Authorities, and allow certain clothing to be disinfected at the steam disinfector, there will be increased need for a covered van.

**Water-Supply.**—A very important improvement in the water-supply of the Borough has been effected by the completion and starting of the pumping station at Back Lane, for supplying Manchester water to the higher parts of the district, and so rendering it altogether independent, if necessary, of the local supply gathered from Werneth Low, &c. This will be of great use should there be another dry summer season, such as was experienced in 1893. There will henceforward be no ground for complaints, which have been frequent in the past, as to the condition of the water at Gee Cross. Although the amount of the water bill to be paid will be larger, ample compensation may be looked for in a lower death-rate and sickness-rate, especially under the head of diarrhoea, which was so fatal in 1893.

The Medical Officer of Health notes with pleasure that his recommendations as to the supply of town's water to the district of Gibraltar has been carried out, so that there will be no further need to use well-water for drinking purposes in this district.

**Sewage Works and Destructor.**—Another important local improvement is the completion and opening of the sewage works and destructor. The sewage works, by their efficient action, render the Hyde effluent practically innocuous, and so assist in the purification of the Mersey. The provision of a destructor, considered in connection with the emptying of privy-middens, etc., now undertaken by the Corporation, insures the destruction of a large quantity of noxious material which formerly was very difficult to deal with in a satisfactory manner.

**Middens, &c.**—A more general adoption of the water-carriage system is still needed, for "there are yet some terrible so-called ashpits in the district." The Medical Officer of Health is of opinion that in all places where the main drainage system is completed, the privy-middens ought to be converted into w.c.'s and dry ashpits, and thus do away with what is a source of danger and nuisance.

**Insanitary Property.**—Some progress has been made in altering insanitary property, with a view to its improvement, but two very bad properties before referred to are still untouched in the way recommended.

**The Licensing of Common Lodging-houses.**—The Medical Officer of Health draws attention to what he considers a defect in the Public Health Act, with regard to the licensing of common lodging-houses. He writes :—



"It seems to me that the Sanitary Authority ought to have ample power vested in them to revoke the licenses for these houses, and have them closed if it be considered that they have become unsuitable for the purpose by reason of alteration of surrounding property, sanitary defects, want of proper yard space, washing accommodation, or the discovery of circumstances which were not known or observed at the time of granting the licenses or for other good and sufficient reasons."

## MACCLESFIELD.

### Municipal Borough.

Medical Officer of Health—DR. G. BOWER.

Population at Census, 1891—36009.

Estimated population in middle of 1893—36009.

Area in acres - 3215.

Birth-rate per 1000 living—25·8.

Death-rate per 1000 living 20·6.

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

Deaths under one year to 1000 births—190.

This Urban Sanitary 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 is as follows:—

	Area in acres.	Population at Census.
East Macclesfield ...	874	9813
West Macclesfield ...	1706	17854
Part of Sutton ...	361	5060
Part of Hurdsfield ..	274	3282

The number of births registered in 1893 was 931, yielding a birth-rate which is 2·3 lower than the mean birth-rate in the Borough in the ten years, 1883-92. The number of deaths registered in 1893 was 744, excluding the deaths of persons brought into the Borough for treatment in the County Lunatic Asylum, Parkside, the Union Workhouse and Macclesfield Infirmary, yielding a death-rate which is one lower than the mean death-rate in the Borough in the ten years, 1883-92.

The birth-rate being year after year so low in Macclesfield is mainly attributable to the peculiar age constitution of the inhabitants, many of the people at the middle or reproductive period of life having emigrated in search of work, an undue proportion of aged persons and children is left behind.

The death-rate during the first quarter of the year was 18·8, during the second quarter 17·3, during the third quarter



19.7 and during the fourth quarter 26.6. The corrected death-rate is 21.4 in East Macclesfield and the same in West Macclesfield, in Sutton it is 19.8 and in Hurdsfield 19.3. East Macclesfield has been generally looked upon as the worst district from a sanitary point of view, but West Macclesfield and Sutton (both situated in the west part of the town) are specially exposed to northerly and easterly winds and this increases the local mortality during the cold weather, especially when influenza is prevalent. Indeed the high-death in the last quarter of the year is mainly owing to an epidemic of influenza, and the west portion of the town was most seriously affected.

The proportion of deaths among infants is large, as it usually is in the Borough. The causes of this, the Medical Officer of Health points out, were fully dealt with in the Annual Report for 1890.

The number of deaths from zymotic diseases was 68, viz. : 13 scarlatina, 1 diphtheria, 4 croup, 3 typhoid fever, 2 puerperal fever, 1 erysipelas, 1 measles, and 43 diarrhœa. The zymotic death-rate is fairly low, as it usually has been in the Borough.

The number of cases of infectious disease notified was 277, viz. :—6 small-pox, 250 scarlatina, 5 diphtheria, 1 croup, 13 typhoid fever and 2 continued fever.

**Small-pox.**—The first case of this disease was notified on January 14th, and two more cases were notified a week later. Another case was notified on February 4th, and another on the 11th, and the last case on April 1st. All these cases were imported into the town, and were forthwith isolated, 2 in the infectious wards at the Workhouse, and 4 in the Borough Infectious Diseases Hospital. Of the four received into the Borough Hospital, 3 bore marks of vaccination and had the disease in a mild form, the other had never been vaccinated and was a very severe case of confluent small-pox. Three were removed from common lodging-houses and one from a private house in Water Street. The two treated at the Workhouse were tramps. In each case after removal of the patient all persons who had been exposed to infection were vaccinated or re-vaccinated, where necessary,

**Measles** was epidemic during the latter part of 1892, but it only caused one death in 1893. The number of cases of the disease is not known.

**Scarlatina** was exceptionally prevalent during the whole year—52 cases were notified during the first quarter, 54 during the second quarter, 91 during the third quarter, and 53 during the fourth quarter. In East Macclesfield were 63 cases, in West Macclesfield 151, in Sutton 23, and in Hurdsfield 13.



Thirteen deaths were caused by the disease, but unfortunately this does not represent all the mischief done, as many children are permanently injured by scarlatina and its numerous complications--constitutions that would otherwise have been sound are weakened, and lives rendered less valuable to the community. Owing to the prevalence of the disease the public schools were closed for one month from June 20th, which doubtless had a deterrent effect on the spread of the epidemic, but there is no method of dealing effectually with outbreaks of scarlatina without means of isolating the earlier cases as they occur. The Medical Officer of Health does not think the disease would have spread to anything like the extent it did, had he been able to isolate the cases at a time when it was necessary to keep the small temporary hospital for cases of small pox. When this hospital, later on, was open for the reception of scarlatina cases, the mischief had been done and there were many centres of infection in the town. Still, no doubt, by the isolation of 68 cases in hospital much good was done. The usual means were adopted for preventing the spread of infection. Each case on being reported was at once visited, verbal and printed instructions were given to those responsible for the care of the case, and information was obtained as to the origin of the disease, milk-supply, school attendance, &c. If any child from an infected house be attending school information is at once given to the school authorities. After removal to hospital, recovery or death of patient, his rooms and clothing are disinfected.

It may be noted also that printed bills were posted throughout the town drawing attention to the prevalence of scarlatina and recommending precautions against its spread.

**Fevers and Diphtheria.**—Of the 13 cases of typhoid fever seven were notified in August, September and October. The disease was not limited to any part of the town, and one of the fatal cases was in East Macclesfield, one in West Macclesfield and one in Sutton. The 2 cases of continued fever occurred also in the autumn. The 2 fatal cases of puerperal fever were in West Macclesfield and Sutton. The 5 diphtheria cases were notified in June, September and December. The one fatal case occurred in Sutton. The usual precautions were taken, each case being repeatedly visited, and the necessary disinfection carried out. Sanitary defects have been sought for on infected premises and when found remedied.

**Diarrhœa.**—The number of deaths attributed to this disease is larger than in any year since 1874. The prevalence of this disease and the mortality therefrom were not confined to any part of the town, but it was most fatal in East Macclesfield. Seventy-six per cent. of the deaths were of infants under



a year old, and about the same proportion occurred in the third quarter of the year. The exceptionally long period of warm weather in the summer doubtless favoured the development of the disease. Dr. Ballard, of the Local Government Board, in a Report on the causation of infantile diarrhœa says "that the cause of infantile diarrhœa resides ordinarily in the superficial layers of the earth." The exceptional fatality of the disease in East Macclesfield may be attributed to its being the worst drained portion of the town.

**Phthisis.**—During the year consumption of the lungs was returned as the cause of death in 68 cases. Thus as many died of this one disease as died of all the zymotic diseases added together, notwithstanding scarlatina and diarrhœa were exceptionally prevalent.

The following Special Report was presented by the Medical Officer of Health to the Health Committee in reference to the recommendation of the County Council to add phthisis to the list of notifiable diseases.

Mr. Chairman and Gentlemen,

The Town Clerk has forwarded at your request and for my opinion thereon the enclosed circular from the County Council recommending Phthisis to be included in the list of diseases in the Infectious Disease (Notification) Act.

There can be no doubt that Phthisis is an infectious disease, and I think much benefit might be derived from its notification:—"by the authority giving printed instructions to those having care of the patients as to the best means to be adopted to avoid the infection,"—"by the distribution of suitable disinfectants during the illness,"—"and by the thorough disinfection of rooms that have been occupied, or clothes that have been used by infected persons."

Dr. Vacher, the Medical Officer of Health to the County Council in his annual report for the year 1892, says in regard to the mortality from Phthisis in Cheshire:—"In the Municipal Boroughs the death-rate was 1.53, in the Urban Districts 1.29, and in the Rural Districts 1.16. These are fairly high death-rates for one disease. In two towns this death-rate was exceptionally high, in Macclesfield it was 2.02, and in Altrincham 2.37." From this it will be seen that Macclesfield occupies an undesirable position in regard to the prevalence of this disease, and as about 12 per cent. of the total number of deaths occurring annually in the town are due to Phthisis, if anything can be done to reduce this mortality it is well worth your careful and considerate attention.



In my annual report for the year 1892, page 16, to which I would refer you, I have briefly shown the peculiarities of the infection in Phthisis, and given a few necessary simple precautions for its prevention.

The principal source of the infection as I have pointed out in this report is the expectoration, (of which especially in the later stages of the disease, and when there can be no doubt of its presence, there is a considerable quantity,) and it has been estimated that as many as twenty millions of the micro-organism or germ peculiar to this disease may be found in one day's expectoration. One would therefore expect this awful disease to be even more prevalent than it is, but happily for many this minute germ requires certain particular accommodation before taking up its fatal residence in the lungs of people, and although most of us must at times have been exposed to and have inhaled the poison, we have been enabled constitutionally to give the undesirable tenants notice to quit before they have been able to work much mischief.

It has been noted by Dr. Thomas Harris, Physician to the Manchester Royal Infirmary, that in making post mortem examinations of the human body, whatever may have been the cause of death, there are found in about 50 per cent. scars in the lungs indicative of old infection by Phthisis. This shows that most of us run a considerable danger from this disease.

A constitutional weakness to contract Phthisis is probably frequently inherited, and amongst other predisposing causes are debility produced by insanitary surroundings, overcrowding, back-to-back houses, houses in damp situations, houses with insufficient light and air, &c., and by the want of sufficient and suitable food. People recovering from various diseases such as pleurisy, bronchitis, &c., are also very liable to the infection.

During the depression in the staple trade of the town many persons have undoubtedly, owing to the small wages received, been unable to purchase food of a sufficiently good quality to enable them to withstand the severe weather, and this combined with other predisposing causes as mentioned above, has been probably the main cause of the greater incidence of phthisis in Macclesfield as compared with other portions of the county.

In conclusion, gentlemen, I can only reassert that in my opinion it is desirable that this fearfully fatal disease should be introduced among those already in the Notification Act.

GEORGE BOWER.



**Hospital Accommodation.**—Four cases of small-pox, 68 cases of scarlatina and one case of typhoid fever have been treated in the Infectious Diseases Hospital during the year. Three deaths occurred, viz.: 2 from scarlatina and 1 from typhoid fever. The question of providing better accommodation for infectious cases will soon become one of urgency, as the present temporary building is fast becoming dilapidated and cannot wear much longer.

**Common Lodging houses.**—There are 19 of these registered in the Borough. However, two of them are now being used as private dwellings. During the year, one house has been added to the number registered, and in another house the keeper has been changed. An average of 170 persons per night were accommodated in these houses in 1893. Each house has been visited at least once a week. Generally the houses have been kept in a cleanly manner, and the owners have been always willing to assist the health authorities.

Most of these houses, although not such as could be condemned as unfit for habitation, are old fashioned and not altogether suitable for the purpose for which they are used. A model lodging-house would be a great convenience to the town.

**Slaughter-houses.**—There are 27 registered slaughter-houses in the Borough, all of which are in use. No registrations have been effected during the year. The houses are visited regularly—in all 863 visits of inspection have been made during the year. No serious delinquencies were noted, due attention being paid to cleanliness.

**Dairies, Cowsheds, and Milkshops Order.**—There are 64 premises registered under this Order. Three have been placed on the register during the year, and two have been removed from it. Twelve premises have changed keepers. All the premises have been visited, but there has been no occasion for taking proceedings in respect of any.

**Bakehouses.**—There are about 40 bakehouses in the Borough. All are occasionally visited by the Medical Officer of Health and Inspector, and thorough cleanliness insisted on. In one instance it was necessary to take action for the removal of a privy and ashpit closely adjoining a bakehouse. The terms of the notice were complied with.

**The Sale of Food and Drugs Act**, under which adulteration is restrained, or prevented, or punished, was put in force in 1893 more than in some previous years. In all 33 samples were submitted to the Borough Analyst, viz.:—11 samples of milk, 5 of butter, 6 of cheese, 3 of bread, 3 of lard, 2 of vinegar, a sample of flour and a sample of rum. All



were found pure except 2 samples of butter, which were reported to be margarine. In one case the vendor of the margarine was warned by the Health Committee, and in the other proceedings were taken before the local justices, and a fine of one shilling and costs was imposed.

**Insanitary Dwellings.**—With reference to the action taken, under the Housing of the Working Classes Act, 1890, against the owners of certain insanitary dwelling-houses in 1891, the Medical Officer of Health reports that many have been since repaired and improved, pulled down, made into warehouses, &c. Closing orders have been recently obtained against the owners of the following 45 dwelling-houses:—Nos. 5 and 14, Garden Street, Sutton, Nos. 1, 3, 5, Garden Court Square, No. 1, Court 1, Lunt Hill, 63 and 65, Derby Street. 60, 62, 64, and 66, Buxton Road, 3 and 4, Shrigley Street, 13 and 17, Gosling Street, 10, Watercotes, 1, Orchard Passage, 3 and 4, Court, 1, Derby Street, 1, 2, 3, and 4, Court 5, Derby Street, 2, Shaw Street, 1, 2, 6, and 7, Court 1, Shaw Street, 3, Court 3, Chestergate, 5, and 6, Court 8, Chestergate, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, and 14, Pownall Square.

**Sanitary Improvements, &c.**—In recent years there has been a good deal to chronicle in the way of improvements, paving, sewerage, &c., but in 1893 there has been a falling off in this useful sanitary work. The greatest improvement effected has been the widening of Great King Street at its contracted outlet into Derby Street.

Around St. Paul's Church are streets long in need of repair. They are in a miserable condition, and a source of danger to the large number of children attending St. Paul's Church Schools. Daybrook Street, near another school, is in a similar condition and must be injurious to the health of its inhabitants. Putting this street in order has been talked of and put off until a more convenient season for the last forty-five years.

**New Public Park.**—As a contrast to the above, it is pleasant to refer to the latest acquisition—a fine plot of land in Buxton Road, beautifully laid out as a public park, and presented to the town by Mr. F. D. Brocklehurst. This will be the means of giving healthy recreation to many poor children in the neighbourhood. In connection with the new park, a well-made road has also been formed by the same generous donor. This will make a fine promenade, and be a very convenient thoroughfare between Buxton Road and the lower part of Hurdsfield.

**Inspector's Report.**—This is addressed to the Medical Officer of Health, and issued with his Report. As regards nuisances it states that there were 145 complaints received and



495 discovered, making 640 nuisances, all of which were abated during the year. In particular there were 213 privies and ashpits repaired and improved, 192 house-drains repaired and cleansed, and 75 sink waste-pipes disconnected from sewers. The remaining 160 nuisances were various, and their removal was obtained in different ways. Sixty-nine new privies were built. Three persons were summoned before the justices for offences under the Public Health Act. No less than 2,980 visits were paid to houses specially inspected on account of infectious disease.

The number of canal boats inspected in the Borough was 43. No offences are reported.

The only contagious disease reported among animals within the Borough was sheep scab.

## STALYBRIDGE.

### Municipal Borough.

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

Population at Census, 1891—26,783.

Estimated population in middle of 1893—27,231.

Area in acres—3,135.

Birth-rate per 1000 living—27·0.

Death-rate per 1000 living—25·0.

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

Deaths under one year to 1000 births—224.

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

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

During 1893 the number of births registered in the Borough was 736, and the number of deaths registered (including the death of a patient from Stalybridge, which took place in the Hyde Hospital) was 629. There were also 54 deaths registered in Ashton-under-Lyne (46 in the Workhouse and 8 in the Infirmary) of persons belonging to Stalybridge. Adding these to 629 it makes the sum of the Stalybridge deaths 683. The birth rate is rather low. The death-rate is very high, being 2·6 higher than the mean death-rate of the District during the five years 1888-92.

One hundred and nine deaths were recorded from the seven principal zymotic diseases, viz:—1 small-pox, 25 measles, 4 scarlatina, 8 diphtheria, 17 whooping-cough, 4 typhoid fever,



and 50 diarrhœa. The principal zymotic diseases death-rate is very high, being 1·8 higher than the corresponding mean death-rate of the District during the five years 1888-92.

The proportion of deaths of infants under one year of age to 1000 births is very large.

The Borough is divided in four wards. The following return shows the great difference as regards mortality in the wards during 1893.

	Death-rate.	Deaths under 1 year to 1000 births.
Lancashire Ward ...	26·1	237
Staley Ward ...	19·8	176
Dukinfield Ward ...	27·6	285
Millbrook Ward ...	16·1	125

**Zymotic Diseases.**—The cases of zymotic disease coming to the knowledge of the Medical Officer of Health were as follows :—14 small-pox, 45 scarlatina, 12 diphtheria, 3 croup, 27 typhoid fever, 1 puerperal fever, 20 erysipelas, and 96 diarrhœa.

**Small-pox.**—During the year 14 cases of small-pox were notified in different parts of the Borough. Six were in Lancashire Ward, 3 in Staley Ward, 2 in Dukinfield Ward, and 3 in Millbrook Ward. The patients were all removed to the Hyde Hospital, where all but one recovered. The infected bedding, &c., was burnt and the houses fumigated with sulphurous acid. The inmates of the houses were re-vaccinated.

**Visit of an Inspector from the Local Government Board.**—In June, Dr. Wilson, one of the Medical Inspectors of the Local Government Board, visited the Borough, and made a sanitary survey thereof. He afterwards attended a meeting of the General Purposes Committee, and recommended certain measures with a view to dealing with cholera and other infectious diseases. In September the Sanitary Committee met, and, having duly considered these recommendations, informed the Local Government Board as follows :—

1. That the Committee have made arrangements for a temporary hospital for the isolation of persons suffering from infectious disease.\*

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\* In answer to inquiries with reference to this, the Medical Officer of Health writes, under date February 26th, 1894.—“Some time ago the Corporation bought a plot of land with house, with a view to converting it into a hospital, but never completed it, and, in June last, after Dr. Wilson's visit re cholera, they decided to use it if any cases of cholera occurred, but none arising they have abandoned the idea; and the only hospital accommodation we have is by arrangement with Hyde to take any case of small-pox.



2. That the Committee are taking into their consideration the disposal of excreta and refuse
3. That the staff of scavengers has been increased.
4. That the Council are endeavouring to obtain powers to carry out a sewage scheme, and are acting under the advice of a competent engineer.
5. That the Committee cannot at the present time see their way to devise any scheme under the Housing of the Working Classes Act, 1890.

**The Infectious Disease Notification Act.**—On September 11th, a special meeting of the Council was held, and the following resolution was duly passed:—

“That in view of an epidemic of choleraic diarrhœa, this Council doth hereby order that the provisions of the Infectious Disease (Notification) Act, shall within the Borough of Stalybridge apply to cases of choleraic diarrhœa (including diarrhœa) up to and including the 31st day of October next.

“Dated this 12th day of September.”

In consequence of the above resolution 96 cases of diarrhœa were reported. In each case the Medical Officer of Health visited the premises and examined them, and any defects discovered the landlords were at once required to remedy.

In all cases of zymotic disease the houses are at once visited by the Medical Officer of Health and the Inspector of Nuisances. Printed instructions for the prevention of the spread of the disease are left at the house and disinfectants supplied. In all cases the houses are fumigated with burning sulphur, and in severe cases the bedding and clothing are burnt. The premises are also examined to ascertain their sanitary condition. On any defects being discovered, steps are immediately taken to have the premises put in proper order.

**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.

**The Sale of Food and Drugs Act.**—Under this Act, 8 samples (6 of milk, 1 of pepper and 1 of coffee) 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.**—A list of 17 properties is given, which were in bad sanitary condition, but have been put in proper order under the superintendence of the Borough Surveyor.



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

**Inspector's Report.**—The Inspector reports that 483 nuisances have been abated during the year, and 69 houses have been fumigated. The emptying of ashpits is supervised. During the year there were 5861 emptyings. The number of loads removed was 8231½.

**Temperature and Rainfall.**—The Medical Officer of Health submits the following tabular statement showing the mean temperature and depth of rainfall during each month in the year. The results were recorded at Stalybridge.

1893.	Temperature.				Rainfall 12 inches above ground.
	Maximum in Shade.	Minimum in Shade.	1 foot below ground.	4 feet below ground.	
January ...	40	31	30	38	1·70
February...	44	35	35	41	4·39
March ...	54	37	35	42	0·71
April ...	62	42	40	46	0·63
May ...	63	43	45	50	3·37
June ...	68	51	46	55	2·38
July ...	68	54	39	58	3·43
August ...	71	55	39	59	3·14
September ...	61	47	31	56	4·11
October ...	56	43	25	52	2·83
November ...	45	35	...	46	3·16
December ...	44	35	37	43	3·95

## ALTRINCHAM.

### Urban Sanitary District.

Medical Officer of Health -- DR. A. GOLLAND.

Population at Census, 1891—12440.

Estimated population in middle of 1893—12766.

Area in acres—662.

Birth-rate per 1000 living - 28·2.

Death-rate per 1000 living—17·7

Death-rate from seven principal Zymotic diseases—17.

Deaths under one year to 1000 births—141.



In 1893, the number of births registered was 360; and the number of deaths registered was 227, excluding the deaths of 8 strangers which took place in hospital. The birth-rate and death-rate are about equal to the corresponding mean rates in recent years. Of the 227 deaths 51 were among infants under a year old, and 69 were among persons of 65 years and upwards.

The mortality from the seven principal zymotic diseases was not high, being 22 in all, viz., 1 death from measles, 1 from diphtheria, 1 from whooping-cough, 1 from typhoid fever, 3 deaths from scarlatina and 15 from diarrhoea. There were also 1 death from rheumatic fever, 23 deaths from phthisis, 54 from bronchitis or pneumonia, 23 from heart disease and 6 from violence.

The diarrhoea which caused so large a proportion of the zymotic mortality occurred in the summer quarters. Two-thirds of the fatal cases were among children under 5 years old.

Small-pox has been happily absent. Due care was taken to discover any imported case. A watch was kept on the various lodging-houses, and the keepers informed of their duty to at once report any case of suspicious illness.

**Scarlatina.**—It will be remembered that at the close of 1892 this disease was epidemic in the district. It continued to prevail through the earlier half of 1893. In all 99 cases were reported from 64 houses, and 88 of the cases were removed to the Fever Hospital. Eighty were discharged, 3 died and 5 were under treatment at the close of the year. The average time patients remained in hospital was 41·6 days. From first to last the type of the disease in this epidemic was very mild. At the close of the year it seemed passing away—only 8 cases were reported during November and December.

As regards cholera a sharp watch was kept lest it should appear; and a tent behind the hospital was in constant preparation to isolate any case observed.

One case only of diphtheria was reported, and that proved fatal.

Three cases of typhoid fever were reported, of which one was fatal.

Nine cases of erysipelas were reported and all recovered.

Measles is not required to be reported, but a few cases were noticed and there was one death.

A few cases of whooping-cough were also noticed. One terminated fatally owing to pneumonia.

**Phthisis.**—There were 23 deaths recorded from this disease. Attention having been called to the unusual number of deaths from phthisis in 1892, the Medical Officer of Health



submitted a special report thereon to the Local Board giving good reasons for regarding the number as exceptional and not due to any unhealthiness of the town. In 1893 the phthisis death-rate is about equal to the usual rate in urban districts. It is the belief of the medical men practising in the town that a considerable number of cases of phthisis are sent to Altrincham from other districts, owing to the suitability of the climate for chest diseases generally.

The mortality from diseases of the respiratory organs, other than phthisis, was again rather high in 1893. Many of the cases occurred during November and December and were no doubt largely due to the prevalence of influenza which was epidemic at this time. The type of the influenza was not as severe as in former years.

To sum up—the year, so far as regards deaths from preventable diseases, has been a satisfactory one. Though the general death-rate is not as low as one could wish, considering the excessively high temperature in summer and the influenza in winter, it is fairly satisfactory.

All houses in which cases of infectious sickness were notified were disinfected.

**Water Supply.**—The water, which comes from Manchester, has been analysed from time to time and found satisfactory. As was the case in many districts during the summer, the quantity delivered was deficient, and when the supply ran down the quality deteriorated somewhat. Taking into consideration the drought experienced the supply was surprisingly little affected.

**Common Lodging-houses** were duly inspected during the year. In all 64 visits of inspection were made.

**Slaughter-houses** were also kept under supervision. 64 visits of inspection were made.

**Dairies and Bake-houses.**—All cow-sheds and milk-houses were visited twice during the year. In one instance only was it found necessary to serve a notice to clean the premises. All the bake-houses were also visited twice during the year. Three notices to clean were required and served. In one bake-house the drains were altered and made satisfactory.

**Canal Boats.**—Sixty visits of inspection were made to 53 canal boats. In 5 instances no certificate of registration could be produced. On the remaining 48 boats was accommodation for 170 persons, and they were occupied by 118 persons, that is to say, 75 males, 24 females and 19 children under twelve years of age. There were no cases of infectious sickness, and the cabins were mainly in good order. In respect of those



found unsatisfactory, notices were served on the owners to paint and clean.

**Nuisance abatement.**—Fifty-four notices were served for the abatement of nuisances, and the terms of the notices were in every case complied with. These notices required the removal of fowls and animals from back yards, &c., the removal of accumulations of refuse, the provision of drainage, the repair of drains, soil pipes and rain spouts, as well as the abatement of overcrowding and smoke nuisance. Most of the work in connection with this department was done without the serving of formal notices. Thus, in the course of the year, 27 yard drains and 3 cellar drains were put in order, 22 back yards were paved, 4 W.C.'s were altered and 2 sink-pipes disconnected, 151 ash-pits were roofed and ventilated, 67 ashpits were provided with proper doors and 25 ashpit drains were put in order, 8 privy-middens were re-constructed or repaired and 2 were converted into W.C.'s. Two occupiers were cautioned for letting their chimneys get on fire.

## HIGHER BEBINGTON.

### Urban Sanitary District.

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

Population at Census, 1891—1421.

Estimated population in the middle of 1893—1481.

Area in acres—699.

Birth-rate per 1000 living—35·1.

Death-rate per 1000 living—16·2.

Death-rate from seven principal Zymotic diseases—2·7.

Deaths under one year to 1000 births—57.

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 Sanitary District of Higher Bebington.

In 1893, the births registered in the district numbered 52, the deaths (including one death in the Workhouse belonging to the district) numbered 24.

The death-rate is low, the birth-rate fairly high. The proportion of deaths among infants and young children is exceptionally small. The mortality in middle life is increased by 4 deaths from consumption and 5 from heart disease. In 1892 there were 3 deaths from heart disease and there was only one death from consumption. In 1893, 3 deaths were referred to bronchitis or pneumonia, and in 1892 6 deaths were referred to these causes.



There was one death from influenza, one from erysipelas, one from measles, one from whooping cough, and there were two deaths from infantile diarrhoea. Thus the seven principal zymotic diseases were the occasion of 4 deaths in 1893, while in 1892 these diseases occasioned 8 deaths.

The cases of infectious diseases notified were 3 cases of diphtheria, 2 of erysipelas, a case of scarlatina and a case of typhoid fever. Enquiries were made respecting these, and proper precautions taken. In none did any extension of the disease take place. A case of diphtheria, one of erysipelas and one of scarlatina were removed to hospital. Accommodation for cases of infectious disease is provided by the Joint Hospital Board, of which the district is a contributory.

The Medical Officer of Health made a general inspection of the district in June and again in November, and was gratified to observe the improvements effected by the recent conversion of privies into water-closets, in a number of instances where specially required. This work had been done properly and other privies were being dealt with: 6 were converted during the year. Several milk farms were also visited, and found in good order.

The district is supplied throughout with water from the Wirral Water Works, and is on the whole well sewered. The main sewer has such a good fall that it does not require flushing, beyond what it receives from the watercourses which flow through it; elsewhere a hose is used when required.

Cases of overcrowding are occasionally reported, but they are few in number.

The removal of nuisances is promptly attended to by the able Inspector. Twelve registered dairies and cowsheds and two bakehouses are regularly inspected. Six houses were inspected and disinfected after infectious diseases. Privies and ash-pits are emptied about every 4 weeks by the Local Board's contractor.

There are no slaughter-houses in the district, and no lodging-houses.

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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 1893—5477.

Area in acres—1054.

Birth-rate per 1000 living—26·2.

Death-rate per 1000 living—15·8.

Death-rate from seven principal Zymotic diseases—2·1.

Deaths under one year to 1000 births—118.



This Urban Sanitary District includes the whole of New Ferry.

In 1893, the births registered in the district numbered 144; the deaths (including three deaths in the Workhouse belonging to the district) numbered 87. Both death-rate and birth-rate are low, but the death-rates in 1891 and 1892 were even lower. The proportion of deaths among infants is not large.

There was one death from scarlatina, one from typhoid fever (in the Workhouse), one from puerperal fever, one from rheumatic fever, and there were two deaths from whooping-cough, two from influenza, seven from diarrhœa (of which three were infantile diarrhœa), five from phthisis, 20 from bronchitis or pneumonia, and seven from heart disease. The number of deaths from the seven principal zymotic diseases, taken together, was 12 in 1893, the same number as in 1892. In 1893, the most fatal zymotic disease was diarrhœa; in 1892, the most fatal was whooping cough.

The cases of infectious diseases notified were 12 cases of scarlatina, three of diphtheria, four of fever (three typhoid and one puerperal), and two of erysipelas. Out of these, three cases of scarlatina, two of typhoid fever, and one case of diphtheria, were removed to hospital; the remainder were isolated at home. The cases occurred at intervals throughout the year; they were investigated and action taken as required for getting rid of insanitary conditions, and for disinfection and cleansing of the premises.

The Medical Officer of Health visited the district a number of times, making general and special inspections, and reported thereon.

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

Proceedings under the Housing of the Working Classes Act have been taken in regard to insanitary property in the Wynt. A Closing Order was obtained; the property is now unoccupied and will shortly be demolished.

During the year 39 privies have been converted into water-closets. In the case of one owner proceedings had to be taken to enforce the conversions. Notices have been served for the conversion of 30 more privies.

The Local Board undertakes the emptying of privies and ashpits, this work being in charge of Mr. Young, the Board's Surveyor and Inspector. The receptacles are emptied in rotation, at regular and short intervals. Ninety houses in the Port Sunlight estate are provided with movable receptacles for the purpose, and other owners of property are beginning to follow the example.

Mr. Young reports that with one or two exceptions, every



house is now supplied with water from the mains, several out-lying cottages having been brought into connection, with some difficulty, during 1893. He has inspected nearly every house in the district during the year. In 18 cases it was found necessary to have the drains cleansed and repaired; and in three cases the removal of animals, kept so as to cause a nuisance, was effected.

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

Cases of overcrowding are occasionally reported, but they are few in number.

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

## BOLLINGTON.

### Urban Sanitary District.

Medical Officer of Health—DR. J. ALLEN.

Population at Census, 1891—3,913.

Estimated population in middle of 1893—3,913.

Area in acres—494.

Birth rate per 1000 living—27·8.

Death-rate per 1000 living—14·5.

Death-rate from seven principal Zymotic diseases—0·2.

Deaths under one year to 1000 births—137.

In 1893 the births registered in this district numbered 109, and the deaths numbered 57. The death-rate is decidedly low—2·1 lower than in 1892. Of the deaths one was attributed to scarlatina (the only death from zymotic disease), 6 were attributed to phthisis, 14 to bronchitis or pneumonia, and 3 to heart disease.

The number of cases of infectious disease notified was 32, viz :—24 cases of scarlatina, 1 case of typhoid fever, and 7 cases of erysipelas. One of the cases of scarlatina was twice notified.

**Scarlatina.**—Six cases of scarlatina of a mild character occurred between January 28th and June 29th. Five were in the western portion of the town (as divided by the Canal and the Aqueduct), and one in the eastern portion. The remaining 18 cases occurred between October 14th and December 22nd, and were all in the eastern portion of the town. The one death from this disease took place at Mount Pleasant on November 5th. Scarlatina was prevalent in neighbouring localities during the year, and it is not unlikely the infection may have been introduced from the adjoining Rural Sanitary District. The Medical Officer of Health is of opinion that had not the Notifi-



cation Act been in force the disease would have spread to a much greater extent. There was considerable difficulty experienced in carrying out disinfection owing to the want of a disinfecting apparatus. Most of the subjects of the disease were school children, many belonging to the Church Street Infant School. The only adult patient was a man whose three children were also affected. The cases were isolated as far as possible, and no children were permitted to attend school from an infected house.

**Typhoid Fever.**—The only case of this disease occurred in Church Street in March. The patient, a young married man, while living in Manchester, was taken ill. Not progressing satisfactorily he came to Bollington for change of air, where, after passing through a severe and well marked attack of typhoid fever, with lung complications, he recovered.

**Erysipelas.**—The seven cases of erysipelas reported occurred at irregular periods. Five were in the eastern and two in the western portion of the district. They were mild cases, and all recovered.

The beautiful weather and abundant sunshine had, no doubt, considerable influence in promoting the health of the district in many ways; though this salutary effect would be diminished somewhat by the excessive drought that unfortunately dried up many of the springs upon which at present the people of Bollington have to depend for their supply of water.

**Water Supply.**—The Local Board having kept the water question before them, on the 23rd May, 1893, submitted a sample of water taken from Mill Brook Spring, Rainow, where there is a never-failing supply, to Mr. Lois Siebold, chemist of Manchester. His opinion, after careful examination, was favourable. He said "that he found it to be a perfectly wholesome drinking water, and quite suitable for domestic use." Professor Boyd Dawkins, of Owen's College, Manchester, who has been over on several occasions during the past year, to inspect the district and country around, with a view of ascertaining the best source of supply, concurred. He further states "that there is a sufficient quantity of pure water available in the township of Rainow (at different places, which he names) to supply the whole of Bollington." The Board have therefore arranged with the owners for possession of a plot of land at Rainow, and are now taking the necessary steps to prove whether or not the supply will be adequate.

**Notification of Infectious Disease.**—When the Act requiring certain infectious diseases to be reported to the Sanitary Authority was adopted by the Local Board



in 1890, the Medical Officer of Health advised that measles should be included among the infectious diseases to be notified, as its spread would be diminished thereby; but his suggestion was not adopted on the ground of expense, the disease, moreover, being looked upon by some as inevitable and of little moment. This year the notification of measles was again brought forward, coupled with the notification of another disease now universally conceded to be infectious. The Cheshire County Council, towards the close of the year, recommended every Sanitary Authority in the County who had adopted the Infectious Disease Notification Act to pass the necessary resolution extending the interpretation of infectious diseases in such Act, so as to include phthisis. Accordingly, on December 16th, notice of the following resolution, to be moved at a meeting called for January 4th, 1894, was sent out by the Clerk:—

“That in accordance with the advice of the Medical Officer, this Board resolves that Measles and Phthisis be henceforth included in the list of infectious diseases required to be notified to the Medical Officer of Health, under the provisions of the Infectious Disease Notification Act, 1889, in force in this district; and instructs its solicitor to take steps to obtain the necessary powers.”

At this meeting of the Board the resolution was moved in an eloquent speech by Mr. King, and seconded by Mr. Greg, but on being put to the vote it was lost by 5 votes to 4. The Chairman and another member of the Board who was present did not vote.

**Bad Condition of some Streets.**—There is no improvement to be noted in the condition of the back streets to which attention was directed by the Medical Officer of Health in his last Annual Report. Park Street, Princess Street, and Silver Street are specified as being in a particularly bad state of repair. Greenshaw Lane and Water Street (the latter having houses and shops on both sides) are in an abominable condition; and a length of main road near to Garden Street, which has been relaid with stone paving within a comparatively recent period, is already so full of hollows and ridges as to be dangerous to vehicular traffic. Whether in this case it is owing to incompetency on the part of the men employed or to defective material, or to both combined, remains to be determined.

**Cemetery, and Elementary Schools.**—In previous Reports the Medical Officer of Health has referred to the Churchyard as being nearly full and to the insanitary and overcrowded condition of the Church Day Schools; but up to the present nothing has been done. With regard to school



accommodation, he suggests that if the managers find themselves unable to raise the necessary funds so as to put their schools into a thoroughly sanitary state, they should at once hand them over to the management of a School Board.

**Smoke Nuisance.**—The attention of the Medical Officer of Health, as well as that of the Inspector, has on several occasions been directed to a serious nuisance arising from an excessive amount of black smoke that frequently escapes from a low chimney on the roof of a shed at Messrs. Neaves' Hatworks. That it is very detrimental to the health of the inhabitants of the lower end of Lord Street, but more especially of the people occupying Lower Mill Cottage, there can be no doubt whatever.

**Cricket and Recreation Ground.**—Through the kindness and liberality of Mr. Francis Greg, J.P., C.C., the people of Bollington have one of the most beautiful cricket grounds in the county. In a central position, well sheltered by trees, with tastefully laid out grounds, it forms a very pretty park. When it is considered that for the most part the inhabitants are employed in cotton mills, print works, hat works, bleaching rooms, and the like, where they are compelled in many instances to breathe a highly heated and dust laden atmosphere, it must be evident that such a place will be greatly appreciated by them, and cannot but be conducive to their general health. The Medical Officer of Health hopes that the Board will ere long be induced to follow Mr. Greg's example, if only to a limited extent. Its own land at Pool Bank, for instance, might be considerably improved in appearance, and utilised for such a purpose, and the "rubbish tip" in Allcock's field (which is somewhat of a necessary evil, although certainly in the wrong place) might be made much less unsightly. A very little outlay in arching the brook course, levelling the ground, and laying it down with grass, would do this.

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## BOWDON.

### Urban Sanitary District.

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

Population at Census 1891—2792.

Estimated population in middle of 1893—2840.

Area in acres—850.

Birth-rate per 1000 living—15·8.

Death-rate per 1000 living—13·3.

Death-rate from seven principal Zymotic diseases—0·7

Deaths under one year to 1000 births—111.



The Medical Officer of Health in the beginning of his Annual Report refers again to the pollution of the river Bollin and the want of activity manifested by the Local Board in not suppressing a dangerous nuisance. He states that the river is so filthy it poisons the air as it flows, and at each inspection of it its water appears to be worse than before.

The number of births registered in the district was 45 and the number of deaths was 38. The birth-rate and death-rate are both low, as they usually are in this district. The only deaths ascribed to the chief zymotic diseases, were two from the diarrhoea of infants. There was also one death from erysipelas, one from phthisis, 8 from bronchitis or pneumonia and 8 from heart disease.

The general health of the district is good. A wave of influenza passed over it at the end of the year. It was severe while it lasted, but happily of very short duration. Two cases of typhoid fever were notified. The cause could not be traced in either case. One was removed to hospital, both recovered. Seven cases of scarlatina were notified, but none proved fatal. Three were removed to hospital.

With reference to the isolation of infectious cases, the Medical Officer of Health points out that the two Urban Districts of Bowdon and Altrincham are placed at a disadvantage. The boundaries touch at one point, but between them, west and east, are Dunham Massey and Hale. Altrincham has an Infectious Hospital which is available for Bowdon, but entrance to it is refused the inhabitants of Hale and Dunham Massey, because they belong to the Rural Sanitary District of Altrincham. The Urban Districts are however being constantly fed by zymotic diseases imported from Hale. It is suggested that the proper course would be to construct a Joint Infectious Hospital, for the use of patients drawn from the whole area.

A question as to the increase of phthisis in the district having arisen, it is pointed out that there is difficulty in obtaining definite statistics, as phthisical visitors are attracted to Bowdon and contiguous districts by the Consumption Hospital. That there is an increase of tuberculous affections among permanent residents can scarcely be doubted, nor need this occasion wonder, considering the infectious nature of tuberculosis and its easy transmission in dust, especially by means of phthisical sputa.

The water-supply for the district is obtained from Manchester and is very good.

The district is constantly overlooked. All complaints are considered and attended to, and care taken to ensure proper sanitary arrangements in the district.



## BREDBURY AND ROMILEY.

### Urban Sanitary District.

Medical Officer of Health—Dr. F. CANT.

Population at Census, 1891—5,821.

Estimated population in middle of 1893—5,821.

Area in acres—3,725.

Birth-rate per 1000 living—25.2.

Death-rate per 1000 living—14.7.

Death-rate from seven principal Zymotic diseases—1.2.

Deaths under one year to 1000 births—95.

Bredbury has an area of 2,536 acres, and the population at the Census was 3,901. Romiley has an area of 1,189 acres, and the population at the Census was 1,920. During the decade, 1881-91, the population of this district only increased 4.8 per cent. There is no evidence of any increase since the Census.

In Bredbury there were 102 births and 61 deaths registered, and there were 42 cases of infectious disease notified, of which 8 were removed to hospital.

In Romiley there were 45 births and 25 deaths registered, and there were 25 cases of infectious disease notified, none being removed to hospital.

In Bredbury the birth-rate was 26.1, and the death-rate 15.6. In Romiley the birth-rate was 23.4 and the death-rate 13.0. These death rates are extremely low.

**Infectious Disease notified.**—The cases notified in Bredbury were as follows:—4 small-pox, 24 scarlatina, 2 diphtheria, 8 typhoid fever, 1 puerperal fever, and 3 erysipelas. The 4 small-pox cases and 4 of the scarlatina cases were removed to hospital. The cases notified in Romiley were as follows:—15 scarlatina, 7 diphtheria, 1 typhoid fever, and 2 erysipelas. In Bredbury there were 2 deaths from scarlatina and 1 from diphtheria: in Romiley 1 death from scarlatina and 2 from diphtheria.

All the 8 cases sent to hospital recovered. More of the scarlatina cases would probably have been removed, but at one time, owing to the presence in hospital of several small-pox cases, the Authority were advised not to send more scarlatina patients there, and some already there were sent home rather prematurely. The cases of scarlatina not removed were isolated at home, the rooms occupied by them were disinfected, and care taken to prevent the spread of the disease. The small-pox cases were all close together and reported within a few days of each other. There is no doubt they were connected. Whether the disease was introduced from abroad or by tramps is doubt-



ful. The houses where the cases occurred were effectually disinfected and many things therein burnt. Particulars of the small-pox cases are given below:—

1. Adult, vaccinated in infancy, 3 marks, eruption slight, quickly recovered.
2. Child about 8 years old, never vaccinated, free eruption, recovered after some time.
3. Adult, vaccinated in infancy, very fair cicatrices, free eruption, recovered.
4. Child, about 13 years old, never vaccinated, confluent eruption, recovered after a long illness, but is severely pock-marked.

As regards the typhoid fever cases, the disease appears to have been derived from outside the district, where it was epidemic. Every possible precaution was taken, and sanitary defects of houses where the disease occurred were remedied.

In August a notice was received from Hull that a traveller had arrived there *en route* for Woodley (in Bredbury) from Antwerp, where cholera was then epidemic. The Medical Officer of Health at once made arrangements to keep him and his family under observation. Though all went well, it is thought advisable to mention the circumstance as showing the vigilance of port sanitary officers.

**The Infectious Disease (Notification) Act.**—The requirements of this Act have been complied with much more thoroughly in 1893 than previously. Only one case of failure to notify was discovered, and in this case the parent of the infectious patient was called before the Board, and cautioned not to repeat the offence. Owing to the rapidity with which measles spreads among children in close contact at school, and to the prevalence of whooping-cough, the Medical Officer of Health advises that the necessary steps be taken to have these diseases included in the list of infectious diseases to be notified. Many parents have sent information of children suffering from infectious diseases not included in the lists, and with good results in checking their spread.

**Suggested Joint Hospital.**—With the Chairman of the Sanitary Committee and the Clerk of the Board, the Medical Officer of Health attended a meeting at Stockport, to consider the advisability of erecting a joint hospital for the reception of patients from the districts of the Stockport Rural Sanitary Authority, Hayfield, New Mills, Marple, Bredbury and Romiley, the matter having been referred for consideration to each Board, it was decided that Bredbury and Romiley, being very well served by the Hospital at Hyde, need not join in the scheme at present.



**Abatement of Nuisances.**—A large portion of the work done by the Medical Officer of Health and Sanitary Inspector, during the year, has been in connection with this subject. Much has been done and much remains to be done. On the whole there have not been so many complaints as in past years, and this may be attributed to the greater number of inspections made of known insanitary areas, and defects discovered and remedied before complaints are made or cases of sickness arise. No doubt, too, complaints of nuisance being less frequent is in part due to the Board having undertaken the work of emptying ashpits, &c., and doing it systematically. The Board hires carts and labour, and has provided a convenient tip in each village. This is a great improvement on the old system of emptying. Only one complaint was received during the year, of the contents of a privy-midden being used as manure on fields within the prescribed distance of dwelling-houses. The nuisance was stopped, but a case of typhoid fever was reported close by, which serves to emphasize the importance of disallowing the practice referred to.

In nearly all the most frequented thoroughfares this work of emptying is done before 8 in the morning. It is hoped that in future more of the work will be done thus.

There is no doubt that compound privy-middens form one of the weakest links in the local chain of sanitary defence, and if there were anything like an epidemic of cholera, diarrhoea or typhoid fever, the disease germs would certainly find a suitable cultivating medium in these receptacles. Many have been cited as nuisances and dealt with as seemed best under the particular circumstances. Some have had the bottoms raised to the level of the ground surrounding, others have been drained, others roofed. Moreover house-tenants have been repeatedly requested not to make their middens worse by emptying therein bedroom slops, but it is almost impossible to stop this most objectionable practice, although outside drains have been provided to take this waste water.

According to the Inspector's report the number of notices to abate nuisances served was 79, and the number abated after such notice was 50. There remain 29 nuisances still unattended to for various reasons.

**Main Drainage.**—There are two separate undertakings in hand at the present time, for which plans have been prepared and application made to the Local Government Board for borrowing powers to carry out the work. During 1893 the purchase of ground for settling beds and sewage outfall works for Romiley and part of Bredbury has been completed, and the construction of the drains will, in all probability, be soon commenced.



The scheme for the rest of Bredbury is scarcely so far advanced, as considerable delay has been caused by the refusal of the landholders to sell the required land, and it has been found necessary to present a petition to the Local Government Board to issue a provisional order to empower the Bredbury and Romiley Sanitary Authority to put in force the powers of the Land Clauses Acts with respect to the compulsory transfer of these lands.

No difficulty is anticipated, however, and it is to be hoped the work will not be further hindered.

When these two schemes are completed, the Medical Officer of Health has no doubt many landlords will readily adopt the water-carriage system for their house drainage, and so do away with many of the existing objectionable places. It is owing to this that more stringent action has not been taken in several cases, as it was felt that many midden-privies could only be effectually improved by being wholly done away with, and until some alternate plan was possible abolition could not be fairly enforced.

**Water Supply.**—This has been well maintained. Efforts have been made to secure a more constant supply to the higher parts of the district, but not with the desired results in all cases. A resolution was passed by the Board to have any well-water, used for culinary purposes and suspected of contamination, analysed, but it has not been found necessary to give effect to this resolution.

**Dairies and Cowsheds.**—The Inspector visits these at least four times a year, and enters particulars of each visit in a report book, which is examined and considered by the Sanitary Committee each quarter. From data thus obtained it seems that a steady improvement is taking place in the care of milch-cows, &c.

**Slaughter Houses.**—There are 9 slaughter-houses in the district, and these have been regularly visited by the Sanitary Inspector during the year, and once by the whole Sanitary Committee, who went round to make such an examination of each as would enable them to decide which might be licensed in accordance with a resolution passed last year. The general view seemed to be that considerable alterations as to site, &c., must be effected in several cases, or a public abattoir erected, and the matter is still under consideration.



**BROMBOROUGH.****Urban Sanitary District.**

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

Population at Census, 1891—1662.

Estimated population in middle of 1893—1729.

Area in acres—1555.

Birth-rate per 1000 living—19·0.

Death rate per 1000 living—11·0.

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

Deaths under one year to 1000 births—90.

This Urban Sanitary District includes Bromborough Pool.

In 1893, the births registered in the district numbered 33, the deaths (excluding one death not belonging to the district) numbered 19. Birth-rate and death-rate are both very low. The proportion of deaths among infants is small—there were but 3 deaths of infants all attributed to premature births. The adult deaths included one from puerperal fever, one from bronchitis and two from heart disease.

The cases of infectious disease notified were 2 cases of typhoid fever and 2 of erysipelas. These cases were investigated and proper precautions taken. One typhoid patient was removed to hospital.

The Medical Officer of Health made several visits of inspection to the district.

By way of improving the closet accommodation, a number of privies and ashpits have been filled up to the ground level, and several have been converted into water-closets. The system adopted by the Local Board, for the removal of refuse, works satisfactorily.

The shippens and drains are inspected twice a year, and are in good order.

The district is supplied with water from the Wirral Water Works.

The district is efficiently sewered, and the sewers are systematically flushed weekly.

The removal of nuisances is promptly attended to by the Inspector. Cases of overcrowding are not frequent.

**BUGLAWTON.****Urban Sanitary District.**

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

Population at Census, 1891—1382.

Estimated population in middle of 1893—1382.

Area in acres—2911.



Birth-rate per 1000 living—31·1.

Death-rate per 1000 living—15·9.

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

Deaths under one year to 1000 births—186.

During the year 43 births were registered. The birth-rate for 1893 (31·1) is far higher than the mean birth-rate of the five years 1888-92 (26·8). During the year 22 deaths were registered. The death-rate for 1893 (15·9) is lower than the mean death-rate of the five years 1888-92 (16·3). The proportion of deaths among infants is certainly large.

The following cases of zymotic diseases came to the knowledge of the Medical Officer of Health, viz.:—5 of scarlatina, 5 of measles, 9 of whooping-cough, and 4 of diarrhœa. There were two deaths from these diseases, viz.:—1 from measles and 1 from diarrhœa. The Infectious Disease Notification Act, is now in force in the district, and during the year notifications of two cases of scarlatina were received.

**Scarlatina, Measles, and Whooping-Cough.**—Both scarlatina and measles were confined to the two quarters ending with June and September, and the cases were of a mild character. The known cases of whooping-cough occurred in the second quarter. Not being one of the diseases required to be notified, it is difficult to form an estimate of the number of cases occurring.

**Influenza.**—There were two epidemics of influenza, one beginning in January and ending with March, and the other beginning in December and in progress at the close of the year. A large number of people were affected on both occasions, but it was thought that the disease was of a less severe type than in previous epidemics. The district was not quite free from influenza at any time during the year. There were two deaths from this disease.

**Water Supply.**—In the last Annual Report, as in several previous Reports, attention was called to the inadequate water supply of the Church Bank Village. This defect is now in a fair way of being remedied. A scheme has been submitted to the Local Government Board (and only awaits their sanction to be proceeded with) whereby an abundant supply of excellent water will be brought to this village, which is at present supplied by Congleton.

**General Sanitary Work.**—The general sanitary work of this district was very well attended to; and in view of a possible outbreak of cholera more attention than usual was given to keeping ashpits and privies in order.



## CHEADLE AND GATLEY.

### Urban Sanitary District.

Medical Officer of Health--DR. A. GODSON.

Population at Census, 1891.--7782.

Estimated population in middle of 1893- 7995.

Area in acres--5812.

Birth-rate per 1000 living--25.0.

Death-rate per 1000 living--13.9.

Death-rate from seven principal Zymotic diseases--0.7.

Deaths under one year to 1000 births--140.

This Urban Sanitary 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 is as follows:—

		Area in Acres.	Population at 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.

In 1893, the number of births registered in the whole district was 206, and the number of deaths registered in the whole district (exclusive of those in the Convalescent Hospital and Lunatic Asylum) was 113.

The number of deaths from zymotic diseases was 6, viz. : 2 scarlatina, 2 measles, and 2 diarrhœa.

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

The number of cases of infectious disease notified in 1893 was 64, viz. : 2 small-pox, 49 scarlatina, 3 diphtheria, 1 croup, 4 typhoid fever, 1 puerperal fever, and 4 erysipelas.\* As soon as a case was notified, the Medical Officer of Health at once visited the house, and with the Medical Attendant and the help of the Inspector took all possible precautions to prevent the spread of the disease.

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\* There were also 8 cases of erysipelas at the Convalescent Hospital, which were removed to Monsall Hospital.



The district is almost entirely an agricultural and residential one. The few trades carried on locally are all healthy trades, and the health of the work people is good. As in 1892, most of the cases of infectious disease were introduced into the district from neighbouring towns.

**Small-pox.**—This disease was brought into the district by a railway servant from Bradford, Yorkshire; and he was at once removed to the Hyde Hospital. An infant in the infected house was vaccinated, and most of the inmates were re-vaccinated. All escaped infection except the infant, who had small-pox in a modified form. Both patients recovered, and no other case occurred in the district. The house and contents were disinfected, except a small portion of the furniture which could not be satisfactorily treated, and was burnt.

**Scarlatina.**—Out of the whole number of cases of this disease notified, 29 occurred in the Clerks' Schools and were treated at the sanatorium belonging to the Schools. One case was fatal. The remaining 20 cases were treated as well as they could be at home. One of these cases was also fatal.

**Typhoid fever** was epidemic at Edgeley, which is just outside the district, and 3 out of the 4 persons who were notified in the district no doubt derived the disease from Edgeley. Two of the cases were sent to the Workhouse Hospital at Stockport. The fourth case had its origin in Liverpool.

**Diphtheria.**—The cases of this disease were none of them serious, and there was nothing to indicate that they arose from defective drainage of the houses in which they occurred.

**Hospital accommodation required.**—The Local Board has discussed the subject of hospital provision for infectious cases, but nothing has been done. The Hyde Corporation consent to receive cases of small-pox in their Hospital so far as their accommodation will allow, but Hyde Hospital is more than six miles outside the district, and there is no arrangement at all for other cases of infectious disease. The two typhoid fever patients sent to the Workhouse Hospital at Stockport, were absolutely without means of support, or they would not have been received. Without a Hospital the district is in a very unprepared state to deal with an epidemic.

**Water-supply and Lighting.**—The water-supply obtained from the Stockport Water Works Co. is sufficient. Precautions are taken to insure the purity of the well-water which forms the supply of houses at a distance from the mains. The lighting is now sufficient for the requirements of the district.

**New Houses.**—During the year 20 new houses have been built and occupied, the surveyor seeing that the require-



ments of the Bye-laws have been observed. On December 13th, the Board resolved "That water-closets be required in connection with all dwellings which may hereafter be built in the district."

**Main Drainage.**—During 1891, 4250 yards of public sewers were laid and completed. during 1892, 5031 yards were laid and completed and during 1893, 5581 yards were laid and completed. It is very satisfactory that good progress is being made in this important matter.

**Dairies and Milk-shops** have been visited from time to time by the Medical Officer of Health and are systematically inspected by the Inspector. There are 56 of them in the district. In five instances the drainage, paving, &c., were found defective and the defects were remedied. The Medical Officer of Health proposes that the Regulations made should be published throughout the district, as it was found that some of the dairy-keepers were ignorant of their existence.

**Slaughter-houses.**—These are still unlicensed. The Medical Officer of Health has visited them, with the Inspector. Though structurally most of them are fairly good, there is room for improvement in the condition in which some of them are kept. One, which is only used occasionally, is quite unfit for the purpose.

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

There were no common lodging-houses in the district.

**Inspector's Report.**—The Inspector reports that during the year 215 houses have had the drainage put in order, or been re-drained into public sewers, 19 defective drains have been opened and cleansed, 20 waste pipes have been disconnected from the drains, 3 soil pipes have been ventilated, 2 defective closets have been replaced by modern ones, 7 privy middens have been converted into water closets and dry ashpits, 48 privy-middens have been repaired or improved or rebuilt, and 23 cesspools have been abolished. In 7 cases the removal of accumulations of rubbish was obtained, and 9 nuisances from the improper keeping of animals were abated.

The emptying of ashpits &c. is supervised. During the year there were 2186 emptyings. The number of loads of refuse removed was 2692.

**Cemetery Site.**—It was stated in the last Annual Report that the Board had advertised for offers of suitable land for the purpose of a cemetery. Nothing was done by the Board in this matter, during 1893. However, the Medical Officer of Health is informed that a gentleman has very generously



offered a small piece of land (which will provide about 80 graves) to enlarge the churchyard. This will suffice for a short time, but the early provision of a suitable burying-ground is very necessary.

In conclusion, the Medical Officer of Health states that though a Hospital, a recreation ground and a cemetery are still to be provided, and many streets require paving and sewerage, he must congratulate the Board on the work done, and the many improvements made in the district since the Board was established.

## CHORLEY.

### Urban Sanitary District.

Medical Officer of Health—Dr. G. W. Dowling.

Population at Census, 1891—2270.

Estimated population in middle of 1893—2270.

Area in acres—589.

Birth-rate per 1000 living—25·1.

Death-rate per 1000 living—15·8.

Death-rate from seven principal Zymotic diseases—0·8.

Deaths under one year to 1000 births—191.

This Urban Sanitary District 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 Acres.			Population at Census.
Part of Chorley ... ..	476	...	...	1838
Part of Fulshaw ... ..	113	{	...	155
Part of Bolling Fee ... ..			...	277

The number of births registered in the district in 1893, was 57. The number of deaths registered in the district, in 1893, (excluding one death occurring in the district but not belonging thereto) was 36. In 1892 the death-rate was remarkably low (10·5), but though the death-rate of 1893 (15·8) does not approach this, it is still low. Of the 36 deaths, 2 were due to diarrhoea, 2 to phthisis, 5 to bronchitis or pneumonia, 3 to heart disease, and 2 to injuries.

Under the Infectious Disease (Notification) Act, eleven cases were reported, viz: 1 diphtheria, 2 typhoid fever, 7 erysipelas and one measles. In both of the typhoid fever cases the disease was contracted at the seaside.

In 1893, the Local Authority, by resolution added measles to the list of diseases required to be notified in the district.



During July and August there were more than the usual number of cases of diarrhœa, owing apparently to the excessively hot weather. During the latter part of November and the whole of December influenza was epidemic, but only one death was attributed to pneumonia following influenza.

**Bakehouses and Milk-Shops.**—The bakehouses have been inspected, and were all found kept in a cleanly condition. The milk-supply has been good.

**Water-supply.**—The water-supply has been sufficient, but excessively hard. The Water Company has had some difficulty in keeping up the supply owing to the long drought, and has thus been compelled to use a large quantity of well-water.

**Sewers and Drains.**—The drainage works well, and no complaints have been received. It is satisfactory to note that the Local Board are turning their attention to the flushing of the sewers, and have decided to put down three automatic flushing-tanks. The Rivers Pollution Joint Committee have expressed their satisfaction with the character of the effluent from the sewage-farm.

The roads have been kept in a good state of repair and cleared regularly.

The method of removing night-soil and ashpit-refuse appears to answer well.

There are a few houses to which the attention of the Board will have to be called in the future, as they do not appear to be kept in a thoroughly sanitary condition.

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## DUKINFIELD.

### Urban Sanitary District.

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

Population at Census, 1891—17408.

Estimated population in middle of 1893—17700.

Area in acres—1412.

Birth-rate per 1000 living—29·6.

Death-rate per 1000 living—21·6.

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

Deaths under one year to 1000 births—230.

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

In 1893, the number of births registered was 525, and the number of deaths registered was 384. The mean birth-rate for the five years 1888-92 was 30·7. The mean death-rate for



the five years 1888-92 was 21·2. The birth-rate in 1893 was 1·1 below the local mean rate, and the death-rate in 1893 was 0·4 above the local mean rate. The birth-rate was lowest (27·5) in first quarter, and highest (31·4) in the last quarter. The death-rate was lowest (19·4) in the first quarter, and highest (23·7) in the third quarter.

The proportion of deaths under one year to 1000 births was 230—a very large proportion.

The number of deaths, in 1893, ascribed to the seven principal zymotic diseases was 58, viz. : 9 measles, 4 scarlatina, 4 diphtheria, 3 whooping-cough, 1 typhoid fever and 37 diarrhœa. The mean death-rate from the seven principal zymotic diseases for the five years 1888-92 was 2·1. This death-rate was in 1893, 1·1 above the mean.

**The Infectious Disease (Notification) Act** was adopted in November, 1892. During 1893 the number of cases notified was 126, viz. : 2 small-pox, 70 scarlatina, 21 diphtheria, 2 croup, 25 typhoid fever, 1 puerperal fever and 5 erysipelas. Fifty six cases were notified in the first quarter, 31 in the second quarter, 31 in the third quarter, and 8 in the last quarter. Only the diseases named in the Act are required to be notified. At one time, when there seemed danger of a cholera epidemic in the country, medical men were requested to notify all severe cases of diarrhœa. However, but a single case was notified. In every case the houses and clothing were disinfected, but in very few cases was isolation at home possible. Without means of isolation the Act is of comparatively little use.

**Hospital Accommodation required.**—The Medical Officer of Health points out the need of an Infectious Hospital and hopes that the Health Committee will provide one. He suggests that it would perhaps be an advantage to join with Stalybridge in building a joint Hospital for the two districts. At present the Authority have the use of two beds at the Hyde Hospital, by agreement, on payment of £11 per annum. The medical attendance has also to be paid for and a charge of 1s. 3d. per day for food for each patient is made.

**Disinfecting Apparatus required.**—After intimation from the medical attendant on an infectious case that the premises are ready for disinfection, the Inspector thoroughly fumigates the room or rooms and contents with the fumes of burning sulphur. Disinfecting powder is also provided free and used. However, the Authority is not provided with any apparatus or disinfecting by steam. 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. The Medical Officer of Health strongly recommends the Authority, without delay to pass model bye-laws.

**Small-pox.**—Two cases of this disease were reported during the year. They both occurred in February and were removed to the Hyde Hospital, where they recovered. Every needful precaution was taken and the disease did not spread.

**Measles** caused 9 deaths in 1893, which is about the mean annual mortality during the five years 1888-92. Although measles is not notified there is no doubt it is a preventable disease, and parents should endeavour as far as possible to isolate children as soon as they show the first signs of being infected.

**Scarlatina** was prevalent nearly the whole year, 29 cases being reported during the first quarter, 23 during the second quarter, 15 during the third quarter, and 3 during the last quarter. There were 4 deaths, 2 being in January, one in March and one in May. During the five years 1888-92 the mean annual number of deaths was 2.

**Diphtheria and Croup.**—Twenty cases of diphtheria were notified in the first five months of the year, and 1 case of diphtheria and 2 cases of croup were notified in September. Four deaths were ascribed to diphtheria and one to croup. During the five years 1888-92 the mean annual number of deaths of these 2 diseases together was under 3. It is difficult to explain why, in spite of improved sanitary precautions, the mortality from these diseases increases. The Medical Officer of Health suggests that parents and schoolmasters should prohibit children attending school when suffering from even a seemingly simple sore throat.

**Whooping-cough** caused but three deaths in 1893. During the five years 1888-92 the mean annual number of deaths was a little over 7.

**Typhoid Fever.**—Of the 25 recorded cases of this disease 8 were notified in the first quarter and 12 in the third quarter. The only death was registered in April. During the five years 1888-92 the mean annual number of deaths was about 10.

**Diarrhœa** was remarkably fatal in 1893. Four deaths occurred in the second quarter, 30 in the third quarter, and 3 in the last quarter. During the five years 1888-92 the mean annual number of deaths was just under 8. The Medical Officer of Health thinks it is worth considering whether diarrhœa should not be added to the list of diseases to be notified.



**Influenza** now appears to be a yearly visitor. The first cases noticed in 1893 were in June. Four deaths were reported as directly due to influenza, besides others caused by its after-effects—chiefly chest affections. It is almost impossible to check the progress of a disease like this, for isolation is impossible. Yet influenza is undoubtedly a highly infectious fever, and people must themselves take precautions and avoid any unnecessary risk of, or exposure to, infection.

**Phthisis** was responsible for 32 deaths, yielding a death-rate of 1·8 per 1000 living. Although the employment of workpeople in cotton mills (particularly in card-rooms), in coal pits, and spindle works is rather favourable to the development of phthisis and other chest diseases, there is no doubt the phthisis death-rate in the district should be much lower.

It is an open question whether phthisis is hereditary or not. Certainly 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 in 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 nearly 20 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.

Negotiations are still going on as regards a complete sewage scheme for the district. Early in the year representatives appeared before a Parliamentary Committee on the matter, and more recently a Local Government Enquiry was held in the neighbourhood, with the object of clearing the way for an early commencement of the works. The authority will be acting wisely if, at the same time, they take into consideration the building of a "destructor."

The sewerage of the district, so far as carried out, works well. The sewers are ventilated at the manholes. The house drains are carefully attended to, and during the year the Inspector has made a careful examination to see that all sink waste-pipes are disconnected, and all drains are trapped.

**A polluted River.**—The river 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 the manufacture of dry soap. The waste-liquor discharged by the three last has a very deleterious effect on the water.

**Smoke-nuisance.**—There have been several complaints of smoke nuisances. No less than 23 have been reported by the Inspector, but no legal proceedings have been taken beyond serving notices of abatement. The Medical Officer of Health thinks it would be advisable to adopt some practical means of regulating the quantity of dense smoke permitted to escape from the chimneys of the mills and works.

**Inspector's Report.**—The Inspector furnishes a list of many nuisances abated, including 50 defective drains altered, 42 defective ashpits altered, 9 pigs and 94 fowls (kept so as to be a nuisance) removed, &c. In all 33 summonses were issued. The Inspector also supervised the scavenging. The number of loads of street sweepings removed was 1431, the number of loads of refuse removed from the midden-privies or ashpits was 4836, and the number of barrels of excreta removed was 1536.

There is a mile of the Peak Forest Canal running through the district. Here the Inspector examined 11 canal-boats. He also issued 3 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 175 carcasses of these animals.

There are no offensive trades carried on in the district, and no common lodging-houses or tenement lodging-houses.



There are comparatively 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 36 visits of inspection were made during the year. The premises, fixtures, utensils, &c., were kept scrupulously clean; and with one or two exceptions the lighting, ventilation, draining and water-supply were good. Samples of milk (and some other foods) were submitted to the 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 all kept in good sanitary condition. There are 15 slaughter-houses, 9 of which are being used at present. They are kept clean, but a number of them have not sufficient air-space or light, and are in objectionable places. The Medical Officer of Health trusts the necessity for an abattoir will be considered by the Health Committee.

**Vaccination.**—The following return is submitted respecting the vaccination of children in the part of the Registration Sub District of Dukinfield within the Local Board District of Dukinfield.

Successfully vaccinated	...	...	...	156
Insusceptible of vaccination	...	...	...	3
Died unvaccinated	...	...	...	80
Postponed by medical certificate	...	...	...	8
Removed from the district	...	...	...	12
Defaulters or cases not accounted for	...	...	...	254
				<hr/>
Births registered	...	...	...	513

**Cemetery.**—The Local Board 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.

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## HOLLINGWORTH.

### Urban Sanitary District.

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

Population at Census, 1891—2,895.

Estimated population in middle of 1893—2,895.

Area in acres—2,086.

Birth-rate per 1000 living—32.1.



Death-rate per 1000 living—20·7.

Death-rate from seven principal Zymotic diseases—2·4.

Deaths under one year to 1000 births—161.

In 1893, the number of births registered in the district was 93, and the number of deaths registered in the district was 60. One-fourth of the deaths were of infants under one year old, and one-fifth were of persons 65 years old and upwards.

Zymotic diseases caused 11 deaths, viz.: 1 diphtheria, 4 croup, 3 measles, and 3 diarrhoea.

**Notification of Infectious Disease.**—The number of cases notified was 38, viz.: 11 small-pox, 19 scarlatina, 1 diphtheria, 4 croup, 2 typhoid, and 1 erysipelas.

**Small-pox** —The outbreak of this disease was made the subject of a special report. Notification of the first case was received on the evening of April 1st. The Medical Officer of Health investigated this the same night, when his attention was drawn to a second case in the same house. In the absence of any provision for the isolation of cases of this disease, the Medical Officer of Health arranged for their going to the Hyde Hospital, and they were sent there before noon next day. The house, clothes, and bedding were forthwith disinfected, and the mattress burned. All the healthy members of the family were quarantined and re-vaccinated, except two. Unfortunately, owing to the disease being of a modified character, the initial patients had continued at their work for nearly a week after the eruption commenced, and no medical aid was procured. Consequently several persons who worked near them, and others who had free intercourse at the house where they lived, contracted the disease before its real nature was known, and thus 8 persons became infected. Similar action was taken with these cases. All were promptly despatched to the Hyde Hospital. In all but two cases, the disease was of a modified type. One of the more serious (or confluent) cases was a baby, whose mother was suffering from the disease when it was born. The eruption appeared on the infant when it was twelve days old.

The Medical Officer of Health caused a number of circulars to be distributed throughout the district, advising the inhabitants to be re-vaccinated, and about 58 persons (principally operatives who worked at the same factory as those who were first attacked) were re-vaccinated. In 47 of these persons the operation was successful. It seemed for some time that the active measures thus taken had effectually stamped out the disease, but on August 27th another case occurred, the patient being a joiner who had worked near the place where the previous cases had occurred. He was also sent to the Hyde Hospital.



Three of the small-pox cases were in Green Lane, 4 were in Wood Street, 1 was in Moorfield Terrace, 1 in Market Street, 1 in Woolley Lane, and 1 (the last) in Old Hall Lane.

The origin of the outbreak is somewhat doubtful. The persons first attacked had a fortnight previously visited a neighbouring town where small-pox was, and by a coincidence, about the same time a young man convalescent from small-pox and supposed to be incapable of infecting others, had returned to his home, which was only a few doors from where the first case occurred. The Medical Officer of Health is of opinion that this young man was the most probable source of the outbreak.

**Scarlatina** was more or less prevalent till July. The type of the disease was very mild. Four cases were in Market street, 3 in Mottram Moor, 3 in Spring Street, 3 in Junction Street, 2 in Taylor Street, 1 case was in Water Lane, 1 in Rose Bank, 1 in Cannon Street and 1 in Woolley Lane. The disease was spread, as far as could be ascertained, by healthy children from infected houses (who had been kept from school) conveying infection when playing with other children.

**Diphtheria.**—The only case of this disease notified proved fatal. On examining the back of the dwelling where it occurred (in Wood Street) there was noticed a quantity of blood in a state of decomposition, on a manure heap. It had been thrown from the slaughter-house belonging to the Co-operative Stores, and caused an abominable effluvium. The manager's attention was drawn to the matter and he was advised to have the blood removed from the slaughter-house when fresh to some field, and buried.

**Croup.**—The 4 cases notified of membranous croup all proved fatal. They occurred at Green Lane, Market Street, Thorncliffe Wood and Moorfield Terrace. The dwelling-houses were examined, but no defects discovered.

**Typhoid fever.**—Two cases of this disease occurred in the same block of buildings at Mottram Moor. In the first case nothing was found to account for the disease. The second case seems to have been contracted owing to the excreta from the first having been emptied into the privy-midden common to this block of buildings.

**Erysipelas.**—The only case of this disease notified was in Market Street. No defects were found on the premises.

**Infantile Diarrhœa** was more prevalent during the summer and autumn of 1893 than during the three years, 1890-92. This disease is usually much increased during exceptionally hot weather, such as was experienced last summer, the high temperature favouring early putrefactive changes in



the food, the result being the formation of some toxic substance which probably causes the diarrhoea. The changes are favoured by the uncleanness often associated with bottle-feeding.

**Influenza** was very prevalent during the latter months of the year. The disease was milder than it has been hitherto, but a greater number of throats were attacked.

**Action taken to prevent spread of Infection.**—In all cases of infectious disease, the premises where the diseases occur are visited by the Medical Officer of Health and Inspector. The sanitary arrangements are examined, and where defects are discovered notices are served requiring their remedy. The Local Board having no Isolation Hospital, instructions are given for the isolation of the patients as far as practicable at home; disinfectants are supplied and the clothing, premises, etc., are disinfected. Healthy children residing in an infected house are prohibited from attending school, or playing with other children, until all possibility of their being able to infect others is past.

**Water-supply.**—The water has been good, but owing to the exceptionally dry weather in the spring and summer, it was found necessary to limit the supply.

**Inspection.**—Frequent inspection of the district has been made, including slaughter-houses, dairies, and cow-sheds therein.

There are no common lodging houses and no noxious trades carried on in the district.

**Nuisance Abatement.**—Thirteen formal notices for the abatement of nuisances have been served, and all have been effectual. Many nuisances have been abated without formal notice. A number of defective drains have been put in order, and sinkstone waste-pipes have been disconnected and made to deliver on gully-traps. Nothing has, however, been done in reducing the size of the midden-privies and roofing them over, as advised in former Reports.

The Inspector has supervised the periodical removal of excreta and house refuse.

**The British School.**—The Medical Officer of Health inspected the sanitary arrangements at this school, and found the closets too near the school-house and the urinals defective. In the absence of any available site for the removal of the closets, the managers were recommended to arrange for the emptying of the pails weekly, and to re-construct the urinals with upright slabs of slate or stone and perforated pipes for constant flushing.



**HOOLE.****Urban Sanitary District.**

Medical Officer of Health—DR. W. C. WATSON.

Population at Census, 1891—3329.

Estimated population in middle of 1893—3329.

Area in acres—331.

Birth-rate per 1000 living—33·9.

Death-rate per 1000 living—17·4.

Death-rate from seven principal Zymotic diseases—2·7.

Deaths under one year to 1000 births—212.

This Urban Sanitary District is only part of the parish of Hoole; the remaining part (419 acres, and having a population of 174) forms a portion of the Chester Rural Sanitary District.

The population of the Urban Sanitary 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 1893, the number of births registered was 113, and the number of deaths registered was 58. Both birth-rate and death-rate are lower than the corresponding mean rates of recent years in the district. One death was certified as due to infantile cholera, one as due to croup and one to erysipelas. There were also 3 deaths from measles, 2 from whooping-cough, 4 from diarrhœa, 3 from phthisis, 15 from bronchitis or pneumonia and 5 from heart disease. There was one death from injuries.

The death rate being lower than usual is due to decreased mortality from bronchitis, pneumonia and heart disease.

**Infectious disease notified.**—The number of cases of infectious diseases notified in the district was 16, viz.: 4 scarlatina, 8 diphtheria, 2 typhoid fever, and 2 erysipelas. All 16 cases recovered. The diphtheria cases were mostly of a mild character. One of the typhoid fever cases was removed to hospital. There were also 12 cases of infectious disease notified in the Workhouse, viz.: 3 small-pox, 7 scarlatina (5 removed to hospital), 1 typhoid fever and one erysipelas. The cause of the 3 cases of small-pox could not be traced. The patient who first took the disease had not been out of the house for a month. Each case was at once isolated. The patient who died had originally come from Poulton or Pulford and had been an inmate of the Workhouse about 4 years. Nine cases of measles occurred in the Workhouse and all recovered. There were 5 deaths in the Workhouse from diarrhœa (2 infantile).

**Drainage.**—The drainage continues to work satisfactorily, and flushing of the drains is carried out regularly.



**Ashpits, &c.**—A large number of privies have been converted into water-closets, and a large number of ashpits have been drained and covered. Water has been laid on to many houses. The district is in so satisfactory a condition that only about 20 houses remain to be dealt with. The scavenging is regularly carried out.

Five new houses are in course of erection under the supervision of the Surveyor.

**Nuisance Abatement.**—One hundred and thirteen notices have been served for the abatement of nuisances of various kinds, and in no case were further proceedings found necessary.

**Milk-houses.**—There are 12 milk-houses in the district, which were regularly inspected during the year.

### HOYLAKE AND WEST KIRBY.

#### Urban Sanitary District.

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

Population at Census, 1891—6,545.

Estimated population in middle of 1893—7,191.

Area in acres—2,019.

Birth-rate per 1000 living—27.1.

Death-rate per 1000 living—15.3.

Death-rate from seven principal Zymotic diseases—2.0.

Deaths under one year to 1000 births—123.

This Urban Sanitary District consists of West Kirby, Little Meolse (including Hoylake and Hilbre Island\*), Hoose, Great Meolse, and part of Grange. The area and population at the date of the Census are given as follows:—

		Area in Acres.		Population at Census.
West Kirby	...	482	...	2,441
Little Meolse	...	711	...	1,962
Hoose	...	108	...	1,658
Great Meolse	...	695	...	456
Part of Grange	...	23	...	28

The Urban Sanitary District was created by an order of the Cheshire County Council, which was confirmed by Local Government Board, dated January 15th, 1891.

The portion of the Urban Sanitary 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.

\* 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 part of Little Meolse owing to its having been rated to this parish for the maintenance of the poor.



In 1893, the births registered in the district numbered 195, the deaths (excluding one death not belonging to the district, and including 3 deaths occurring outside but belonging thereto) numbered 110. Of the deaths 63 were in or belonged to Hoylake, and 47 were in or belonged to West Kirby. Both birth-rate and death-rate are fairly low, but they were lower in 1892. Possibly the estimate of population is not high enough. If the proportion of persons to a house is the same as at the Census, the estimate might be increased by 600. This would make the birth-rate 25.0 and the death-rate 14.1.

The Hoylake mortality includes a death from scarlatina, one from typhoid fever, and one from erysipelas, two deaths from diphtheria, 3 from diarrhoea, 5 from whooping-cough, 7 from phthisis, and 10 from bronchitis or pneumonia.

The West Kirby mortality includes two deaths from membranous croup, 3 from diarrhoea, 12 from phthisis, 4 from bronchitis or pneumonia (3 of which were associated with influenza), and 2 from heart disease.

The cases of infectious diseases notified were 72 in Hoylake and 29 in West Kirby. The cases notified in Hoylake were 36 of scarlatina, 22 of diphtheria, 6 of typhoid fever, and 8 of erysipelas. Out of these 21 scarlatina cases and 2 typhoid fever cases were removed to hospital. The cases notified in West Kirby were 16 of scarlatina, 2 of diphtheria, 2 of membranous croup, 6 of typhoid, and 3 of erysipelas. Out of these 13 scarlatina cases, 3 typhoid fever cases, and one case of diphtheria were removed to hospital. The patients not removed were isolated as far as practicable. All cases were duly investigated, and measures taken for the discovery of insanitary conditions and for disinfection.

Eleven of the scarlatina cases at West Kirby occurred in the Convalescent Home for Children. The inmates, being necessarily recruited frequently from other localities, in several instances apparently brought infection with them. In spite of prompt removal to hospital the recurrence of the disease was not ultimately arrested until the Institution had been closed for some weeks for the purpose of complete disinfection. The Committee of the Home hope to provide isolation wards to prevent a repetition of the trouble.

As to the cases in private houses, it is noted that home-isolation is not always sufficient to prevent disease from spreading through the family, and many of the cases were successive ones in the same house. Although there was no general spread of the malady, cases occurred at intervals throughout the year, March and April being the only months in which no cases occurred. It is at least satisfactory that out of the 52 cases there was only one death. A mortality for



scarlatina of less than 2 per cent. is remarkably low, and indicates that the terms of the Notification of Infectious Disease Act have been complied with.

The prospect of successfully limiting the spread of infectious disease depends on the vigilance with which slight cases are recognised; but preventing children from infected houses attending school and other assemblies, and preventing the exposure of all infected persons in shops and public places must greatly tend to limit the spread of infection. In a district like this, frequented as a health resort, prosperity so much depends on the absence of infectious disease that the cost of sending patients to hospital becomes insignificant. It would have been well if infectious cases had been as freely removed to hospital throughout the Combined Hospital District as they were in Hoylake and West Kirby. Of the scarlatina cases in Hoylake and West Kirby 65 per cent. were removed, of the scarlatina cases in other parts of the Combined Hospital District only 14 per cent. were removed. It speaks to the credit of the hospital management that the friends of patients permit their removal to hospital, notwithstanding the distance.

The mortality is low from diphtheria (2 deaths in 24 cases), and from typhoid fever (1 death in 12 cases).

Many of the cases of infectious disease in this district may be looked upon as imported, especially owing to the free communication with Liverpool and Birkenhead.

The Medical Officer of Health has visited the district a number of times, investigating cases of infectious disease, making general and special inspections, and has advised the Board and Inspector and Surveyor on various points of detail in connection therewith.

Privies and ashpits are emptied by the contractor, who attends to them well. 25 privies have been converted into water-closets, and others have been removed to a distance from the houses.

The removal of nuisances is promptly attended to by the Surveyor and Inspector. He reports that the whole of the sewers are in good order, and that they are flushed regularly every fortnight during the winter months and every week during the summer. The difficult Lang sewer is flushed twice a week, and is in as good order as when first connected with the houses. There have been laid 300 yards of new sewer.

The district has an excellent supply of water from the West Kirby Water Works (deep wells).

There are not many milk-houses in the district, most of the milk being supplied by farmers residing outside. They receive careful attention.

During the year 65 houses have been built, or are in



course of erection—41 are situated in Hoylake, 24 in West Kirby.

The following streets have been made and paved with sets, as public improvements,—Grove Road, Back Sea View and School Lane. The following have been made and macadamized, as private improvements—Drummond Road, Elm Grove, Westbourne Road, Westbourne Grove, Hosscote Park, Marine Park and Stanley Park.

Land has been obtained for widening 1100 yards of Banks Road, and its construction will be proceeded with as soon as sanctioned by the Local Government Board. Other roads are being dealt with. There has been constructed in conjunction with the County Council a fine road, one mile and three-quarters in length, between Hoylake and West Kirby.

## LYMM.

### Urban Sanitary District.

Medical Officer of Health—DR. J. M. Fox.

Population at Census, 1891—4995.

Estimated population in middle of 1893—5450.

Area in acres—4375.

Birth-rate per 1000 living—25·1.

Death-rate per 1000 living—9·7.

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

Deaths under one year to 1000 births—73.

In 1893 the births registered numbered 137, and the deaths registered numbered 53. The birth-rate is lower than usual. The death-rate reached the remarkably low figure of 9·7, while the zymotic death-rate was so low as to be practically *nil*.

The number of cases of infectious diseases notified during the year was 28, viz. : 16 small-pox, 10 scarlatina, and 2 croup.

The principal event recorded in 1892 was the outbreak of small-pox imported from Warrington. This outbreak, which it will be remembered resulted in 49 cases in 1892, was responsible for 16 cases in 1893. The last case seen by the Medical Officer of Health, occurred in April. The patient was sent in the ambulance to the temporary hospital. The disease affected the patient so slightly that it was not necessary to keep him in bed at any time during the few weeks he was in hospital.

The Medical Officer of Health testifies to the unremitting energy displayed by Mr. Mort, Surveyor and Inspector, from the beginning to the end of the outbreak.

The system of scavenging, which has been carried out many years, has been continued as usual in 1893 and proved satisfactory.



The systematic inspection of the district has been maintained.

In 1892 it was reported that "with the exception of Heatley, the district is provided with an efficient system of sewers." The work of carrying out a system of sewerage at Heatley has now been achieved.

The Inspector reports that during the year 2075 privies and ashpits have been cleansed, and 31 nuisances have been abated by alterations to privies and repairs to drains. 123 visits were made in respect of alterations and general inspections, 92 visits were made in cases of infectious disease and 36 houses or premises were disinfected. In 2 cases overcrowding was abated. Ten formal notices for the removal of nuisances were served.

The number of canal boats inspected was 51. The number of notices served in this department was 3.

Periodical attention was given to the sewers, by flushing, cleaning out manholes, &c. The sewage farm of  $15\frac{3}{4}$  acres, yielding (in 1893) 74 tons of willows, was supervised.

Four new houses were built during the year.

## MARPLE.

### Urban Sanitary District.

Medical Officer of Health—DR. J. J. BAILEY.

Population at Census. 1891—4844.

Estimated population in middle of 1893—4930.

Area in acres—3053.

Birth-rate per 1000 living—21·5.

Death-rate per 1000 living—13·3.

Death-rate from seven principal Zymotic diseases—1·2.

Deaths under one year to 1000 births—141.

This Urban Sanitary District takes in Barns Fold, Hawk Green, Middlewood and Windlehurst.

From a local sanitary point of view 1893 was uneventful, but the weather was exceptional. A mild winter was followed by a brilliant spring and sultry summer, accompanied by a long and trying drought. From February to October the mean temperature averaged 2 degrees higher than the normal mean, and the sunshine recorded was without precedent.

The births registered in 1893 numbered 106, and the deaths registered in 1893 numbered 66, excluding 2 deaths occurring in the district, but not belonging thereto. The birth-rate is low and the death-rate very low. Fifteen of the deaths were of infants under one year, and 24 were of persons 60 years



old and upwards. A large proportion of the deaths was therefore of old people. Five deaths were sudden and inquests were held on the bodies.

Two deaths were ascribed to croup, 3 to fevers, (1 typhus, 1 typhoid and 1 puerperal), 3 to diarrhœa, 5 to phthisis, 9 to bronchitis or pneumonia, and 7 to heart disease.

**Infectious Diseases.**—With the exception of influenza there was no disease epidemic in the district during 1893. This is the more remarkable considering the risks of a long drought. Influenza was prevalent at the beginning and close of the year. In type it had lost much of its severity, but the diseases complicating and following influenza were still serious, and one death was ascribed to them. The fatal case of typhoid fever occurred in February. It is supposed to have been caught at a workshop outside the district. It did not spread. In March, May, August, September and November cases of scarlatina occurred in different parts of the town. The disease was mild and there were no deaths. There were in all 8 cases known to the Authority. Several of the patients were beyond school age, and schools did not appear to take any part in spreading the disease. The fatal case of typhus fever noted above came into the district from Manchester. The death from puerperal fever occurred in December. No specific cause could be assigned, the patient being well housed and cared for, and under favourable conditions. In all these cases necessary precautions were taken, isolation, cleanliness, disinfection &c. being required.

The Medical Officer of Health regrets the Local Board have not seen fit to adopt the Infectious Disease Notification Act. Infectious diseases cannot be systematically coped with and prevented from spreading unless cases are reported as soon as they occur. Again, as the Medical Officer of Health has persistently pointed out, the only provision for hospital treatment of infectious disease is unreliable. Cases are only accepted at Hyde Hospital, if there is accommodation, and (as the Local Board have already proved) there often is not accommodation when required. The erection of a joint hospital is under consideration by this and adjoining Sanitary Authorities. It is hoped the Marple Board will see its way to support one of the schemes suggested.

**Scavenging.**—The scavenging of the district, the regular methodical emptying and cleaning of ashpits, &c., should be taken in hand by the Local Board. A system at one time approved is not now adopted, and matters are at a standstill. The only convenience recently provided is a couple of public tips.



**Sewers and Sewage Disposal.**—A decision has been arrived at to extend the sewers to parts of the district not at present included, and to enclose land for dealing with the sewage.

**Inspection.**—The Medical Officer of Health and Sanitary Inspector have made systematic and special visits of inspection. More property of all classes is in great demand, building is increasing and old property being improved. There is also a general willingness to comply with modern requirements as regards houses. There are no lodging-houses or noxious trades in the district. The food and milk supply are of average standard, and the water is excellent in quality and abundant. The township is fairly lighted by gas. The work-places, schools, bake-houses, slaughter-houses, and public conveniences are generally clean and in satisfactory condition. The grave-yards are mostly dry and drained, but this cannot be said of all.

**Summary of Requirements.**—The Medical Officer of Health concludes his Report by giving a list of desiderata as follows:—

- 1.—The adoption of the Infectious Disease Notification Act.
- 2.—A Hospital for infectious diseases.
- 3.—Systematic scavenging of the whole district.
- 4.—Sewering of the whole district.
- 5.—The registration of bake-houses and slaughter-houses.
- 6.—Regulations made under the Dairies, Cow-sheds and Milk-shops Order.

**Inspector's Report.**—Twenty-one houses have been built in course of the year, and two are in course of erection. Four dilapidated cottages in High Lane have been taken down and re-built. Six cottages in Rose Hill, unfit for human habitation have been demolished. Defective drains have been put right and improvements made in defective closets and ashpits. As soon as the proposed new sewer from Rose Hill to Hawk Green and Spring Bank is laid and the town drainage in that part is connected, there will be a considerable abatement in the pollution of water courses. Plans have been prepared by Mr. Henry Bankcroft, C.E., and now await the sanction of the Local Government Board. Although the Authority do not undertake the emptying of ashpits, &c., a marked improvement was made in 1893, in the removal of the refuse. Slaughter-houses and bake-houses are periodically inspected and precautions taken to keep them clean and inoffensive.

The number of dwelling-houses obtaining their water supply from the Local Board mains is 964. Notwithstanding the drought, water was available for domestic use daily from 6 a.m. to 6 p.m.



## MIDDLEWICH.

## Urban Sanitary District.

Medical Officer of Health—DR. J. M. FOX.

Population at Census, 1891—3,706.

Estimated population in middle of 1893—4,500.

Area in Acres—252.

Birth-rate per 1000 living—40·4.

Death rate per 1000 living—20·0.

Death-rate from seven principal Zymotic diseases—37.

Deaths under one year to 1000 births—164.

The record of 1893 for Middlewich gives further proof that increased local prosperity is bound to be attended by a strain on Sanitary Administration.

In 1893 the number of births registered in the district was 182, and the number of deaths registered in the district was 90. The birth-rate is decidedly high. The death rate is a little below the mean rate. The number of deaths from the seven chief zymotic diseases was 17, viz:—4 scarlatina, 3 diphtheria, 3 typhoid fever, 1 measles, and 6 diarrhoea. The zymotic death-rate is therefore high.

The number of cases of infectious disease notified was 123, viz:—88 scarlatina, 3 diphtheria, 1 croup, 14 typhoid fever, and 17 erysipelas. The notifications received of erysipelas were absolutely without value. With regard to the cases of scarlatina notified, the Medical Officer of Health is unable to speak with precision. Though so many cases were reported, there were only four deaths.

There was an outbreak of typhoid fever in cottages in Croxton Lane. The origin of the outbreak appeared to the Medical Officer of Health to be due to unprotected water supply. Three of those attacked died.

General systematic inspection of the district has been maintained throughout the year. It may not be without interest to mention that the effect of the adoption of the Notification Act has often been to give a useful direction to the visits of the Inspector.

No difficulty has been found in disposing of the contents of the privies and ashpits, and no complaint in this respect has been referred to the Medical Officer of Health.

The system of sewers appears to work successfully, and no complaint worthy of attention has been made as to the condition of the outfall land.

The principal matter that has occupied the attention of the Board during the year has been the provision of a public water-supply for the town. The Medical Officer of Health, in



this matter, urges the Board to pause till every member of it is assured that the best solution of the difficulty has been reached. The water must be pure (preferably soft or artificially softened), plentiful (due regard being had to possible increase of population), and there must be positive knowledge that the gathering grounds will never run any risk of being overtaken by human dwellings.

## MOTTRAM.

### Urban Sanitary District.

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

Population at Census, 1891—3,270.

Estimated population in middle of 1893—3,270.

Area in acres—1,084.

Birth-rate per 1000 living—34·2.

Death-rate per 1000 living—23·5.

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

Deaths under one year to 1000 births—267.

The Urban Sanitary District of Mottram-in-Longdendale includes Broadbottom.

In 1892, the number of births registered in the district was 112, and the number of deaths registered in the district was 77. Birth-rate and death rate are both rather high. The proportion of deaths among infants is extraordinarily large—more than a quarter of the children born dying before completing their first year.

The high death-rate is ascribed to the increased mortality from infantile diarrhoea in the autumn, and the increased mortality from inflammatory diseases of the lungs in the last quarter, and to other general diseases due in a great measure to the nursing-out system which is so common in this and other manufacturing districts.

Zymotic diseases caused 11 deaths, viz.:—1 croup, 1 typhoid fever, 1 puerperal fever, 2 measles, and 6 diarrhoea.

**Notification of Infectious Disease.**—The number of cases notified was 22, viz.:—13 scarlatina, 3 diphtheria, 1 croup, 3 typhoid fever, 1 puerperal fever, and 1 erysipelas. Measles is not included in the diseases required to be notified.

**Scarlatina** was prevalent in the Broadbottom and Mottram Moor portion of the district from February to June. The first of the Broadbottom cases was imported from Hyde, and the disease spread owing to the parents allowing the patient to attend school before desquamation was complete,



although instructions to the contrary had been given. The first infected was a child at Gorsey Brow, the next a child at Bank Street, and the third lived at Spring Street. These were followed by two other children sickening in the same house in Bank Street, a case in New Street, one in Lower Market Street, and one in Hodge Fold. All the 8 attended the same school. The 5 cases in Mottram Moor, which adjoins Hollingworth, was an extension of a slight outbreak that occurred there. All the cases were of a mild type.

**Measles.**—A slight outbreak of this disease occurred at Broadbottom in February, and continued until the end of March. On the 23rd and 24th of that month 8 children were attacked in Mottram. It is very remarkable that these 8, belonging to several families, should have been attacked on two successive days in a part of the district that was absolutely free from infection, and shews most conclusively that the infection must have been carried in the air, either from Broadbottom or from some of the neighbouring villages, where the disease was epidemic at the time. There was no evidence whatever of either the parents or the infected children having been in contact with anyone suffering from the disease. It is equally remarkable that the infection did not spread from these 8 cases to others.

**Diphtheria and Croup.**—The only case of croup reported was at Mottram Moor, the patient being a very young child. Of the diphtheria cases, 2 occurred in New Street and one in Stalybridge Road. No insanitary defects were found in the houses where the cases appeared. The first diphtheria case was reported on April 4th. The patient was a lodger who worked in the district, but resided at Hyde, where he spent the end of each week, and presumably contracted the disease. The 2 other cases occurred on the same day (October 1st), but were widely separated from each other. One proved fatal owing to the supervention of pneumonia. Both patients worked outside the district and presumably contracted the disease where they worked.

**Typhoid and Puerperal Fever.**—The cases of typhoid fever reported were at Lower Market Street, King Street and the Mudd. The case of puerperal fever was in Stalybridge Road.

**Infantile Diarrhoea** was more prevalent during the summer and autumn than it has been for several years. This disease is usually much increased during exceptionally hot weather, such as was experienced last summer, the high temperature favouring early putrefactive changes in the food, the result being the formation of some toxic substance which



probably caused the diarrhœa. The changes are favoured by the uncleanness often associated with bottle feeding.

**Influenza** was very prevalent during the latter months of the year. The disease was milder than it has been hitherto, but a greater number of throats were attacked.

**Action taken to prevent spread of Infection.**—

In all cases of infectious disease, the premises where the diseases occur, are visited by the Medical Officer of Health and Inspector. The sanitary arrangements are examined and where defects are discovered notices are served requiring their remedy. The Local Board having no Isolation Hospital, the patients are isolated as far as practicable at home, disinfectants are supplied, and the clothing, premises, &c., are disinfected. Healthy children residing in an infected house are prohibited from attending school, or playing with other children until all possibility of their being able to infect others is past.

**Water-supply.**—The water-supply has been good, but owing to the exceptionally dry weather in spring and summer it was found necessary to limit the supply.

**Inspection.**—Periodical inspections of the district have been made, including slaughter houses, dairies and cowsheds, therein. The only common lodging-house in the district has also been inspected. Any insanitary conditions noted are duly reported.

**Nuisance Abatement.**—Sixteen formal notices for the abatement of nuisances have been served. The nuisances referred to have, with one exception, been abated. Other nuisances have been abated without formal notice. Twenty-one sink-stone waste-pipes have been disconnected and made to deliver on gully-traps. There now remain very few sink waste-pipes directly connected to drains. Many defective drains have been put in order and some new closets built. Nothing has, however, been done in reducing the size of the midden-privies and roofing them over, as suggested in previous Reports. In 7 instances observations were made with reference to the abatement of smoke nuisances.

The Inspector has also supervised the periodical removal of excreta and house refuse.

**New tipping-place for Refuse.**—An excellent "tip" for all kinds of refuse has been provided by the Local Board. The situation is suitable and far from the inhabited portion of the district. The old "tip" in Moss Lane has been a long-standing nuisance.



## NANTWICH.

### Urban Sanitary District.

Medical Officer of Health—DR. J. M. FOX.

Population at Census, 1891—7412.

Estimated population in middle of 1893—7500.

Area in acres—703.

Birth-rate per 1000 living—34·8.

Death-rate per 1000 living—18·8.

Death rate from seven principal Zymotic diseases —2·6.

Deaths under one year to 1000 births—180.

There were 261 births and 172 deaths registered in this district in 1893. Forty-three of the deaths took place in the Workhouse, and only 12 of these were of persons belonging to the Urban Sanitary District. Thus the number of deaths belonging to this district is 141, and the remaining 31 have been added to the deaths in the Nantwich Rural District. The birth-rate is decidedly above the average and the death-rate slightly above the average.

The number of deaths attributed to the seven chief zymotic diseases was 20, viz.: 1 small-pox, 3 diphtheria, 9 whooping-cough, and 7 diarrhoea.

The number of infectious diseases notified was 26, viz.: 3 small-pox, 13 scarlatina, 4 diphtheria, 1 typhoid fever, and 5 erysipelas.

**Small-pox.**—In the months of May, June and September, cases of small-pox were notified. The cases in May and June occurred in the Workhouse. In both instances the patients were tramps—a class idle and dirty, who carry disease from place to place. The Medical Officer of Health would have the police instructed to deal watchfully with every tramp, as the police deal with criminals. The third case was found on a canal-boat. The boat was quickly detached from others and removed outside the urban boundary. Everything was done for the patients and the others on board, yet some of them were found disobeying instructions and wandering about the town to the great risk of the community. A man was accordingly appointed at ten shillings a week, to watch the boat, and see that the limits allowed to the inmates were not transgressed. After this the bounds were not again broken.

**Water-supply.**—Notwithstanding the unprecedented drought, the resources proved equal to the emergency. It is true that the supply was restricted in portions of the year, but not so as materially to interfere with the public convenience, and certainly not so as to affect disadvantageously the public health. The Board very wisely appointed a Water Inspector to



look after leakages, etc. He was paid 35/- a week, and the large amount of waste which he quickly detected and prevented showed that the expenditure was well-advised. Bye-laws against water waste are often difficult to carry out. However, householders should be considerate, and not act as though they thought the verdure of their lawns was of greater importance than the convenience of their neighbours.

**Slaughter-houses.**—It is strange that as regards meat the public is so little concerned as to where it comes from, and under what circumstances and conditions it has been prepared. The Medical Officer of Health believes that it is within the scope of the powers of the County Council to enforce the general use of a public abattoir. Still this could only be done under conditions which the Board might consider with reluctance. Doubtless there is more care on the part of the butchers now than there has been in the past to enforce cleanliness in their slaughter houses.

**Systematic Inspection and Scavenging.**—Both these matters have received unremitting attention during the year, as in previous years.

**Hospital Accommodation.**—The Medical Officer of Health advises the Local Board that an Isolation Hospital, which need neither be costly in its erection nor administration, should be within the available resources of the district. He will be grieved if the arrangements contemplated jointly by the Nantwich Urban and Rural Authorities in this matter fell to the ground.

## NESTON AND PARKGATE.

### Urban Sanitary District.

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

Population at Census, 1891—3,577.

Estimated population in middle of 1893—3,617.

Area in acres—3,260.

Birth-rate per 1000 living—37·0.

Death rate per 1000 living—14·9.

Death-rate from seven principal Zymotic diseases—2·7.

Deaths under one year to 1000 births—97.

This Urban Sanitary District consists of Little Neston, Great Neston, and Leighton. The area and population are given as follows:—

			Area in Acres.	Population at Census.
Little Neston	...	...	1214	1012
Great Neston	...	...	1405	2240
Leighton (including Moorside)	...	...	641	325



Parkgate is on the banks of the river Dee, and is situated partly in the Township of Great Neston and partly in Leighton.

In 1893 the births registered in the district numbered 134. The deaths (including 2 deaths occurring outside the district but belonging thereto) numbered 54. The birth-rate is high, and the death-rate low. The proportion of deaths among infants is small. The improvement in the death rate, as compared with the death-rate of 1892 (17.2), is due to the diminished mortality among children and old people.

There was one death from scarlatina (occurring after removal to hospital), one from typhoid fever, and one from rheumatic fever, and there were 8 deaths from diarrhœa, 3 from phthisis, 12 from bronchitis or pneumonia, 2 from heart disease, and 2 from injuries. The mortality from diarrhœa is high, and also bronchitis, &c., but the mortality from infectious disease is low.

Under the Infectious Disease Notification Act there were reported 8 cases of scarlatina, 6 of typhoid, and 2 of erysipelas. Five of the typhoid cases occurred in two families at the colliery (Little Neston Township) about February; 3 were sent to hospital, the other two were unfit for removal. One of those not removed died. The sixth case of typhoid was a new arrival, and appeared to have brought the disease with him. Only one of the cases of scarlatina was removed to hospital, the others were isolated as far as practicable at home. Three occurred in May, one in June, one in September, and three (nearly at the same time in one house) in December. The houses were all specially inspected, action was taken for remedying sanitary defects, and disinfectants were supplied.

The district has a pure water supply from the Local Board's Water Works (deep well), and mains have been extended 800 yards during the year.

Neston and Parkgate are well sewered, and 150 yards of new sewer have been added during the year. The sewers are flushed weekly from fixed tanks, and also from a portable one, constructed by the Surveyor at small expense. Little Neston is partially sewered, and works are now in hand for completing its sewerage.

A great improvement in the condition of the district has been effected by the Board undertaking the removal of ashpit and privy refuse. The refuse is removed once a month, under the supervision of the Surveyor and Inspector. During the year 12 privies have been converted into water-closets.

The Medical Officer of Health has visited the district from time to time, made inspections, and advised thereon, and investigated cases of infectious sickness.

The Inspector makes house-to-house inspections, seeing



about 600 houses monthly, and paying a second visit to half of them. In the district are 7 milk-houses, 5 slaughter-houses, and 5 bakehouses, regularly visited. Cases of overcrowding are not frequent. Sixteen nuisances were abated during the year, and 3 houses were supplied with water.

Hospital accommodation for infectious cases is provided at Spital, through the Joint Hospital Board, of which the district is contributory. The reluctance to submit to removal is being gradually overcome.

## NORTHWICH.

### Urban Sanitary District.

Medical Officer of Health—Dr. J. M. Fox.

Population at Census, 1891—14914.

Estimated population in middle of 1893—16500.

Area in acres—1758.

Birth-rate per 1000 living—41·2.

Death-rate per 1000 living—23·7.

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

Deaths under one year to 1000 births—195.

The number of births registered in this district, in 1893, was 681. The number of deaths registered in the district, in 1893, was 391. The birth-rate and death-rate are more than 2 per 1000 living above the mean corresponding rates in the district. The proportion of deaths among infants is exceptionally large.

**Zymotic mortality.**—The number of deaths from zymotic diseases was 24, viz.:—11 scarlatina, 1 diphtheria, 4 typhoid fever, 1 puerperal fever, 1 erysipelas, 1 whooping-cough and 5 diarrhoea. The zymotic death-rate is decidedly low.

**Infectious diseases notified.**—The number of cases of infectious diseases notified was 213 viz.:—5 small-pox, 186 scarlatina, 5 diphtheria, 7 typhoid fever, 1 puerperal fever, 7 erysipelas and 2 chicken-pox. The Medical Officer of Health draws special attention to the disproportion between the number of deaths from infectious diseases and the number of notifications.

**Small-pox** has by the wisdom of Parliament been brought so largely under control, that there are many medical men who have never seen a case during the whole course of their professional lives. During the year 3 cases came under the care of the Sanitary Authority. The disease was at the time epidemic in and around Warrington. The first case was treated in the



house in which it arose, which was constituted for the period a temporary hospital. The second and third cases were treated in a marquee. The first case, which was the mildest, took twice as long as the others to attain the same stage of convalescence. In the second and third cases the eruption was confluent, but the patients made rapid recoveries. The cost to the Local Board of the first case was £30 16 0, of the second £20 19 1, and of the third £15 15 1. In no case did the disease spread.

The Medical Officer of Health quotes the remarks of Mr. C. Potts, Sub-Inspector, as evidence of the good accommodation furnished by the marquee.

"Our hospital accommodation at present consists of a large room, situated at Wade Brook, and a spacious marquee.

This has been thoroughly tried with the two cases of small-pox, and proved beyond doubt that the marquee is the best mode of dealing with this disease in warm weather: first, because you get complete isolation: second, you obtain a constant flow of pure, fresh air: third, you can more completely and frequently disinfect than in a room; and the outcome of the whole is, the patient is much sooner off your hands. A good test was afforded in our three cases. The first one was confined in a room. This was a mild case, but lasted nearly eight weeks. The next two cases, both confluent, were taken to the marquee, the one lasting four weeks, and the other five, thus proving the superiority of the marquee over the house."

**Results of increasing prosperity.**—Many additional difficulties are thrown in the way of Sanitary Administrators and their Officers, by the commercial activity which has marked recent years, in this district. When accommodation that is adequate to 10,000 is called upon almost suddenly to accommodate 15,000, the worst of sanitary evils are bound to arise, and it may be it is not in the interests of the district that hasty attempts should be made to relieve necessities so unexpectedly incurred. The most serious difficulty under these circumstances may be found in the water-supply becoming insufficient. And then let it be realised (if this be possible to those unacquainted with the brine-pumping districts) how enormously the perils of the situation are augmented by the ever-recurring damages owing to subsidence, subsidence which may take place in one or every liable spot at any moment, any day or night.

**Water-supply.**—This matter is receiving the incessant attention of the Surveyor, and many members of the Board are doing what they can to assist him. It is satisfactory to learn from the Surveyor that the town is receiving its daily supply of 300,000 gallons of Cote Brook water. The delivery was maintained with little intermission during the drought of 1893. The



Surveyor also wishes it to be clearly understood that there is no Wade Brook or Castle water used for domestic purposes. The Wade Brook water is, however, abundantly and advantageously made use of for street watering and engine purposes. The amount thus used is 20,000,000 gallons per annum. During 1893, when almost every gallon of water had an increased value, much additional labour was thrown on the Surveyor's department, in the detection of leakages from subsidence and other causes.

**Overcrowding.**—The Medical Officer of Health, from his own inspections made at all hours of the day, sometimes by appointment with the Inspector, and at other times taking the form of what are called "surprise visits," is of opinion that reports as to the extent of overcrowding have been greatly exaggerated. It was found necessary to take proceedings before the magistrates in 16 instances. But overcrowding repressed in some parts of the district is apt to appear in others. The people who commit this offence belong to a stratum of the population which ordinary sanitary procedures will not make sanitary. The Medical Officer of Health is in favour of appointing female Inspectors for selected industries. He advocated it in his Annual Report written in 1887, and would be thankful if the Local Board would give it the advantage of their approval.

**Systematic inspection** has been carried on unremittingly throughout the year. That this may be thorough, each ward in the town is inspected in turn. In the course of these inspections a vast number of verbal notices are given, all tending to increase cleanliness, but which never come under the notice of the Board.

**Nuisance removal.**—Statutory notices for the abatement of special nuisances have been served on 307 persons, during the year. These have had reference mostly to repairs of defective drains, foul ashpits and back premises and overcrowding, and the removal of house refuse by the scavengers.

**Scavenging, &c.**—The Inspector has had considerable difficulty in keeping the scavengers up to their work. The regular removal of the contents of privies and ashpits is a very important part of Sanitary Administration and the Sanitary Committee have shown great vigilance in enforcing the punctual performance of this work. During the year as many as 80 cesspools have been filled up and the closets converted into pail-closets.

**Drains and Sewers.**—A great many old drains have been taken up and relaid. All the main sewers of the town have been periodically flushed; and efforts have been made to



detect and repair breaches at any time effected by subsidence or otherwise.

**New Sewers.**—Two hundred yards of new sewers have been laid in Witton Street, 100 yards in Castle, and 100 yards in Navigation Road.

The sewage tank on the sewage land is being raised 3 feet in consequence of subsidence.

**New houses.**—During 1893 there have been erected 287 new houses. Thus since the taking of the Census in 1891, 587 new houses have been built. Allowing the average number of 5 persons to a house, the surveyor estimates the population at 18,000, *i.e.* 3086 in excess of the population enumerated in 1891. Various rates of births and mortality suggest this may be excessive, and the Medical Officer of Health has not adopted it.

**The Private Street Works Act, 1892.**—The Local Board has adopted this Act, and the Surveyor is now engaged on twelve new streets under this Act.

**The Housing of the Working Classes Act, 1890.**—An attempt has been made, during the course of the year, by the assistance of this Act to close certain houses in Bostock Court as unfit for human habitation. However, the efforts made to arrive at a practical method by which the Act might be brought into operation were not successful.

It was desired to deal with houses which could by no process of repair or alteration be made fit for human abodes. Demolition was the only cure of an evil so acute. It was easy for the Medical Officer of Health to make the necessary "representation," but for the Board to step in and do what they liked with another man's property was a much more complicated matter. The second part of the Act referred to, dealing with unhealthy dwelling-houses, makes no mention of compensation. So it was left to the Clerk to present a report on the subject. From this one short extract may be quoted. It comes to the pith of the matter and appears to show that any non-compensation scheme is impracticable. Mr. Cowley says: "In coming to a determination to proceed under the Non-Compensation Section for an order to demolish houses, the Board should, in my opinion, be satisfied as to conditions referred to in Section 39 (that is the demolition being beneficial to adjacent properties) that they do not arise. Assuming they do, the question is urgent, whether the Board can proceed under the Non-Compensation Section for an order to demolish."

**Inspection of Dairies, Bakehouses, and Lodging-Houses.**—All dairies, bakehouses, and Lodging-houses have been systematically inspected during the year.



**RUNCORN.****Urban Sanitary District.**

Medical Officer of Health—Dr. F. McDougall.

Population at Census, 1891—20,050.

Estimated population in middle of 1893—20,050.

Area in acres—1,179.

Birth-rate per 1000 living—No Return.

Death-rate per 1000 living—26.2.

Death-rate from seven principal Zymotic diseases—7.1.

Deaths under one year to 1000 births—No Return.

This is an Improvement Commissioners District, and takes in Higher Runcorn.

If the local population had increased since the Census in 1891 in the same proportion as it increased in the ten years 1881–91, the population of the district, in the middle of 1893, would be about 21,150. However, the Medical Officer of Health is of opinion that the population is not increased since it was enumerated in 1891; as, when the Census was taken, there was a large number of men and their families living in the town who were engaged on the Ship Canal, then in course of construction, and these have since left the District.

The number of births, in 1893, the Medical Officer of Health states that he is “unable to give.” The number of deaths, including 14 deaths of persons belonging to the District which took place in the Dutton Workhouse, was 527. No less than 188 deaths (upwards of 35 per cent.) were of infants under one year old. The death-rate is high, and the proportion of deaths among infants is exceptionally large.

**Preventable Diseases.**—The number of cases of preventable diseases notified in the district, in 1893, was 546, viz.: 144 small-pox, 78 scarlatina, 36 diphtheria, 1 croup, 1 typhus fever, 82 typhoid fever, 142 continued fever, 7 puerperal fever, and 55 erysipelas. In 1892, the number of these diseases notified was 272, and in 1891, the number was 179.

In 1893, the number of deaths from zymotic diseases was 148, viz.: 12 small-pox, 4 scarlatina, 8 diphtheria, 1 croup, 18 typhoid fever, 1 continued fever, 3 puerperal fever, 3 measles, 7 whooping cough, and 87 diarrhoea. The death-rate in respect of the seven chief zymotic diseases is very high. To some extent this is due to the prevalence of small-pox and typhoid fever, but mainly to the infant mortality from diarrhoea.

**Small-pox.**—Several cases of this disease had been reported during December, 1892, but its prevalence increased in January, 1893, and the accommodation at the Isolation Hospital was soon found to be wholly inadequate. The



Authority accordingly erected two large wooden buildings within the hospital grounds, which were utilized for patients who were convalescent and in quarantine. These buildings, if kept in good repair, will be available when accommodation of the class mentioned is again required. The hospital staff, also, was in January re-organized and augmented. The Authority placed the Medical Officer of Health in temporary charge of the Hospital. In this work he had the co-operation of Dr. Brunton, who unfortunately contracted the disease himself very early in the epidemic.

As one of the cases reported was not notified till after death, the actual number of persons the Authority had to deal with was 143. Of these 109 were treated in the Isolation Hospital, and 34 were treated at their own houses. Nine deaths occurred in Hospital; one being due to inflammation of the lungs in a patient who had recovered from small-pox, but was in a very debilitated condition. Of the patients treated at their own homes 3 died.

The youngest patient treated in Hospital was only three weeks old, and the modifying influence of vaccination, even when performed several days after exposure to infection, was very manifest in this case. The mother was admitted suffering from small-pox soon after her confinement, and would not be separated from her infant. On admission the child was successfully vaccinated. Some days afterwards the infant developed an exceedingly mild type of small-pox.

The oldest person admitted was sixty-six years of age. She suffered from a very confluent attack, and unfortunately succumbed. It would be too tedious to enter here on the medical history of the various cases treated in Hospital, although many showed the beneficent effect of successful vaccination, in modifying the type of the disease. One female patient especially gave occasion for great anxiety, owing to her condition on admission, as she expected to become a mother within two months. However she passed through the different stages of a severe attack very satisfactorily, and was discharged without any mishap.

The last case admitted was on the 14th of August and was an isolated case, the disease having been contracted at Manchester. The prompt removal of this case prevented any further extension. Many of the patients after convalescence, rendered useful service in the ordinary work of the wards, and also in keeping the grounds. One useful and needful piece of work was added to the permanent buildings of the place in the form of a mortuary. When the epidemic broke out there was no mortuary, and an unsightly shed was hurriedly put up along with the other wooden buildings. This was superseded by a



more substantial and better situated mortuary hewn out of the rock at the small cost to the Authority of £12 10s. 0d. for putting a roof and a door to it, the other work being entirely done by patients undergoing their term of quarantine. The estimated cost of such a mortuary as was thus economically provided was about £100.

It was most unfortunate that at first so much prejudice existed against the hospital. Had this not been the case more might have been done in limiting the spread of the disease. Early in the year there were four different centres of infection, and when the epidemic was well under control, in March, a fresh focus was discovered, to which a large number of cases were traced. The utter disregard shown for the public safety, in some localities was most reprehensible, and in several instances where no medical man was in attendance, information that small-pox was suspected reached the Medical Officer of Health in an indirect way. When practicable cases were at once removed, and those admitted to hospital were detained till all danger of their infecting others was over.

During the erection of the building on the hospital grounds two of the workmen employed became infected. These men sickened outside the district, but that they really had the malady is well authenticated. Their becoming infected favours the view of the aerial diffusion of small-pox.

**Re-Vaccination.**—The Authority providing for public vaccination in the district made arrangements for the re-vaccination of adults and young persons, but a very limited number presented themselves for re-vaccination. None of those who did, and in whom the operation was successful appear to have taken small-pox.

**Diarrhœa.**—The summer of 1893 was an exceptionally hot one, practically beginning with Easter and continuing till late on in the fall of the year. As a result, closely associated with this fact, diarrhœa was exceptionally prevalent. This disease, though not affecting the death-rate of the robust adult population materially, is still one which is very fatal among delicate and bottle-fed children. The type of the disease, in 1893, was of an exceptionally severe character, and accordingly 74 deaths in children under five years old were recorded. The 13 deaths at other ages shows the malady was not restricted to infants. The whole number of deaths registered under this heading (87) shows that the death-rate from this cause was 4·3 per 1000 living.

**Typhus Fever.**—Only one case was notified, and the patient was isolated as well as possible at her own home, with the satisfactory result that there was no extension of the disease. The patient must have been infected outside the district.



The Medical Officer of Health thinks the Authority may be congratulated on having escaped an epidemic of typhus. For about five years Runcorn has harboured a migratory class of people, many of whom live under conditions which make them particularly prone to an outbreak of typhus. Runcorn was also visited by a large number of professional tramps during the construction of the Ship Canal, and these are frequently carriers of typhus. The rigorous application of the Authority's powers has done much to avert the danger.

**Typhoid and Continued Fever.**—Following closely the outbreak of diarrhœa, typhoid fever made its appearance in the early autumn, and was more than usually prevalent especially in September and October. In all 82 cases were reported, and of these 52 were notified during the two months mentioned. There were also 142 cases notified as continued fever. If the two be included under one head, it represents a total of 224 cases. The Medical Officer of Health cannot undertake to discriminate between the two terms. If the cases notified as continued fever were of a typhoid character they should have been returned as typhoid. Eighty-eight of the cases of continued fever were notified in September and October, and those that proved fatal (with one exception) were certified as dying of typhoid fever. No part of the town was exempt from the disease, but the largest number of cases occurred in the Hill Brow district and the Eastern portion of the town. A considerable number of the cases were in single cottages, ill-ventilated and usually overcrowded. In all 34 cases were removed to the Isolation Hospital. In dealing with typhoid fever, isolation is not a potent remedy in cutting short an epidemic. Improving sanitation is the only way to prevent recurrent outbreaks.

The Medical Officer of Health has made a personal inspection of infected houses in the parts of the town mentioned, and the Inspector, who accompanied him, is preparing reports thereon for submission to the Authority. It is essential that these Reports should receive careful attention, so that steps may be taken to obviate a condition of things which has contributed doubtless, to foster the disease locally.

The generally sewage-soaked condition of the soil at Zion Place, due to the want of efficient drainage, had become a standing menace to the health of the people, with the result that 13 cases of fever were notified at this place in 1893. The property has now been certified as unfit for human habitation, and since the close of the year has been shut up by magisterial order.

When the notifications were received attempts were made to find out the cause or origin of the disease in each instance. In some cases structural defects, in the houses or outside them,



were discovered and prompt steps taken to remedy them, but in a large proportion of cases no apparent cause could be discovered.

It may not be out of place to mention here the urgent need of constant supervision, when drains are being relaid or new ones are being constructed, or when sanitary fittings are being put in. To emphasize this the two following instances of defects discovered are cited.

**A defective house-drain.**—Indications that something was wrong led to the examination of a good-class house. The house-drain, receiving the contents of the soil-pipe, was found to be composed of broken pipes, practically socketless and open jointed. It ran parallel to the end of the house, about two feet beneath the surface of the ground. When it reached the front corner of the house, it dipped down and turned, cutting diagonally across the lawn in front to join the street sewer. The foundation of the building was made of rubble stone, and this badly constructed drain running parallel to it, allowed its contents to escape through the foundation wall into a large cavity underneath the drawing-room floor. The over flow of this cesspool was provided for by a hole through the wall under the drawing-room window about a foot under the surface of the soil, and a gutter filled with broken bricks connected this hole with the drain again, into which the fluids took their chance of finding a way by means of the open joints. When the drawing-room floor was removed, it was found that a thick deposit of feculent matter had settled over the clay bed underneath, and was about six inches thick. Forty bucketfuls were removed of this filthy deposit.

This account of bad work seems almost incredible, but it is nevertheless true. As interesting is the note about

**A defective soilpipe.**—In the drawing room of a good-class house, the wall-paper was discoloured for some distance in a perpendicular line. On examination it was found that this indicated the position of the soilpipe and that there was nothing but a little plaster over it. The soilpipe was made of earthenware pipes of inferior quality, very imperfectly jointed. One of the pipes had a large crack running down the side next the room. There had thus been an escape of sewer gas into the house.

Such defects as the above will be absolutely impossible under the new Building Bye Laws. The Authority is armed, under these bye-laws, with plenary powers over the construction of every building intended for human habitation, and by careful examination of plans and constant supervision during construction or alterations, conformity with the bye-laws will be insured.



**Scarlatina.**—Seventy-eight cases were notified with four deaths. This is essentially an endemic disease, and the careless indifference shown by parents and others in charge of patients during convalescence and desquamation, along with the utter disregard of ordinary precautions by neighbours in avoiding an infected house, is largely responsible for the spread of the disease.

**Diphtheria.**—Thirty-six cases were reported, and the disease was most prevalent in June. Eight deaths were returned as due to the disease. True diphtheria is very fatal, but often great discrimination is needed in deciding what is true diphtheria.

**Puerperal Fever.**—Seven cases were notified, with three deaths. The Sanitary Authority has very little controlling influence in these cases.

**Erysipelas.**—No less than 53 cases were reported, and there were four deaths. The disease is largely due to constitutional causes.

Every possible precaution was used to prevent the spread of the diseases notified. All putrescent matter was promptly removed and disinfectants liberally supplied. Structural alterations of premises of an extensive character have also been effected.

**Excremental Disposal.**—The Medical Officer of Health has previously reported in favour of the water-carriage system for excremental disposal, especially in certain localities. During the year several closets have been fixed in various parts of the town—they are of many kinds, differing in principle and probably in utility. The Medical Officer of Health proposes that the Authority should institute an examination into the relative merits of the various kinds of closets now in use by Sanitary Authorities, and having satisfied themselves as to which is the best, recommend it for general use in the town.

It will be obvious to the Authority that, should any of the closets turn out to be dangerous or useless, it would be highly inconvenient to require owners of property to remove them after they had been in use some time and found unsuitable. The gradient of drains and sewers should also be taken into consideration before any form of closet is allowed to be fixed, and the condition of the sewers should also be carefully examined.

**Sewers.**—The intercepting sewer has now been in use for over two years. It should be periodically examined by a responsible representative of the Authority. Should water-carriage come largely into use, the need of strict supervision of sewers will be apparent.

The Medical Officer of Health has reason to believe that the cemetery drains into one of the public sewers. If this be so,



the Authority should satisfy themselves they are not permitting anything which may be dangerous.

**Sewer-flushing.** — Special attention should be paid to this, and the Authority should make sure the method in use is efficient. At present only a portion of the intercepting sewer is flushed—the sewer east of Mersey Street is not.

Any difficulty arising regarding this portion of the sewer, might be met by a series of flushing tanks, with service communication from the Ship Canal.

## SALE.

### Urban Sanitary District.

Medical Officer of Health—DR. J. S. WITHERS.

Population at Census, 1891—9644.

Estimated population in middle of 1893—10000.

Area in acres—2006.

Birth-rate per 1000 living—23.0.

Death-rate per 1000 living—13.3.

Death rate from seven principal Zymotic diseases—1.3.

Deaths under one year to 1000 births—169.

During 1893, the number of births registered was 230, and the number of deaths registered was 133. Both birth-rate and death-rate are about equal to the mean birth-rate and death-rate, in the district, during the five years, 1888-92. The birth-rate is a little lower than the mean, the death-rate a little higher. The proportion of deaths among infants is large.

The number of fatal cases of zymotic diseases was 13, viz. :—1 scarlatina, 1 diphtheria and 11 diarrhœa.

The number of cases of infectious disease notified was 96, viz. :— 1 small pox, 84 scarlatina, 3 diphtheria, 5 typhoid fever and 3 erysipelas.

**Small-pox.**— The one case of this disease reported occurred in a small shop. The patient was well vaccinated and had the disease very mildly. He was at once removed to Monsall Hospital, and the shop was closed for disinfection. Of the two other occupants of the premises, one only submitted to re-vaccination.

**Scarlatina.**—An epidemic of this disease, unusual in the mildness of its character and the sluggishness with which it spread, prevailed during the whole year. Though 84 cases were reported there was but one death. Five cases were removed to the Monsall Hospital, the rest were treated at home. During this epidemic the Medical Officer of Health felt very strongly



the need of an apparatus for disinfecting bedding &c., near at hand, and of a suitable vehicle in which to transport it. Many people object, and not unnaturally, to the use of the ambulance waggon for this purpose.

**Diphtheria.**—In two of the 3 cases notified the subjects were little children. The adult case proved fatal. An examination of the house where the death occurred showed a drain beneath the scullery and communicating with it. A notice was served on the owner to remove this drain. No nuisance had been complained of. As regards the children, the disease (which was mild) was attributed to effluvia from a sewer ventilator, situated a few yards from the house where the children lived. Nothing is more difficult than to estimate the influence of factors such as these; but there can be no doubt of the wisdom of making use of every opportunity to remove insanitary conditions.

**Typhoid Fever.**—Of the 5 cases reported 2 were obviously imported from without, a third was supposed by the parents to be due to the child having played about a recently opened drain.

**Diarrhœa** was mainly responsible for the increased mortality among infants. In 1892 there were 2 infants who died of the disease, in 1893 there were 10 infants. Doubtless the increased summer heat favoured the disease.

**Influenza**, of moderately severe type, was widely prevalent during the last quarter of the year. It was only directly fatal in 5 cases, but the number of deaths indirectly caused by it cannot be exactly estimated. Indeed, it was mainly instrumental in raising the death-rate from 8·8 in the third quarter to 16·8 in the fourth quarter. The attack of influenza weakens the patient and is often followed by inflammation of the lungs, and thus the fatal termination is frequently ascribed to bronchitis or pneumonia.

**Action taken to prevent the spread of infection.**—The cases of infectious disease notified occurred in 78 houses. All, save two, were personally visited by the Medical Officer of Health. In each case he endeavoured to ascertain the cause of the disease, and suggested a remedy when the cause appeared remediable. He enforced precautionary measures, and pointed out the wisdom of allowing disinfection of the bedding and rooms to be done by the Board's Officer. In this connection it must be admitted that if all had done as advised, the disinfections would have been difficult to carry out. They would have involved some seventy journeys to Manchester, with bedding, and the use of the objectionable fever-van in all cases.



**Sewer Ventilators.**—In consequence of the dryness of the year the sewer ventilators have been frequently complained of as causing nuisance. In several instances the evil appears to have been mitigated by placing baskets of polarite in the man-holes. But owing to the scarcity of water it has been difficult to deal with the nuisance adequately. In the future, when the district has an unfailing water-supply, there will be no excuse for neglecting the cleansing and flushing of sewers.

**Nuisance Abatement.**—The Medical Officer of Health makes regular inspections of the district and reports monthly. The following are the more serious nuisances personally enquired into. With references to the majority, notices were served. Four dirty courts or entries, 6 ashpits dilapidated, &c., 5 foul or defective drains or sewers, 4 water-closets out of repair, 2 nuisances from manure heaps, and 2 nuisances in rooms from decomposing matter. The removal of refuse from ashpits, &c., has on the whole been satisfactorily performed.

**The new Sewage Scheme** has made considerable progress, and the district is within measurable distance of the time when it will cease to pollute the river with its sewage.

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## SANDBACH.

### Urban Sanitary District.

Medical Officer of Health—DR. J. M. FOX.

Population at Census, 1891—5,824.

Estimated population in middle of 1893—6,000.

Area in acres—2,694.

Birth rate per 1000 living—35.5.

Death-rate per 1000 living—15.1.

Death-rate from seven principal Zymotic diseases—0.8.

Deaths under one year to 1000 births—108.

In 1893 the number of births registered was 213, and the number of deaths registered was 91. The birth-rate is 2 per 1000 living above the mean birth-rate of the district, and the death-rate is 3 per 1000 living below the mean death-rate of the district.

The number of deaths from zymotic diseases is only 5, viz:—1 scarlatina, 1 typhoid fever, 1 whooping cough, and 2 measles. The zymotic death-rate is very low.

**Small-pox.**—Early in the year an outbreak of small-pox occurred in one of the lodging-houses. There were altogether 5 cases. Through the kindness and forethought of Joseph Hill, Esq., the Chairman of the Congleton Rural Sanitary Authority, an isolation hospital was ready just in time to receive



the Sandbach cases. One case was treated at home, but the remaining 4 cases were removed to this hospital, which is situated at Arclid. The first patient was admitted to hospital in February 27th. All 5 patients made speedy recoveries.

**Water-supply.**—The work of connecting fresh houses with the mains has been pushed forward with much success, and there now only remain 24 houses which, in violation of the Board's wishes, are using water certified as unfit for domestic purposes. The small number is very satisfactory considering the short life of the scheme, and will insure the Water Committee bringing the delinquents to connect their houses with the mains.

When Elworth, Ettiley Heath, and Hind Heath are supplied, then the entire weight of responsibility, as regards water supply, will be taken from the Board.

**Drains and Sewers.**—The sewers, drains, gullies, &c., have been attended to, and the required repairs effected. The outfall sewer and two outlying districts, Park Lane and The Heath, are occupying the serious attention of the Board. An eminent engineer has been consulted, and it is hoped that all additional necessary work will be done without unduly burdening the district.

**Scavenging.**—The Inspector reports that during the year special attention has been given to the removal of excreta at shorter intervals. No less than 10,199 visits have been paid, and 509 tubs of night-soil removed from the town and sold for £106. For the removal of house refuse 2,168 visits have been paid, and 1,596 loads removed. The ashes, &c., are carted to fill up ponds and ditches, and the night soil is applied to the land within a radius of two miles from the town. The increased attention given to this department is to the manifest advantage of the district. The outlay will be greater, but unquestionably it is money well spent,

**Inspection.**—The district generally and all lodging-houses and slaughter-houses have been inspected. Reported nuisances from accumulation of house refuse, &c., have had prompt attention and early removal.

**Smoke Nuisances.**—The principal works in the district having unfortunately for some time been partially or wholly closed, the district has been comparatively free from smoke. However, 2 silk mills, 2 flour mills, and several other smaller works are being carried on, and complaints of smoke have been made, but after investigation by the Nuisances Committee, promises were made that care would be used in future, and it was thought unnecessary to take further notice of the complaints.



**New Buildings.**—During the year thirty-seven houses have been erected or completed—twenty-two on Ettiley Heath, three in Wheelock Road, ten on The Heath, and two in High Street. All the new houses are or soon will be supplied with water from the Board's mains. These alterations in the town will not only improve its appearance, but, with better buildings and better arrangements, more sunlight and fresh air, it cannot but be healthier to live in.

## TARPORLEY.

### Urban Sanitary District.

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

Population at Census, 1891—2702.

Estimated population in middle of 1893—2710.

Area in acres—6194.

Birth rate per 1000 living—36·1.

Death rate per 1000 living—15·1.

Death-rate from seven principal Zymotic diseases—1·8.

Deaths under one year to 1000 births—102.

The Urban Sanitary District consists of Rushton, Eaton, Utkinton and Tarporley. The area and population are given as follows:—

	Areas in Acres.	Population at Census.
Rushton ... ..	1797	324
Eaton ... ..	1344	461
Utkinton (including Cotebrook) ...	1889	498
Tarporley (including Rhuddall Heath)	1164	1419

In 1893, the births registered in the district numbered 98, and the deaths numbered 41. The birth-rate is high, the death-rate low. The proportion of deaths among infants is not large. The mortality among old people was much reduced.

There was one death from diphtheria, one from typhoid fever, one from rheumatic fever, one from phthisis, and there were 3 deaths from diarrhoea, 4 from bronchitis or pneumonia and 3 from heart disease.

There were in all 7 cases of infectious disease notified (5 scarlatina, 1 diphtheria and 1 typhoid fever). The cases were isolated at home, the houses were examined for defects and disinfectants were supplied.

There is no Isolation Hospital for this district. Some years ago the Local Board unsuccessfully endeavoured to form a combination with neighbouring Authorities, for the purpose of providing a hospital. Hitherto, however, it has been little needed.



In June, the Medical Officer of Health made a general inspection of the district, and reported in detail on various matters that required attention, especially with regard to milk farms, slaughter-houses and bakehouses. They were generally in good condition, but in some instances there were defects requiring remedy.

The work of connecting houses with the newly constructed water mains has been pushed forward. The softness of the water supplied has been greatly appreciated. In order to enable compulsory orders to be served, the Medical Officer of Health has analysed 18 samples of well-water, of which 6 were found to be seriously contaminated. In the last Annual Report it was stated that 88 premises were connected with the mains—there are now altogether 160 premises connected.

A section of the sewerage of Tarporley has been completed. It is important the work should be continued with as little delay as possible.

The Inspector is attentive to his duties and reports many nuisances abated. There appears to be little overcrowding, and there are no one room tenements in occupation.

Except in a few instances, little difficulty has been found in regard to the emptying of privies and ashpits. Owing to the almost entirely rural character of the district, the houses are for the most part surrounded by agricultural land, and farmers are found who are always willing to undertake the task. In cases of difficulty the Board's Surveyor intervenes. A number of privies (those most requiring it) have been reconstructed under the Board's directions.

## WALLASEY.

### Urban Sanitary District.

Medical Officer of Health—DR. A. CRAIGMILE.

Population at Census, 1891—33229.

Estimated population in middle of 1893—35500.

Area in acres—3408.

Birth-rate per 1000 living—31·2.

Death-rate per 1000 living—18·0.

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

Deaths under one year to 1000 births—150.

This Urban Sanitary District includes the three Townships of Poulton-cum-Seacombe, Liscard and Wallasey. The area of these and population at Census is 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 1893, is as follows :—

	Population.	Birth-rate.	Death-rate.
Poulton-cum-Seacombe ..	15950 ...	35·7 ...	19·3
Liscard ... ..	17350 ...	26·6 ...	16·9
Wallasey ... ..	2200 ...	34·0 ...	17·7

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 1893, was 1108. The number of deaths registered in the whole district in 1893 was 641. The death-rate in 1893 is 1·8 above the mean death rate in the district during the ten years 1883-92. The birth-rate in 1893 is about 1·3 above the mean birth-rate in the district. It is remarkable that Poulton-cum-Seacombe registered 107 more births than Liscard, though the population was less by 1400. The number of deaths was 109 in the first quarter, 172 in the second quarter, 179 in the third quarter, and 181 in the last quarter. The mortality was therefore exceptionally low in the first quarter, and increased with each succeeding quarter.

The following meteorological results, obtained through the courtesy of Mr. Plummer from the Bidston Observatory, shows the mean temperature, mean barometer, and the amount of rainfall in inches for every month of the year 1893. The mean barometer as given below has been reduced to 32° Fahrenheit and to sea level :—

1893.	Mean Temperature (degrees).	Mean Barometer (inches).	Rainfall (inches).
January ... ..	37·5	30·057	1·467
February ... ..	41·2	29·633	2·873
March ... ..	46·5	30·093	0·531
April ... ..	51·0	30·172	0·500
May ... ..	55·5	30·054	1·657
June ... ..	61·2	29·995	1·545
July ... ..	61·9	29·879	3·136
August ... ..	63·7	29·981	2·336
September .. ..	56·0	29·827	3·401
October ... ..	51·2	29·810	2·640
November ... ..	42·3	30·017	1·420
December ... ..	42·6	29·895	3·031



The Medical Officer of Health draws attention to the marked difference between the temperature and rainfall of 1893 and the temperature and rainfall of 1892. The sign + indicates an increase for 1893, and the sign — a decrease for 1893, as compared with the corresponding month of 1892.

1893.		Mean Tem. in Degrees.		Rainfall in inches
January	...	+0.3	...	—1.360
February	...	+2.2	...	+1.135
March	...	+8.2	...	—0.931
April	...	+4.9	...	—1.031
May	...	+1.9	...	—0.966
June	...	+4.5	...	—1.767
July	...	+4.2	...	+0.737
August	...	+4.4	...	—1.233
September	...	+1.5	...	+0.302
October	...	+5.4	...	—3.751
November	...	—2.6	...	—0.515
December	...	+5.1	...	+0.793

This comparison shows that the mean temperature of every month except one was higher in 1893 than in 1892, and that the monthly rainfall in 1893 was lower than in 1892 in all but four months. The mean temperature of 1893 was about  $3\frac{1}{2}$  degrees higher than the mean temperature of 1892. The amount of rainfall in 1893 was about  $8\frac{1}{2}$  inches less than the amount of rainfall in 1892. One effect of this great rise in temperature, with small rainfall, was the early prevalence of zymotic diarrhoea, which began in June and continued till December.

The proportion of deaths under one year to births in 1893 is higher than the mean returned in recent years for the district. About 22 per cent. of those who died were persons 65 years old and upwards.

Only four of the whole number of deaths were not certified by a registered medical practitioner or coroner. Fifty-four inquests were held during the year.

The principal zymotic diseases caused 81 deaths, viz.: 1 measles, 2 scarlatina, 7 diphtheria, 12 whooping-cough, 26 fevers, and 33 diarrhoea. 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 1893, was 356, viz.: 1 small-pox, 123 scarlatina, 36 diphtheria, 3 croup, 132 typhoid fever, 6 puerperal fever, and 55 erysipelas.

**Small-pox.**—The only case of this disease in the district which came to the knowledge of the Authority was reported in



May. The patient was living in James Street, Seacombe, and employed at the Gandy Belt Manufactory. The source of infection could not be traced. He had been away, at Stourbridge, on business, but no case of small-pox was known to the Authority in that district. As soon as the nature of the disease was recognized, the patient was removed to the Mill Lane Hospital. All the other inmates of his house were promptly vaccinated by the public Vaccinator. The hospital attendants, who had not been re-vaccinated, were also vaccinated. The man bore no vaccination marks and suffered from confluent small-pox. No second case occurred, owing to the prompt removal of the patient and the vaccination of those exposed to infection. Without an Infectious Hospital in readiness this case would have caused great anxiety, other cases might have arisen from it and began an epidemic, as has frequently happened in other parts of the country.

**Measles and Scarlatina.**—Measles, which was so prevalent in 1892, causing 31 deaths, caused only one death in 1893. As this disease is not notified the number of cases is not known. The scarlatina mortality was also very low in 1893. Of the 123 cases notified, 29 were children under five years old, and of these two died. The 94 other patients all recovered. Twenty-one of the cases were treated in Mill Hill Hospital. Cases of scarlatina were notified every month in the year, but 62 were notified during the last three months. The cases at the end of the year were for the most part at Seacombe. As is usual in respect of scarlatina, the infected premises and contents were carefully disinfected by the Board's Officers, and notices were sent to the schools attended by children from infected households.

**Diphtheria & Croup.**—Diphtheria (causing 7 deaths) and croup (causing 2 deaths) were rather more prevalent than in recent years. All the fatal diphtheria cases were in Seacombe, 5 occurring in April, 1 in May and 1 in June. The death-rate per 1000 living (0·19) is about 0·1 less than the diphtheria death rate for England and Wales. The 36 notified cases of diphtheria were investigated, and it was found that a group of 7 cases in Seacombe closely followed one another. Five of these cases attended one public school, the sixth was a younger brother infected from one of the above, and the seventh lived close to one of the other children. There were 5 deaths in this small group out of the total number of 7 deaths for the year. On visiting this school it was found that for both boys and girls, the old privy system was in use, and the privies were in a foul and offensive condition. It is impossible to say whether or not this was the cause, because it is well known that diphtheria



spreads rapidly in a school, given a case to start it, for a child will often attend for a day or two after the mischief has begun in the throat, and readily conveys it to those sitting next it. The School Authorities were at once apprised of the state of matters, and willingly and promptly adopted the suggested sanitary improvements, introducing the trough-system, which is by far the best for public elementary schools. No more cases have occurred among pupils of this school.

In May, two cases occurred, both attending a small private school. In 5 other cases complaints were made of offensive smells from the sewer manholes close to the house, and in one case in Victoria Road, Seacombe, the sewer had overflowed into the cellar, leaving a copious and foul deposit, giving rise to offensive smells in the house. Only four out of the whole number of notified cases of diphtheria were removed to Hospital.

**Whooping-cough.**—This disease, not being notified, the number of cases, is not known. The death-rate (0·38) per 1000 compares unfavourably with the whooping-cough death-rate in England and Wales (0·32). Nine of the deaths were in Seacombe, 2 in Liscard and 1 in Wallasey. All the 12 fatal cases were children under 5 years old.

**Diarrhœa**, like measles and whooping-cough, is not notified, but it was prevalent during the latter half of the year, and occasioned 33 deaths, 30 of which were among children under 5 years of age. The diarrhœa death-rate per 1000 living was 0·92, which is a little lower than the corresponding death-rate for England and Wales. Fourteen of the deaths occurred in Seacombe, 9 in New Brighton, 4 in Liscard, and 6 in Wallasey. Two rapidly fatal cases in Wallasey occurred close to a foul smelling and untrapped gulley, a nuisance which has since been abated. The extreme heat and dryness of the summer account for the prevalence and fatality of this disease. The disease was very prevalent in the low-lying parts of Wallasey, which might be due to the excess of decomposing vegetable matter there, with small fall for water in the ditches, etc.

**Fevers.**—One hundred and thirty-two cases of typhoid fever were notified, and of these 23 proved fatal. The district typhoid fever death-rate was 0·64 per 1000 living, about three times as high as it was in England and Wales. Six cases of puerperal fever were notified, and three proved fatal. One of the fatal cases was at Seacombe, one at Liscard, and one at Wallasey. Typhoid fever prevailed during the whole of the year, and all over the district, but the type of the disease was less fatal than in 1892. Eleven cases were notified in the first quarter, 21 in the second quarter, 50 in the third quarter, and 50 in the last quarter. Eight of the fatal cases occurred in Seacombe, 15 in



Liscard (5 in New Brighton and 10 in Liscard proper), and none in Wallasey. Five of the fatal cases (2 in Seacombe, 2 in New Brighton, and 1 in Liscard) were probably imported.

The warm weather extending from February to October, and in a less degree to the end of the year, had almost certainly an important bearing on the production of the numerous cases of typhoid fever, and the diminished rainfall materially contributed to this result. There were few occasions when the rainfall was so sudden and copious as to thoroughly flush out the drains and sewers. Thus when the germs of typhoid fever were carried into a drain or sewer, they had a much better chance than usual of lying undisturbed, while the increased temperature undoubtedly favoured their multiplication. If, as a next step, sewer gas, laden with these germs, escapes into houses through defective fittings, or into the air round a house, and so is breathed for some time, one sees how the disease may be spread. All these conditions are made worse when a drain or sewer is blocked, or where owing to bad gradients the flow is much retarded. These considerations will largely account for the occurrence of three sharply localized outbreaks of typhoid fever during the year. They were reported on at the time, but the following notes may prove interesting.

The first was in Beaconsfield Road, Seacombe, and the 2 short streets leading (and drained) into it, called Servia and Bosnia Streets, with one side of Thomas's Buildings also drained into Beaconsfield Road. One case was reported in Beaconsfield Road in the middle of May and, in July and August, 11 cases followed in this group, all having a common outlet for their drains into Beaconsfield Road sewer. This sewer was found to have a very defective fall, being quite stagnant in parts, and the sewer common to the South side of Beaconsfield Road and the North side of Thomas's Buildings was found to be choked and faulty. These sewers were all promptly relaid with better gradients and no case has been reported since from any of these streets.

The second localized outbreak was in Tower Street and Rossett Place, Liscard, in June and July. The sewer draining the houses in Tower Street, where the cases occurred, ran out to join the Rossett Place sewer, and the former was found to be quite blocked. These sewers were also promptly relaid and the defects remedied.

The third outbreak was in the group of houses known as Stone Cottages at the Liscard Village end of Manor Road. In all 10 cases occurred in September and October. The sewer draining these cottages runs down the back passage and out into Manor Road, and on the occurrence of the outbreak, it was opened in 4 places to ascertain its condition. It was flowing



freely except in one place where there was a lack of fall and this was remedied. These cottages have outside water-closets and, as far as one can ascertain, the infection spread by sewer air getting into the backyards and probably into the houses carrying with it the poison of the fever.

All these cases point to the necessity for efficient disinfection of the excretions in typhoid fever. Those in charge of patients have no excuse for neglecting to do this, as the Board's officers are always ready to supply disinfectants, with instructions for use.

The Medical Officer of Health was unable to trace any connection between the milk or water-supply and this disease. Some of the sanitary defects discovered in connection with cases of the disease have been already described. All the defects observed have been carefully tabulated, but the enumeration of these would occupy too much space. Among them may be mentioned choking of the w.c. drain, broken w.c. traps and connections, and other broken traps allowing sewer gas to escape; rain pipes running direct into drains and so allowing sewer gas to escape through defective joints, often placed near windows, while in some cases there were complaints of offensive smells from manholes in front of the house. Notices were promptly served to remedy all defects found, not only in houses visited on account of the outbreak of typhoid fever, but in all where infectious disease was notified. The house-drains were also flushed with disinfectants, twice or thrice weekly, where cases of infectious disease occurred. Thirty-six of the typhoid fever cases reported were removed to Hospital.

**Epidemic Influenza** appeared in March, April and May, and again in November and December, constituting the fourth and fifth local visitations of this extraordinary disease. There were 3 deaths ascribed to the disease in the earlier epidemic and 9 in the later, making 12 in the year. In 1892 there were 8 deaths from influenza, in 1891 there were 20.

**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 Board, and are visited by the Inspector, but nothing suspicious arose in connection with any such person, in 1893.

**Re-construction of some Sewers.**--In the last Annual Report the Medical Officer of Health had to record important work coming under this description. During 1893, also, much has been done to improve the sewers. Besides the sewers already mentioned as entirely relaid after local outbreaks of typhoid fever, the sewers in William Street and Ellis Street,



Seacombe, were relaid, and 120 yards of the Grosvenor Road sewer, 145 yards of the Seabank Road sewer and 110 yards of Mount Road sewer, New Brighton; as well as the sewers in the following streets and passages :—

Seymour Street and Seymour Place East  
 Passage between Egerton Street and Tollemache Street  
 „ „ Clwyd Street and Pleasant Street  
 „ to rear of Catherine Street, New Brighton  
 Passage between King Street and Wright Street  
 „ to rear of Granville Terrace, Wallasey  
 „ to rear of Gladstone Road, Seacombe  
 Part of Mill Lane, Liscard  
 Charles Street, Egremont  
 Part of Demesne Street, Seacombe  
 Rossett Place, Liscard  
 Part of Manor Road, Liscard, to replace an old rubble drain.

**Drain-flushing.**—The systematic flushing of drains has been carried on throughout the year, the flushing gangs being instructed to visit every house twice during the year. The Medical Officer of Health, as he has often stated, is desirous of having this done more frequently—at least once a quarter—as he considers it of the greatest use not only in cleansing out the whole system of house drains but for detecting choked drains, intercepting traps &c. He is of opinion that sewers as well as house-drains should be systematically flushed, and perhaps when the new supply is available arrangements may be made for the regular flushing of the sewers.

In some towns of France, a new experiment has been tried for flushing and thoroughly disinfecting drains, called, after its inventor, the Hermite System. Sea water is submitted to electrolysis, the result being that the electricity develops free oxygen and chlorine in their most active condition; the water is then used for sewers, drains, &c., and the results in the way of destroying all odour and poisonous germs are said to be most extraordinary. Hitherto it has not been tried in this country, but Worthing, which suffered so severely from typhoid in the summer and autumn of 1893, is introducing the system, and its experience will be watched with the greatest interest. It may be that a seaboard district like Wallasey will ultimately be able to avail itself of this powerful aid to cleanse its sewers, and so improve its general health.

**Hospital Accommodation** is provided at Mill Lane, and was of the greatest service during 1893, especially for cases of typhoid fever and scarlatina. Sixty-two patients were admitted. Particulars are given below :—



	Small-pox.	Diphtheria.	Scarlatina.	Typhoid.
Poulton-cum-Seacombe	1	1 (with 1 death)	4 (with 1 death)	12 (with 4 deaths)
Egremont	0	1	3	1
Liscard proper	0	1	8	12 (with 5 deaths)
New Brighton	0	0	6	10 (with 2 deaths)
Wallasey	0	1	0	1
Totals	1	4 (with 1 death)	21 (with 1 death)	36 (with 11 deaths)

There were thus 13 deaths in all, and of these 11 were typhoid fever cases. The majority of the fatal cases were very severe, and some were almost hopeless when admitted. Many of the typhoid fever patients come from a class badly nourished and living amidst unwholesome conditions, and so are illfitted to withstand an attack of fever.

The medical practitioner sending in a patient continues to attend him in hospital, except in the case of pauper patients.

It is difficult to estimate the benefits conferred by the Hospital on the district generally, for the isolation and di-infection so effectually carried out there probably save the locality from an extensive spread of infectious diseases. The importance of thorough disinfection in cases of typhoid fever has been already referred to. In the hospital this can be carried out, while in the homes of the poor it is often impossible.

The Hospital was repeatedly unable to receive all the patients desiring admission, but the new pavilion, to provide twelve additional beds, will soon be ready for occupation. It is hoped that this will make the Hospital equal to all ordinary demands. A convalescent ward is attached to both the male and female ward. The erection of the pavilion and its fitting up are supervised by the Surveyor and his building inspector. All the arrangements are of the best and most modern kind.

In consequence of the marriage of the late matron, Miss Malcolm was appointed in her stead. The work falling on the Matron and the two permanent nurses was at times very heavy, and when required additional nursing help was got.

With the opening of the new pavilion the permanent staff of nurses will probably have to be increased.

**Emptying Ashpits, &c.**—There has been some difficulty in securing an efficient and speedy collection of night-soil and ashpit refuse, in spite of the division of the whole district into sections. During the past year an Inspector was appointed whose sole duty is to attend to this department. The object aimed at is to have all ashpits, &c., emptied in each section every six weeks. The contract has been divided, for the coming year, between two firms, and it is hoped the work will go on smoothly, and that a systematic removal will be accomplished.



It is also expected that the erection of the new Refuse Destructor will soon be commenced, and no one aware of the growing difficulty of finding tips for the night-soil, will question the advantage to be derived from it, in spite of the increased cost thereby entailed. There have been frequent complaints about the nuisance arising from some of the tips, more particularly from one in Seacombe, and the present system could not go on much longer in any case.

**Vaccination Returns.**—These refer to 1,116 births registered during the year ending June 30th, 1893. The particulars are supplied by Mr. Stewart, vaccination officer :

Successfully vaccinated	...	...	...	962
Insusceptible	...	...	...	5
Died before vaccination age...	...	...	...	98
Postponed	...	...	...	19
Removed and traced	..	...	...	10
Not found	...	...	...	21
In default	...	...	...	1
				—
Births registered	...	..	...	1,116

Thus only 2 per cent. of the infants born are not accounted for. The Medical Officer of Health does not doubt that results such as these, shown year after year, mainly account for the fact that there has been no general outbreak of small-pox in the district for a period of 17 years.

**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 1893, was 33·23 gallons, divided as follows :—

	Gallons.
Watering streets and road-making	... 0·39
Supplied by meters	... 3·43
Supplied to shipping	... 0·18
Flushing sewers	... 0·87
Domestic and other purposes, including drinking-fountains, urinals, and gardens by assessment	28·36

The quantity of water used for flushing sewers and drains, during 1893, was 12,689,381 gallons.

The well at Sea View Road has for a portion of the year been supplying water at the rate of 120,000 gallons daily, a temporary engine being utilised for this work, but it is hoped the permanent engine will be at work by the close of the present year, and this will relieve the excessive demands on the Poulton wells. The water from the new supply, while equally pure, promises to be of a softer character.



Appended to the Medical Officers' Report is the Sanitary Inspector's Report, in which the following matters are dealt with :—

**Nuisance Abatement.**—The number of notices issued for the abatement of nuisances was 657. 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, dirty urinals, animals so kept as to be a nuisance, &c. There was only one smoke nuisance. Among the good work accomplished was the conversion of 135 privies into water-closets, the abolition of 4 cesspools, and the filling up of 3 old wells. The number of letters written, referring to nuisances and other matters, was 580.

**Complaint of Nuisances.**—There were 716 special complaints received. In 489 of these cases notices were served. In 66 cases what was complained of did not warrant the serving of notices. In 24 cases the nuisances were due to tenants' neglect, and they were required to abate the nuisances. In 107 cases the abatement was effected without formal notice. In 30 cases no nuisance existed.

There is an improvement with regard to the abatement of nuisances. In nearly every instance the terms of the notice are complied with without recourse to legal proceedings. In one case a summons was issued but withdrawn, as the owner immediately did the work and offered to pay the costs of the summons.

**Offensive Trades.**—Complaints have been made to the Board and also to the Local Government Board, of offensive smells proceeding from the immediate neighbourhood of the Phospho-Guano Works, and the Tallow-melting and Manure Works carried on at the old Potteries, Seacombe. The Inspector, after repeated visits to the works and neighbourhood, found that a large proportion of the effluvium was from the Phospho-Guano Works, which are directly under the supervision of the Alkali Works Inspector. At the old Potteries, great care appears to be taken to prevent any nuisance.

**Inspection.**—House-to-house inspection is carried on, as far as practicable, and many defects have thus been discovered and remedied. After cases of infectious disease are notified, the houses where the cases have occurred are visited and the drains



and sanitary fittings tested with the smoke apparatus, and any defects discovered noted and dealt with. The drains are flushed and disinfected.

**Disinfection.**—All infected houses or rooms have been thoroughly disinfected with sulphur fumes, and the steam disinfecter has been 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 1449 articles of clothing and 313 beds or mattresses were dealt with.

**Slaughter-houses.**—The private slaughter-houses within the district have been inspected at frequent intervals, and have been found in order, the Board's Bye-laws as to lime-washing and the removal of all offensive matter, being carried out.

There was a summons taken out against a butcher for slaughtering in his shop at Seacombe (unlicensed premises). He pleaded that he was a stranger to the district and acted in ignorance of the Board's Bye laws, and was ordered to pay £1.

The Lairages at the Wallasey and Alfred Docks have been visited upon all occasions when slaughtering was going on, and the Foreign Animals Wharf has been visited during the landing of all foreign cattle.

**Unsound Meat, &c.**—During the year 4108 lbs. of meat (beef, mutton and pork) and 5610 lbs. of offal have been seized and destroyed as unfit for human food. The greater part of this was seized at the Wallasey Lairages. A small proportion was from shops situated in the district. The seizures were made without recourse to legal proceedings, and the meat and offal seized were destroyed free of charge.

**Dairies, Cowsheds, and Milk-shops.**—There are in the district 27 cow-keepers and 30 purveyors of milk, duly registered. During the year a thorough and systematic inspection was made of all dairies and cowsheds, and a complete list of cow-keepers, showing the number of cows kept, the amount of air-space allowed per cow, and the condition, ventilation, lighting, drainage and water-supply of the premises occupied, was submitted to the Health Committee. A sub-committee was formed, and it was ultimately resolved to amend the Bye-laws made, and, if possible, to introduce a retrospective clause. The general condition of the cowsheds, &c., compared very favourably with those the Inspector has seen in other districts. The list giving full details is printed with the Inspector's Report.

The milkshops have been frequently visited, and the cleansing of walls, ceilings, and vessels have been properly carried out.



Strict examinations have been made as to the suitability of the storing accommodation, when applications have been made by persons desirous of being registered as purveyors of milk. In some cases it was found applicants intended to keep their milk vessels and surplus milk in sculleries, or in sheds close to ashpits. Front parlours were often proposed as milk stores without any provision being made for cleansing vessels, &c.

**Canal Boats.**—On December 2nd 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 44 canal-boats were inspected. The condition of 6 boats was found to be in contravention of the Canal Boats Acts and regulations. In 5 cases the master failed to produce the certificate, in two cases a boat was not lettered, marked and numbered, one boat was not registered, one was without a suitable cask for drinking water. Notice was served on owners regarding infringements of the Acts or regulations, and eventually the owners did what was required.

On January 11th, information was received that the master of a canal-boat was suffering from small-pox. Immediate enquiry was made and it was found that the man had gone home to Runcorn. The boat was at once thoroughly disinfected, the bedding, &c., being dealt with at the disinfecting station. The Inspector at Runcorn was communicated with, and replied that the case was a mild one and under supervision.

## WILMSLOW.

### Urban Sanitary District.

Medical Officer of Health—DR. T. A. SOMERVILLE.

Population at Census 1891—6344.

Estimated population in middle of 1893—6344.

Area in Acres—5103.

Birth-rate per 1000 living—29·0.

Death-rate per 1000 living—14·0.

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

Deaths under one year to 1000 births—114.

This Urban Sanitary 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... ..		2860
Part of Pownall Fee ... ..	2015	2254



During 1893, the number of births registered in the district was 184, and the number of deaths registered in the district was 89. The death-rate is decidedly low. Of the children born 12 (a large proportion) were illegitimate.

The number of deaths in Fulshaw was 20, in Bollin Fee 43, and in Pownall Fee 26.

Twenty-one of the whole number of deaths were of children under one year, and 25 were of persons 60 years old and upwards.

Eleven deaths were ascribed to zymotic diseases, viz.: 1 to scarlatina, 1 to puerperal fever, 4 to measles and 5 to diarrhœa. There were also 4 deaths from phthisis, 13 from bronchitis or pneumonia, 7 from heart disease and 5 from injuries (forming the subjects of inquests).

**Infectious Diseases.**—Under the Infectious Disease Notification Act there were reported 13 cases of scarlatina, 4 cases of typhoid fever, 4 cases of erysipelas, one case of small-pox and one case of puerperal fever. Thus the whole number of notifications received was 23. In 1892 the number received was 147, of which 140 were cases of scarlatina.

**Scarlatina.**—Nine of the 13 cases of scarlatina occurred in January and February and were the later cases of the epidemic which prevailed in 1892. The other 4 cases were sporadic and occurred in different parts of the district. The disease did not spread.

**Typhoid Fever.**—The four cases of this disease also occurred in different parts of the district. The cases were traced and the spread of the malady checked.

**Measles** was epidemic during the year under review, but as this most infectious disease is not required to be notified, precautions to prevent its spread could not be taken.

**Influenza** has also been very prevalent during the year, though no deaths were ascribed to it.

**Water-supply.**—Many samples of water have been taken from different parts of the district and submitted to examination. Those taken from the village were found generally to be of good quality. Samples from the outlying districts were not found to be good. The Medical Officer of Health strongly recommends that Dean Row, Davenport Green and Norley be supplied with town's water.

**Systematic Inspection.**—During the year systematic inspection of the district has been made, and many suggestions for the improvement of the district have been carried out.



**Lodging-houses, Bake-houses and Slaughter-houses** have been visited and found in good condition. One lodging-house has been closed. A public slaughter-house is required.

**Drainage Schemes.**—The Southern drainage scheme continues to work satisfactorily. There is probability of the Northern scheme being soon commenced.

**Hospital Accommodation required.**—In the last Annual Report the Medical Officer of Health drew attention to the want of an Infectious Hospital in the district. He again presses on the attention of the Sanitary Authority this need. The case of small-pox which occurred in the district had to be removed to the Hospital at Manchester. The house from which the patient was taken was disinfected and the inmates re-vaccinated, and no other case occurred.

## WINSFORD.

### Urban Sanitary District.

Medical Officer of Health—Dr. J. M. Fox.

Population at Census, 1891—10,440.

Estimated population in middle of 1893—10,600.

Area in acres—5,780.

Birth rate per 1000 living—38·4.

Death-rate per 1000 living—17·3.

Death-rate from seven principal Zymotic diseases—2·1.

Deaths under one year to 1000 births—159.

In 1893, the number of births registered was 407, and the number of deaths registered was 184. The birth-rate was considerably above the mean birth-rate in the district, and the death-rate was about equal to the mean death-rate in the district.

The number of deaths from zymotic diseases was 24, viz. : 1 smallpox, 7 scarlatina, 1 diphtheria, 3 puerperal fever, 1 erysipelas and 11 diarrhoea.

**Notification of infectious disease.**—The number of notifications received was 277, viz. : 222 scarlatina, 32 erysipelas, 3 small-pox, 8 chicken-pox, 3 diphtheria, 3 typhoid fever and 3 puerperal fever. The Medical Officer of Health questions the usefulness of much of this notification, and protests strongly against erysipelas having been included in the list of diseases made subject to compulsory notification. As regards scarlatina or scarlet fever he is of opinion that appearances in the skin that would have been laughed at formerly, as unworthy of



notice, have been, in the interests of the Local Board, notified as genuine scarlet fever.

**Small pox.**—In the early part of the year was a very limited outbreak of small-pox. Three cases only were reported, 2 in February and 1 in April. Two were treated in a van, being under the care of Dr. Okell. The third was isolated and treated in a temporary hospital built of wood. The last case ended fatally.

**Hospital Accommodation.**—The little temporary hospital just referred to was erected in the spring by the Board's Surveyor, Mr. W. R. Shorrocks. It is situated in Rilshaw Lane. To the left of the entrance is a ward for two beds, and to the right a kitchen and nurse's bedroom. The Board have already decided to extend this hospital in 1894. According to the new plan there will be provided two wards furnished with 2 beds each, nurse's bedroom, kitchen, scullery, bathroom and w.c.

**Systematic Inspection.**—Though much of the time of the Inspector has been taken up following the tracks of notification, there appears to have been no neglect in the work of systematic inspection, nuisance removal, excrement disposal, remedying defects of drainage, abating overcrowding, or the inspection of dairies, lodging-houses and slaughter-houses.

## YEARDSLEY-CUM-WHALEY.

### Urban Sanitary District.

Medical Officer of Health—DR. H. ALLAN.

Population at Census, 1891—1235.

Estimated population in middle of 1893—1235.

Area in acres—1323.

Birth-rate per 1000 living—26·7.

Death-rate per 1000 living—12·9.

Death-rate from seven principal Zymotic diseases—0·8.

Deaths under one year to 1000 births—30.

In this Urban Sanitary District, which includes Bridge Mont and Stoneheads, the births registered numbered 33, and the deaths registered (excluding 2 occurring in the district but not belonging thereto) numbered 16. The birth-rate is low, the death-rate very low. There was only one death of an infant under one year old, and there were 6 deaths of persons of 65 years and upwards. Of the 16 deaths one was due to diphtheria, one to heart disease, 2 were due to phthisis, and 4 to pneumonia.



**Diphtheria.**—The only death from zymotic diseases was the death from diphtheria, but owing to the Infectious Diseases Notification Act not having been adopted, no notice was received of this case till a month or more after its occurrence. Five other cases of diphtheria came to the knowledge of the Medical Officer of Health during the year, of which 4 were in the same house. The first of these was evidently imported from Manchester. Every precaution, as far as isolation, and the use of disinfectants, was taken to prevent the spreading of the disease.

**Influenza.**—During November and December influenza was again epidemic in the district, but the disease seemed of a milder type than in former years.

**Water-supply.**—In his last Annual Report the Medical Officer of Health drew attention to the defective water-supply. In particular the supply for Whaley Bridge is insufficient and some of it of poor quality. At a meeting of the Local Board in July, this subject came under discussion, and it was stated that the Local Government Board would not sanction a rate sufficient to cover the outlay required. This is the more to be regretted as there is an excellent supply of pure water available at Taxal.

**Sewers and Drains.**—Improvements have been made in the drainage at Whaley-Bridge. The drainage from what is known as the old Toll House and main road, which formerly passed under house property has been diverted and made to flow in a different direction. The drainage of the houses forming one side of Johnson Street was found to be in a very defective condition, in fact, no proper drain existed. To remedy this a drain of good (6 inch) socket pipes was laid, and gully traps fixed, on which to disconnect the sink waste-pipes. Improvements have also been made in the drainage of some houses in Bridge Street. At Bridge Mont a block of buildings was found to be practically without any sanitary drainage whatever. A drain of good (6 inch) socket pipes has now been laid, and the sink waste pipes are disconnected on gully-traps. The drainage of Rock Terrace, Furness Vale, has been entirely re-constructed and is now in good condition. Improvements have also been carried out in the sanitary arrangements of Hadfield Fold and Bothams Hall.

No steps have been taken to deal with the sewage of the district. It would be greatly to the advantage of the public if the district were properly drained and sewered.

**Nuisances** arising from various causes, such as ashpits and middens requiring emptying, the keeping of swine too near dwelling-houses, etc., have been brought under the notice of the Authority from time to time, and in every instance steps have been taken for their abatement.



**ALTRINCHAM.****Rural Sanitary District.**

Medical Officer of Health—Dr. J. M. Fox.

Population at Census, 1891—29,245.

Estimated population in middle of 1893—30,500.

Area in acres—62,307.

Birth-rate per 1000 living—24·4.

Death rate per 1000 living—17·3.

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

Deaths under one year to 1000 births—199.

In 1893, the number of births registered in this district was 746, and the number of death registered in this district was 528. The number of births is exactly the same as the number registered in 1892. The birth-rate is below the mean birth-rate in the district, and the death-rate is above the mean death-rate of the district.

The whole district for registration purposes has been divided into four sub-districts. These are as follows :—

1. Altrincham, having an area of 14,765 acres, and an estimated population of 13,755. It includes Ashton-on-Mersey, Baguley, Timperley, Hale, Ashley and Dunham Massey.
2. Lymm, having an area of 14,497 acres, and an estimated population of 3,462. It includes Carrington, Partington, Bollington, Warburton, High Leigh, Agden, Mollington and Aston-by-Budworth.
3. Knutsford, having an area of 22,570 acres, and an estimated population of 8,533. 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 10,475 acres, and an estimated population of 4,750. It includes Styal, Mobberley, Northenden and Northern Etchells.

The birth-rates of these 4 sub districts were respectively 23·5, 24·5, 24·7, and 26·5. The death-rates of these 4 sub-districts were respectively 15·7, 13·5, 20·7, and 18·3.

The number of deaths from zymotic diseases in the whole Rural District was 48, viz. : 2 small-pox, 6 scarlatina, 6 diphtheria, 6 typhoid fever, 1 continued fever, 1 puerperal fever, 3 erysipelas, 4 measles, 1 whooping-cough, and 18 diarrhoea. The zymotic death-rate is fairly low.

**Notification of Infectious Disease.**—The number of notifications received was 242, viz. : 193 scarlatina, 18 diph-



theria, 14 typhoid fever, 1 puerperal fever, 14 erysipelas, and 2 chicken-pox. Each case was visited, disinfectants were supplied, and printed instructions were distributed widely.

**Small-pox.**—The history of the 2 fatal cases of small-pox just referred to is as follows. The first was reported from the Workhouse at Knutsford in March. The patient was an imbecile pauper who had not been out of the house for three years. The eruption in this case was confluent. On investigation one of the pauper attendants was found to be suffering from a very modified type of small-pox. The second victim of small-pox was a young child (unvaccinated) in a detached house at Northenden. On visiting the house it was found that all the inmates of the house (3 besides the child) were suffering from the same disease. This was in June. The house was well watched, and on the recovery of the last patient, the infected bedding was burned and the premises thoroughly fumigated. The doctor in attendance had mistaken the disease for chicken-pox. The Medical Officer of Health accordingly recommended that chicken-pox should be added to the list of notifiable diseases for a period of three months, and this was done.

**Scarlatina.**—This disease was prevalent in and about Knutsford during January and February. No fatal case occurred there then. The schools in the town were voluntarily closed for a fortnight. In June there was an importation of scarlatina into Mobberley by Manchester children coming for a holiday. In November three cases of scarlatina were removed from Ashton-on-Mersey into Monsall Hospital.

**Diphtheria.**—Four out of the 6 fatal cases of this disease occurred at Mobberley. One of the patients, a youth of 19, had been engaged in carting very offensive manure from Manchester, the smell of which he complained of very much.

**Typhoid Fever.**—The fatal cases of this disease occurred at Ashton-on-Mersey, Baguley, Hale, Peover, Northenden and in the Knutsford Workhouse. The abominable state of the river was blamed for the fatal case at Northenden.

**Hospital accommodation.**—There is at present no hospital for infectious diseases; but the Authority has a large marquee which will serve the purposes of a hospital in the warm weather. During the year a child (4 years old) was treated in the cottage in which it took ill, the cottage for the time being converted into a temporary hospital.

The Medical Officer of Health distinctly represents to the Authority that an Infectious Hospital should be provided for Knutsford, and for the combined Townships of Timperley, Hale, Dunham Massey and Ashton-on-Mersey.



**Phthisis.**—With reference to this disease, which has lately, with great local activity, been advertised as an infectious one, the Medical Officer of Health states that he, and a thousand others, have long believed it to be so. He quotes the following remarks made by him to one of his Sanitary Authorities in 1879.

“I have always thought it my duty to advert especially to any undue mortality from Consumption on two accounts. First, because Consumption has a distinct tendency to enlarge the area of pauperism. Again, from the circumstance that it is a disease finding its prey exclusively in adults; lingering and disabling in its nature, and, to ordinary persons, incurable. Without denying the determining and sometimes fatal influence of hereditary tendency, yet it is no less an insured conviction in my mind from vast numbers of observations, now not recent, that the continuous breathing of a damp, sodden, and devitalised air has much to do with the promotion and development, if not distinct origin, of this disease.

In this scourge we have throughout the country the outcome of what? Overcrowding, dampness of houses, insufficient ventilation of bedrooms and workshops, &c.

Well, all these particular matters form the routine of every day's work; are we to go in for new legislation when there is so much undone in the old?”

He has nothing to add to the statement of the foregoing Report but an increase of emphasis drawn from all his intervening experience.

**Cholera Precautions.**—In the month of August a Report was issued by the Authority dealing with all essential precautionary measures with respect to Asiatic Cholera.

**Water-supply.**—Seventeen samples of water have been sent for analysis. Three were condemned as unfit for use and new supplies have been obtained. Three were from new wells, all of which were passed, two being highly commended. The public water supply for Knutsford has been very carefully kept under notice. It is feared that its career is precarious.

**Systematic Inspection.**—During the year 454 inspections have been made of nuisances of various kinds, and 230 complaints have been received and personally investigated.

**Account of the Sanitary State of District.**—The district generally is a rural one, and very attractive for private residences. The Medical Officer of Health inclines to say that the principal difficulties will be found to exist in conjunction with manure traffic along canal banks, and the deposit, at times on the land, of manure from the large towns of a very offensive description. Such places may be in the Townships of Timperley and Dunham Massey.



In a prolonged endeavour to preserve the sanitary interests of Carrington, proceedings were taken against the Manchester Corporation, who desired to acquire 95 acres of additional land for deposit upon it of their refuse and nightsoil. The proceedings took place on the 7th February and following days. The Altrincham Rural Authority were entirely successful; and the Corporation of Manchester gave an undertaking under the Corporation seal not to deposit any solid refuse of any description on any part of the land in question.

As regards the holding of cattle sales in the public streets at Knutsford, the Medical Officer of Health is of opinion that public health or convenience will not be interfered with at any time by a usage of this kind.

**Overcrowding.**—Seven cases of overcrowding have been investigated, and successfully dealt with.

**Scavenging.**—Four contractors continue to scavenge efficiently and remove all nightsoil and house-refuse within the Townships of Ashton-on-Mersey, Hale, Dunham Massey and Knutsford. It is pointed out that Timperley also might be given the advantage of regular scavenging.

**Self-flushing Closets.**—The Medical Officer of Health directs the attention of builders to Fowler's Automatic Self-flushing closets. Many have been put up in the district, and they have always acted with perfect success.

**Sewage Farms** have given no cause for adverse criticism during the year.

**Dairies and Cowsheds** are constantly under review, in conjunction with other inspections.

**Slaughter-houses.**—The existing slaughter-houses are regularly inspected, and no cause of complaint has been found. Two applications for licenses have been refused.

**Common Lodging-houses.**—These houses, as being all of unsuitable character, are the objects of most vigilant supervision. One license has been revoked.

**Canal Boats.**—In this department there have been 137 inspections, and that is such a fact as makes comment unnecessary.

**New Buildings.**—Plans for the erection of 147 new houses have been reported and approved by the Authority.

**The Housing of the Working Classes Act, 1890.**—An attempt has been sustained during the course of the year to close certain houses, commonly known as Cotton Shop Yard, in King Street, Knutsford, as unfit for human habitation, and incapable of being made so.



## ASHTON-UNDER-LYNE.

Part of Rural Sanitary District in Cheshire.

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

Population at Census, 1891—2576.

Estimated population in middle of 1893—2630.

Area in acres—13615.

Birth-rate per 1000 living—29·2.

Death-rate per 1000 living—24·7.

Death-rate from seven principal Zymotic diseases—5·7.

Deaths under one year to 1000 births—155.

The Cheshire portion of the Rural Sanitary District of Ashton-under-Lyne 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 follows:—

			Area in Acres.	Population at Census.
Part of Tintwistle	...	...	11850	2116
Hattersley	...	...	1060	286
Matley	...	...	705	174

The area exclusive of moorland is returned as 4646 acres.

In 1893, the number of births registered was 77, and the number of deaths registered was 65.

Zymotic diseases caused 15 deaths, viz.: 1 diphtheria, 11 measles and 3 diarrhoea.

The death-rate is high and the zymotic death-rate very high.

The increase in the death-rate is due to the mortality from an epidemic of measles in March and April, and to the large number of deaths (18) from bronchitis and pneumonia, principally in the first quarter of the year.

**Notification of Infectious Disease.**—The number of cases notified to the Authority under the Infectious Disease (Notification) Act was 11, viz.: 7 scarlatina, 1 diphtheria, 2 typhoid fever and 1 erysipelas. Measles is not included in the diseases required to be notified.

**Scarlatina.**—The first case of this disease made its appearance in Manchester Road. The patient infected other children attending the same school, and in all 7 cases occurred. Four were in Manchester Road, one case was in Old Road, one in Arnfield and one in New Road. The malady was of a mild character.

**Measles** appeared concurrently with scarlatina, and soon became epidemic in the district. It was indeed part of a wide-spread epidemic covering a large area and including most



of the adjoining townships. A special report on the outbreak was made at the time. With the Authority's sanction schools in Tintwistle were closed for several weeks, which undoubtedly shortened the epidemic locally.

**Diphtheria.**—The only case of diphtheria reported occurred at Manchester Road, and proved fatal. The house was examined but no defects were found.

**Typhoid Fever.**—The 2 cases of this disease notified occurred on January 2nd and 3rd in Manchester Road and Chapel Brow. In the first case, the patient contracted the disease while nursing a relative affected with typhoid fever at Broad-bottom. The case in Chapel Brow was in close proximity to some privies where typhoid excreta had been emptied from two cases reported in the autumn of 1893, and presumably contracted from that source, as there were no sanitary defects on the premises, or any other cause to account for its origin.

**Erysipelas.**—The only case notified of this disease occurred at Conduit Street. There were no defects or insanitary conditions noticed on the premises.

**Influenza** was very prevalent during the latter months of the year. Generally the symptoms were of a mild type, but the number of throats attacked was greater than in former visitations of the disease.

**Action taken to Prevent Spread of Infection.**—In all cases after notice of infectious disease has been received the premises are visited by the Medical Officer of Health and Inspector to ascertain the origin of the disease if possible. The drains and sanitary arrangements are examined, and when defects are discovered the owners are served with notices to remedy what is wrong. The Authority having no Isolation Hospital, the patients are isolated as far as practicable at home, disinfectants are supplied, and the premises, clothing, &c., are disinfected. Healthy children residing in an infected house are prohibited from attending school or playing with other children until all possibility of their being able to infect others is past.

**Water-Supply.**—The water has been good, but owing to the exceptionally dry weather in the spring and summer it was found necessary to limit the supply.

**Middens, Cesspools, &c.**—In reply to a letter from the Authority with reference to the locality of the numerous cesspools connected with the middens in the district, to which attention was drawn in the last Annual Report, the Medical Officer of Health sent in a special Report on September 8th. This was followed by many necessary alterations and sanitary improvements, and those at present completed are highly



satisfactory. By the removal of the cesspools and the re-construction and roofing of the closet-middens in the localities mentioned in the special Report, an important step in the sanitation of this portion of the district will be effected.

**Inspection.**—Frequent inspections of the district are made, and include the bakehouses, cowsheds and slaughter-houses therein. Any insanitary conditions discovered are duly reported.

There are no common lodging-houses or milkshops, and no offensive trades are carried on in the district.

**Nuisance Abatement.**—During the year a number of sink-stone waste-pipes have been disconnected and made to deliver on gully-traps, many cesspools near dwellings have been done away with, many blocked drains and foul water-courses have been cleansed, and many other nuisances of various kinds have been abated. The Inspector has also supervised the periodical removal of excreta and house-refuse.

## BIRKENHEAD.

### Rural Sanitary District.

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

Population at Census, 1891—456.

Estimated population in middle of 1893—472.

Area in acres—2043.

Birth-rate per 1000 living—4·2.

Death-rate per 1000 living—10·6.

Death-rate from seven principle Zymotic Diseases—0.

Deaths under one year to 1000 births—0.

This Rural Sanitary District consists of the townships of Bidston with Ford and Noctorum. The area and population are given as follows:—

	Area in Acres.	Population. at Census.
Bidston with Ford ... ..	1713	254
Noctorum ... ..	330	202

In 1893, the births registered in the district numbered 2, and the deaths (including one death occurring outside the district but belonging thereto) numbered 5. The ages of those who died were respectively 30, 37, 42, 52 and 71. The causes of death were bronchitis, pneumonia, paralysis, apoplexy and congestion of the brain.

Under the Infectious Disease Notification Act, 2 cases of typhoid fever were reported. Both occurred in the same family



at Noctorum, in December. The premises were found in good sanitary condition, the patients recovered and no fresh cases occurred.

In July the Medical Officer of Health made a general inspection of the district, accompanied by the Inspector, and found the locality in as satisfactory a sanitary condition as possible under the circumstances—the district being only partially sewered. The Inspector is thoroughly acquainted with the district and very diligent in the discharge of his duties.

The 27 milk farms and numerous dairies, for the supply of the large adjacent population in Birkenhead, are inspected monthly.

Seven houses (of considerable size) have been built during the year.

The arrangements for drainage and sewage disposal work sufficiently well on the whole, being of a simple character adapted to the scattered habitations and the absorbent nature of the ground. Of course the arrangements require supervision.

The district is well supplied with water from the Birkenhead Water Works.

There is no Infectious Hospital to which the inhabitants of the district have the rights of admission. The district is too small to have a hospital of its own.

Overcrowding is infrequent.

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## CHESTER.

### Rural Sanitary District.

Medical Officer of Health—Dr. G. A. Kenyon.

Population at Census, 1891—10,080.

Estimated population in middle of 1893—8943.

Area in acres—35,377.

Birth-rate per 1,000 living—25·4.

Death-rate per 1,000 living—15·8.

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

Deaths under one year to 1,000 births—100.

This Rural Sanitary District has for registration purposes been divided in two sub-districts, as follows :—

1. Chester Castle, having an area of 10,960 acres and a population of 3486. 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 24,417 acres and a population of 5,457. 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, Inch, 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, Inch, Stanlow, and Great Stanney, who at the time of the Census and for a considerable part of 1892 were engaged on the Manchester Ship Canal.

In 1893, the births registered in the district numbered 223, and the deaths (including 13 deaths occurring outside the district, but belonging thereto, and excluding 76 deaths in the County Lunatic Asylum and 6 deaths in the Tarvin Union Workhouse) numbered 142. Both birth-rate and death-rate are low, and the proportion of deaths among infants is small.

There was one death from membranous croup as well as one from erysipelas, and there were two deaths from scarlatina, two from measles, two from whooping-cough, two from puerperal fever, 7 from diarrhoea, 11 from phthisis, 23 from bronchitis or pneumonia, 13 from heart disease and 8 from injuries. Under the Infectious Disease Notification Act there were reported 27 cases of scarlatina, 2 of diphtheria and 6 of fever (5 typhoid and 1 puerperal). Six scarlatina cases and one typhoid fever case were removed to hospital and a case of erysipelas was also sent to hospital. There were also reported 6 typhoid fever cases from the Lunatic Asylum, of which three were removed to hospital.

The cases of scarlatina occurred throughout the year except during March and April. They were most numerous during September. They were not confined to any locality. The houses where the cases occurred were visited, disinfectants were supplied, and measures taken for the removal of insanitary conditions. Such isolation as was practicable was obtained. The cases of typhoid fever occurred at places and times widely separated. One was associated with defective sanitary arrangements which were subsequently remedied. The cases in the Asylum represent a small outbreak which occurred between the middle of May and the middle of June. It was almost confined to



staff and their families, and was promptly and effectually dealt with by the Asylum Authorities. The Asylum water-supply is from a deep well, and is of great purity.

The Medical Officer of Health has made a number of inspections in different parts of the district, investigated outbreaks of infectious disease and advised thereon.

At Elton 130 yards of pipes have been laid in extension of the existing sewers.

Considerable difficulty has been experienced with the sewer at Newton in consequence of its requiring to be re-laid where passing through ground belonging to the Joint Railway Company, who have made difficulties about access. It is hoped that the work will be able to be proceeded with shortly. Meanwhile the sewage flows over land where it occasions a nuisance.

The drainage of Christleton has been and is still under consideration. The difficulty is to find a suitable outfall within a convenient distance.

Steps are being taken to deal with the sewage outfall at Eccleston and Eaton, and also to improve the sanitary condition of the ferry just outside the district.

Plans have been prepared for the sewerage of Boughton Heath, and application has been made to the Chester Corporation to drain into the City sewers. Failing this, it will be almost impossible to get a satisfactory outfall.

The Local Government Board Model Bye-Laws with respect to new buildings have been adopted, and are in force throughout the district. Mr. Cecil Davies has been appointed as Surveyor, to examine plans and see that the bye-laws are carried out.

The removal of nuisances (including the prevention of overcrowding) is attended to by the able and energetic Inspector. As Inspector of Canal Boats, he has examined 108 boats. In one case he took proceedings, for an infringement of the Act as regards the number of occupants, and a fine was inflicted.

Thirty-three premises are registered for the sale of milk, and are regularly inspected.

Little difficulty has been found as regards the emptying of privies and ash-pits, owing to the rural character of the district. A neighbouring farmer is generally found ready to do the work.

In parts of Newton and Boughton Heath, being now much built upon, different arrangements will soon be called for, as nuisances are frequently occasioned by persons who undertake the emptying, without convenience for using the refuse, and simply deposit it on the first bit of vacant ground at hand.

As stated in the last Annual Report, several parts of the district are supplied with water from the Chester Water Works and Wrexham Water Works, and other parts have good well-



water. Elsewhere the water is unsuitable or deficient in quantity. At Great Saughall a want of water has been experienced among the poorer classes, and some attempt has been made to get water introduced from a distance, but the expense is a serious obstacle.

During the year two samples of water were submitted to the Medical Officer of Health for analysis. One sample proved of good quality, the other was much contaminated.

## CONGLETON.

### Rural Sanitary District.

Medical Officer of Health—DR. J. M. FOX.

Population at Census, 1891—14,417.

Estimated population in middle of 1893—14,800.

Area in acres—42,396.

Birth-rate per 1000 living—29·0.

Death-rate per 1000 living—14·9.

Death-rate from seven principal Zymotic diseases—1·2.

Deaths under one year to 1000 births—107.

The number of births registered in this district in 1893 was 429, and the number of deaths was 221. The birth-rate is about equal to the mean birth-rate in the district. The death-rate is lower than the mean death-rate in 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 14,912 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 19,598 acres, and an estimated population of 10,669. It includes Smallwood, Odd Rode, Church Lawton, Alsager, Hassall, Betchton, Wheelock, Archid, Bradwall, Tetton, Moston, and Elton.

The birth-rates in these sub-districts are not returned separately. The death-rates in the three sub-districts are respectively 16·3, 13·2 and 14·1.

The number of zymotic diseases registered in the whole district was 19, viz. : 1 small-pox, 5 scarlatina, 6 diphtheria, 1 typhoid fever, 1 erysipelas, 1 measles, and 4 diarrhoea. The zymotic death-rate was low.



**Notification of Infectious Disease.**—The number of cases of infectious disease notified was 284, viz.: 3 small-pox, 241 scarlatina, 14 diphtheria, 11 typhoid fever, 4 continued fever, 1 puerperal fever, and 10 erysipelas.

The Medical Officer of Health states that the adoption of the Infectious Disease Notification Act has effected a complete revolution locally in the method of sanitary procedure. He remarks on the small mortality from scarlatina in proportion to the number of notified cases. One effect of notification is to add largely to the duties imposed on the Inspector. In the opinion of the Medical Officer of Health the Act needs modifying in many respects. He is, however, strongly opposed to the inclusion of consumption among the list of diseases made subject to compulsory notification.

**Small-pox** was imported into the district by a tramp. He was admitted into the Workhouse on February 2nd, and died of confluent small-pox on the following day. Due precautions were taken, and no other case arose from this either in the Workhouse or neighbourhood. Later in the year a vagrant again brought small-pox into the district, and a nurse took the disease. As by this time the little Isolation Hospital at Arclid was ready, it was made use of. Both these patients recovered. The Hospital was jointly provided by the Congleton Rural and Sandbach Urban Authorities, and has already (within a few months of its being opened) been of service to both Districts.

**Hospital Accommodation.**—The Hospital just referred to was a disused building converted into a temporary hospital. It was ready for use and the first patient was admitted (from Sandbach Urban District) on February 27th. It provides 10 beds. There is no accommodation apart from this Hospital for cases of infectious disease other than small-pox, but in the absence of small-pox the Hospital might be used for other diseases.

The Medical Officer of Health discusses "whether all the fuss that is made about the isolation of small-pox cases is conformable to modern experience." He points out that the community is not in the perilous position of fifty years ago; the result of carrying out the Vaccination Acts has so modified small pox and its fatality and the likelihood of its spread.

**Inspector's Report.**—The Inspector reports for 1893, that the number of cases of zymotic disease visited and furnished with disinfectants was 358. The number of persons seen with regard to the abatement of nuisances was 218. The number of houses and schools fumigated was 18. The whole number of visits made in the district (29 Townships) was 2,280. The number of letters received and answered was 668. The



number of nuisances abated was 133. The canal boats inspected numbered 17. There were 46 systematic inspections of dairies and cowsheds, 8 systematic inspections of lodging-houses. Fifty plans of new buildings were passed, 10 samples of water were sent for analysis, 15 water certificates were given under the Public Health (Water) Act, 1878. Only one case of overcrowding was reported, and only one summons was taken out for failure to comply with terms of notice sent.

The water supply at Alsager, and the public wells at Lawton, Kent Green, Mow Cop, Mount Pleasant, and Holmes Chapel are in charge of the Inspector.

**Scavenging.**—The Inspector superintends the scavenging at Alsager, Mow Cop, Mount Pleasant, Holmes Chapel, The Bank, Kent Green, Scholar Green, Hall Green, Lawton, Rode Heath, Thurlwood, and Booth Lane.

**Sewage-works.**—The Inspector also attends to the flushing, ventilation, and management of the sewers and irrigation grounds of Alsager, Holmes Chapel, Mow Cop, and Mount Pleasant.

## 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 1893—37.

Area in acres—581.

Birth-rate per 1000 living—81·8.

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 Sanitary 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.

The births registered during the year numbered 3 (males) and there were no deaths. No nuisances were reported.

The Medical Officer of Health suggests that the Infectious Disease Notification Act would be much improved if all medical practitioners notifying cases of infectious disease were required not only to certify their opinion of the cases, but also to give a declaration that they had promptly given all apparently needful instructions to prevent the spread of the disease.

Tittenley is fairly well supplied with water.



## HAYFIELD.

## Part of Rural Sanitary District in Cheshire.

Medical Officer of Health—DR. C. J. BENNET.

Population at Census, 1891—2260.

Estimated population in middle of 1893—2260.

Area in acres—2464.

Birth-rate per 1000 living—25·2.

Death-rate per 1000 living—15·0.

Death-rate from seven principal Zymotic diseases—0.

Deaths under one year to 1000 births—157.

The large Rural Sanitary District of Hayfield, 12746 acres in area, is formed of the Townships of Hayfield and Mellor in Derbyshire, and the Cheshire portion of the Township of Disley. The entire Township of Disley has an area of 2591 acres, and of this all but 127 acres is situated in Cheshire.

The number of births registered in 1893 in the Cheshire portion of Disley was 57. The number of deaths registered in 1893 in the Cheshire portion of Disley was 34. The birth-rate and death-rate were both low. Nine of the deaths were of infants under one year, and 8 were of persons 65 years and upwards.

There were no deaths ascribed to any of the seven chief zymotic diseases. Three were ascribed to croup, 8 to bronchitis or pneumonia, and one was ascribed to heart disease.

There were 8 notifications of infectious disease, viz.: 1 scarlatina, 1 continued fever, 3 diphtheria and 3 croup. The Medical Officer of Health investigated these when they occurred and reported thereon. How the scarlatina case became infected could not be traced. The patient suffering from continued fever came into the district with the disease on him. As regards the 3 cases of diphtheria, one patient was a boy attending Disley Schools. The disease in the other two cases appeared to be due to the general bad condition of the drains throughout the village. Two of the children who died from croup (at Drake Carr) had just returned from Prestbury, and must have caught the disease there.

**Water-supply.**—The water-supply of Disley held out fairly well considering the long drought. The Medical Officer of Health recommends that the water should be brought to the sink stone of every house in the village. It would add much to the comfort of the inhabitants. A very desirable improvement which was very much needed has been made in the water-supply of 19 houses at Furness Vale.

**Drains, Sewers, and Sewage disposal.**—Plans for a sewage scheme for Disley are being prepared. Hitherto the



outlet has been a stream of water running through the village. Considerable improvements in the drains have been effected for some years, but without a proper system of sewers and sewage disposal, the result cannot be satisfactory. Owing to the scheme being under consideration and likely to be carried out shortly, it has not been considered advisable to interfere with the present drains, except where absolutely necessary. The drains of 17 houses in Albert Terrace have been relaid with sanitary pipes and trapped, and are now satisfactory. The condition of several of the farmhouses is also being much improved.

**Pollution of a Stream.**—The drainage from Drake Carr and other houses in that neighbourhood is still polluting a stream of water which runs into a reservoir belonging to the Stockport District Waterworks Company. The amount of pollution is considerable and ought to be prevented as soon as practicable. It is several years since the Medical Officer of Health first drew the attention of the Board to this matter, but nothing has, up to the present, been done to remedy the evil.

The Inspector has done all in his power to prevent ashes and refuse being thrown into the river, and apparently has been successful.

**Slaughter-houses and Cow-houses.**—The slaughter-houses in the district are far from satisfactory—several are under dwelling-houses and the drainage is not properly disposed of. These conditions will necessarily be dealt with in the drainage scheme. The Medical Officer of Health strongly recommends the closing of the present slaughter-houses in Hayfield and Disley, and the erection of two public abattoirs in suitable positions, one in each place.

The regulation of cowsheds (construction, required ventilation air space &c.) has not come under the consideration of the Board during the year.

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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 1893—17498.

Area in Acres—80384.

Birth-rate per 1000 living—24·6.

Death-rate per 1000 living—18·5.

Death-rate from seven principal Zymotic diseases—4·6.

Deaths under one year to 1000 births—83.



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 3002. 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 2876. 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 2693. 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 5045. 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 2104. It includes Taxal, Kettleshulme, Rainow, and Macclesfield Forest.
- 6.—Sutton, having an area of 12954 acres, and an estimated population of 1778. It includes Wildboardclough, Wincle, and part of Sutton.

The birth-rates of these six sub-districts were respectively 24·6, 23·6, 24·5, 28·3, 22·3 and 19·0. The death-rates of these six sub-districts were respectively 19·9, 17·3, 18·5, 19·6, 19·0, and 14·6.

The number of births registered in the whole district was 432. The number of deaths registered in the whole district was 249, but to these deaths must be added 76 deaths of persons belonging to the Rural Sanitary District, who died in the Union Workhouse Infirmary or Lunatic Asylum in the Macclesfield Urban District. Thirty six of the 325 were infants under one year old, and 120 were persons 65 years old and upwards. The proportion of infants among those who died is small, and the proportion of old people is exceptionally large.

The number of cases of infectious disease notified was 128, viz. :—99 scarlatina, 10 diphtheria, 1 croup, 6 typhoid fever, 5 continued fever, 2 puerperal fever, and 5 erysipelas.

**Scarlatina** was prevalent to some extent throughout the year, cases being notified in every month but April. There were in all 4 deaths. In Alderley were 15 cases, in Bollington 12 (1 death), in Gawsworth 40 (1 death), in Prestbury 30 (2 deaths) and in Sutton 2. The sub-district of Rainow was free from the disease, as it was also in 1892.



**Diphtheria.**—Seven of the 10 cases of this disease were notified during the first five months of the year. There were in all 4 deaths. In Bollington were 3 cases (1 death), in Gaws-  
worth 2 cases (2 deaths), and in Prestbury 5 cases (1 death). The Sub-districts of Alderley, Rainow and Sutton were free from the disease; but a fatal case of croup occurred at Sutton.

**Typhoid Fever.**—The cases of this disease occurred in the autumn, (August, September, and October). In Bollington were 3 cases and in Sutton 2. The one fatal case was in Rainow.

**Continued Fever.**—The cases reported as continued fever were not limited to one part of the year. In Bollington were three cases. In Alderley was a fatal case, and in Sutton a fatal case.

**Puerperal Fever.**—The 2 cases of this disease were not in any way connected. One occurred in April in Rainow and the other in November in Alderley. They were both fatal.

**Erysipelas.**—Four of the five cases of this disease were notified in the last quarter of the year. One of the five cases was at Bollington, 1 at Gaws-  
worth, 1 at Rainow and two were at Alderley. The patients all recovered.

**Diarrhœa** caused 5 deaths, 3 being in Alderley, 1 in Bollington and 1 in Sutton. As the disease is not notified the number of cases is not known.

**Analysis of Water.**—Particulars are given of the analysis of 31 samples of water taken from various sources in several townships. Twelve were certified unfit for domestic use.

**Report of Surveyor and Inspector.**—This is appended to the Report of the Medical Officer of Health, and shows much useful work done. In all 2,743 houses were visited. The list of defects remedied is as follows:—

- 14 waste pipes disconnected from drains.
- 229 inlets to drains trapped.
- 87 new drains laid in houses undrained or ill-drained.
- 32 houses, without proper means of drainage disposal, connected with sewers.
- 21 defective w.c.'s replaced by efficient ones.
- 25 new privies built, and many others partly reconstructed.
- 9 damp houses improved by repairs or providing rain conductors, or draining the sites.



Many other nuisances arising from obstructed drains, the keeping of swine and other animals, and accumulations of house-refuse, &c., were abated. Forty-one formal notices were served.

Eight certificates to houses were granted under the Public Health (Water) Act, 1878, and 31 houses were provided with improved water-supplies.

Notices were served under the provisions of Part 2 of the Housing of the Working Classes Act, 1890, with respect to five dwelling-houses. Three of the houses have been vacated and are to come down. As regards the other two, structural alterations and repairs are in progress, which it is expected will do away with the grounds of objection to the use of the houses as dwellings. Three other houses, which were unfit for habitation, have been vacated without the service of notices, and will not be re-occupied.

Frequent visits were paid to the effluent outfalls from the sewage disposal works at Chorley and at Fulshaw, which discharge into streams in the Macclesfield Rural Sanitary District. On each occasion the effluents were found fairly satisfactory.

Under the Canal Boats Acts, 45 boats were inspected. The boats were registered for 130 adults, and carried 72 men, 21 women, and 22 children. Three boats did not carry certificates, nor were numbers and places of registration marked on them. Notices were served on the owners to amend these irregularities. In two instances a boat was found carrying a young child in excess of the number it was registered to carry. No legal proceedings were taken under the Acts.

Under the Dairies, Cowsheds, and Milkshops Order 12 persons were registered during the year. In the whole district there are 341 persons now registered. The premises occupied by each of these were inspected during the year. A fair amount of improvement has been effected in the lighting, ventilation, and drainage of cowsheds, but the rate of progress in this work is not satisfactory. The ventilation (including air space) of many cowsheds is considerably below what is authoritatively regarded as a minimum, but the cost of structural alterations and extensions are such as it would scarcely be reasonable to impose on a tenant, where he is not also the owner.

The slaughter-houses in the district were visited regularly, and generally found in a satisfactory state of cleanliness.

Early in the year proceedings were taken against a butcher for having possession of unsound meat intended for food of man. The man was sent to prison for two months without the option of a fine.

Plans for 11 new buildings were submitted and approved. The buildings, in course of erection, were frequently visited to insure the carrying out of the bye-laws.



## NANTWICH.

## Rural Sanitary District.

Medical Officer of Health -- Dr. J. M. Fox.

Population at Census, 1891 -- 22903.

Estimated population in middle of 1893 -- 23285.

Area in acres -- 98458.

Birth-rate per 1000 living - 28.4.

Death-rate per 1000 living -- 17.9

Death-rate from seven principal Zymotic diseases -- 2.0.

Deaths under one year to 1000 births -- 126.

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. In the Annual Report for 1892, both these areas were treated as still belonging to the Nantwich Rural Sanitary District. They have now been taken from it, and the area and population of the Nantwich Rural Sanitary district is therefore reduced as follows:—

	Area in Acres.	Population 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
	<hr/>	<hr/>
Nantwich R. S. D. ... ..	98458	22903

In 1893 the number of births registered in the whole district was 663, and the number of deaths registered in the whole district (including 31 which took place in the Workhouse in the Nantwich Urban District) was 418. The birth-rate is not low for a rural district, nor is the death-rate.

The whole district, for registration purposes, has been divided into four 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, Hunster-son, 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 3532. It includes Coole Pilate, Austerson, Baddington, Edleston, Burland, Faddiley, Brindley, Acton, Henhull, Hurleston, Poole, Stoke, Cholmondestone, Ashton-juxta-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, Dodcott-cum-Wilkesley, Sound, Audlem, Buerton, Hankelow, Baddiley, Newhall, Cholmondeley, Egerton, Bickerton, and Bulkeley.

The birth-rates of these four sub-districts were respectively 29·9, 28·1, 26·4 and 27·0. The death-rates of these four sub-districts were respectively 19·8, 20·4, 13·8 and 15·3.

The number of deaths from zymotic diseases in the whole district was 48, viz. : 11 scarlatina, 9 diphtheria, 3 typhoid fever, 2 measles, 11 whooping-cough and 12 diarrhœa. Of the deaths from zymotic diseases 36 were in the Crewe sub-district, 3 in the Nantwich sub-district, 1 in the Bunbury sub-district, and 8 in the Wrenbury sub-district.

#### **Infection carried in canal-boats and by tramps.—**

A case of small-pox which occurred in September, in a canal-boat, and which is referred to in the Report on the Nantwich Urban District, caused considerable anxiety. Though all the needs of the boat-inmates were provided for, some of the healthy ones were found wandering about on shore, contrary to instructions. A watcher had to be appointed, and the people did not again transgress. This illustrates the risk of infection being spread by canal-boats. Many illustrations have been afforded in Cheshire of infection being spread by tramps. The Medical Officer of Health suggests that increased attention should be paid to these "avenues of infection." He advises that the police should be instructed to take quite as strict notice of an able-bodied man going about without occupation as they would of a man going about with small-pox. As to guarding the canals the Medical Officer of Health protests against the unreasonableness of putting the duty of inspection of canal boats, with their teaming population, upon nuisance inspectors without increasing their numbers.



**Notification of Infectious Disease.**—The Infectious Disease Notification Act is not adopted in this district. The Medical Officer of Health believes that in districts which have adopted the Act the mortality from scarlatina is greater than in the Nantwich Rural District. He is not in favour of the proposal to add phthisis to the list of notifiable diseases. The Local Authority have been, for many years, consistently and continuously dealing with the causes and origin of consumption. He draws attention, in particular, to a clause in the local Building Bye-laws "which will ever in the future exclude dampness from the walls of dwellings," and do more for the prevention of consumption than any amount of notification of the disease.

**Water-supply.**—During the year 1893, the Authority have supplied 26,000,000 gallons of water. The water is being supplied in 32 Townships. The number of houses supplied is 2,817, representing a population of over 14,000 persons. This is a very great improvement on the supply in former years, when the domestic consumption of water in the district was but 3 gallons a head per day. The next scheme will be for the supply of the Townships of Bulkeley, Bickerton, and Egerton, where the water, generally, is unfit for domestic use.

Much time has been expended in the inspection of the water of dairy farms. In all instances requiring it, an improved water-supply has been obtained. In one case twenty dead mice were found in a well, and a mysterious source of pollution was at once removed.

**Inspector's and Surveyor's Department.**—Mr. Davenport reports that during the year 79 notices were served for the abatement of nuisances, &c., and many nuisances were abated by arrangement without formal notice. Seventy nuisances were abated, and 12 permanent improvements effected. At the close of the year there were 50 nuisances being abated.

The number of inspections made in connection with scavenging in the Townships of Haslington, Willaston, Shavington, and Audlem was 2,425. The number of inspections under the Public Health (Water) Act was 46. The number of plans for new buildings passed was 46. The number of letters written was 1,248. The number of houses newly connected to the mains was 294. The number of samples of water sent for analysis was 32. He has also made many inspections of dairies, inspections for Boarding-out Committee, and inspections of canal-boats, and supervised 93 miles of water-mains in 32 Townships.



## NORTHWICH.

### Rural Sanitary District.

Medical Officer of Health—DR. J. M. FOX.

Population at Census, 1891—21218.

Estimated population in middle of 1893—23042.

Area in acres—54774.

Birth-rate per 1000 living—35·0.

Death-rate per 1000 living—17·0.

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

Deaths under one year to 1000 births—163.

In 1893, the number of births registered in the district was 808, and the number of deaths registered in the district was 393. Both birth-rate and death-rate are higher than the corresponding mean rates in the district.

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 35·7, 37·1, 33·4, and 29·0. The death-rates of these four Sub-Districts were respectively 17·6, 17·1, 16·8, and 15·3.

The number of deaths from zymotic diseases in the whole district was 35, viz :—1 small-pox, 14 scarlatina, 2 diphtheria, 4 typhoid fever, 1 puerperal fever, 1 measles, and 12 diarrhœa. The zymotic death-rate is not high.

**Small-pox** was introduced into the district by means of a canal boat, and in all seven cases occurred. The cases were not connected with insanitary conditions or habits in the



district; and vaccination is well attended to. The Medical Officer of Health advises an improved oversight of the water-ways, and improved control of the tramp population. The police should be required to look after able-bodied men going about without occupation. As to canal boats, the duty of inspecting them should not have been imposed on nuisance inspectors without increasing the number of inspectors.

**Notification of Infectious Disease.**—The number of cases of infectious disease notified in 1893 was 258, viz:—7 small-pox, 219 scarlatina, 8 diphtheria, 8 typhoid fever, 1 puerperal fever, 14 erysipelas, and 1 chicken-pox. The Medical officer of Health aims at obtaining many modifications in the Infectious Disease Notification Act. He believes that in districts which have not adopted the Act the scarlatina death-rate is lower than in the Northwich Rural Sanitary District. He is not in favour of adopting the recommendation of the County Council to include phthisis in the list of diseases to be notified. The Authority have for many years been continuously dealing with the causes and origin of consumption. In particular, he instances a clause in the local building bye-laws, "which will ever exclude dampness from the walls" of dwellings.

**Inspection.**—Systematic inspection has been well carried out during the year.

**Nuisance Removal.**—One hundred and twelve notices were served to abate nuisances.

**Water-Supply.**—The water mains have been extended a total distance of 1,500 yards, in order to supply Cuddington, Lostock, and Weaverham with water.

## RUNCORN.

### Rural Sanitary District.

Medical Officer of Health—DR. J. ARMS.

Population at Census, 1891—22467.

Estimated population in middle of 1893—23060.

Area in acres—45923.

Birth-rate per 1000 living—31·6.

Death rate per 1000 living—18·4.

Death-rate from seven principal Zymotic diseases—2·7.

Deaths under one year to 1000 births—161.

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 8,475. 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 5,552. 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 9,033. 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 1893, was 730. The number of deaths registered in the whole District, in 1893, was 426, after deducting 14 deaths in the Dutton Workhouse, of persons belonging to the Urban Sanitary District. The birth-rate is 1·4 above the mean birth-rate of the ten years 1883-92, and the death-rate is just one above the mean death-rate of the ten years 1883-92.

The birth-rates of the three Sub-Districts were respectively 29·2, 33·3, and 32·8. The death-rates of the three Sub-Districts were respectively 19·9, 20·1 and 16·0. Upwards of 27 per cent. of those who died were under one year old—a large proportion.

The number of deaths due to the seven principal zymotic diseases was 63, viz: 10 small-pox, 5 scarlatina, 3 diphtheria, 2 whooping-cough, 8 fever, and 35 diarrhœa. There were also seven other deaths from zymotic diseases, viz:—4 croup, 1 erysipelas and 2 rheumatic fever. The zymotic death-rate in 1893 is just one above the mean zymotic death-rate of the ten years, 1883-92. To this total of zymotic diseases should be added 7 deaths from influenza.

**Infectious Diseases Notified.**—There were 325 notifications of dangerous infectious disease in 1893. The number notified in 1892 was 123, and the number notified in 1891 was 108. A tabular summary is given of the results of investigations by the Medical Officer of Health in respect of the most important of the cases notified. It shows the extent of many local outbreaks, the source of infection where traceable, and the action taken.

**Small-pox.**—It will be remembered that this disease made its appearance in August, 1892, at Walton Inferior, and in September, 1892, at Antrobus, but no extension followed. However, toward the end of December, 1892, some navvies,



working on the Ship Canal Works, brought the disease to Acton Grange, and here, owing to the action of those infected and the refusal of others to be re-vaccinated, the disease spread. Most probably the men contracted the disease from some of their fellow-workmen who lodged at Warrington, where the disease was epidemic. The Medical Officer of Health had heard that men had been seen at work in the Canal cutting, with the small-pox eruption on their faces and hands, yet proof of this could not be obtained. But one day, when visiting Acton Grange, he saw a man just arrived at No. 24 hut, looking for work, who obviously had the disease and was at once ordered to Moore Hospital. As there were a great number of huts at Acton Grange, occupied by navvies and their families, and many lodgers, re-vaccination with calf lymph was offered free to all, and pressed upon them, but at first few availed themselves of the offer, and some opposed the action of the Authority in this matter. It is noteworthy that the most persistent opponent of re-vaccination lost her husband from confluent small-pox, and her son-in-law from malignant small-pox, within a few days of each other.

The occupants of the Ship Canal huts in Moss Side Lane, Moore, escaped an outbreak of small-pox in November, 1892, as when the disease was imported every man, woman and child in the little colony submitted to re-vaccination. But in the same lane, at huts not under the Ship Canal Company's control, a case appeared at the close of the year 1892: the patient walked to the Warrington Hospital, and re-vaccination was offered the other occupants and refused, the result being that 5 fresh cases occurred in January and February, 1893.

Thus early in the year small-pox had shown itself in more than one part of the district, and the Authority having no hospital accommodation was quite unprepared to deal with an outbreak. The Warrington Health Committee were applied to, but they could not undertake to receive cases into their hospital from the Runcorn Rural District. The Medical Officer of Health was then deputed to approach the Ship Canal Authorities, to ascertain if they could lend any of their buildings for use as a hospital. With great promptitude and courtesy they placed at the disposal of the Sanitary Authority the largest wooden erection they had, at the Norton Offices. This was taken down and re-erected on a large spoil-bank at Moore, in about a fortnight. Meanwhile a special committee had been formed, and a steam disinfecter was purchased and placed about 100 yards from the Hospital. During this delay the disease was spreading at Acton Grange—about 20 cases had occurred, with 5 or 6 deaths—and other portions of the district were being invaded by the disease, from different infective points. On



January 9th a tramping navvy from Leeds, in search of work, came to the Ship Canal huts in Frodsham Marsh. The infected hut was at once isolated, and all who had been in contact with the patient were re-vaccinated. Although the case was not removed to hospital till February 9th, no fresh case occurred at Frodsham Marsh. On January 11th a bad case was reported at Bostock Street, Stockton Heath, Appleton. The patient became delirious and eluding the vigilance of his tired-out watchers, with nothing on but his shirt, made his way, through a snowy frosty night, nearly as far as Stretton, when he was stopped till his friends came and brought him home in a wheelbarrow, to die of pneumonic complications. On the same day three cases were reported at Weston, but no hospital being ready, they were isolated as far as possible at home. The infection in this case came from the town of Runcorn. On January 16th a case was reported at Dutton Workhouse. It was dealt with by the Workhouse Authorities, and no extension occurred. On January 23rd a case was reported at the Ship Inn, Lower Walton. The inn was closed, the other inmates re-vaccinated, the patient isolated till the hospital was ready to receive him, and then his clothing, bedding, &c., were disinfected at Moore. No extension occurred. Fresh cases appeared at Stockton Heath, one on January 23rd, three on January 30th, one on February 3rd, one on February 14th, and yet another on February 23rd. On January 28th another case occurred at Weston which had to be dealt with entirely at home.

On February 6th, the Hospital was ready, two months at least after it was required. The same day five patients were admitted, eight on the next day, and so on. In three or four days it was full, and the question of possible enlargement of it, or the erection of another hospital, was arising. Fortunately this was not required as the epidemic gradually subsided. At the request of the Special Committee, the Medical Officer of Health accepted the responsibility of medical charge of the Hospital, although frequent attendance at a Hospital five miles from his house was tedious and anxious work. In March a case of small-pox was reported at Halton, and the patient after much persuasion was got into Hospital. The bedding, clothing, &c., were disinfected and the infected house cleansed. No fresh cases occurred. On April 8th, the last patient was discharged from Hospital. A week later the building was closed and the staff were given a well-deserved holiday.

After the district had, so far as is known, enjoyed a month of freedom from small-pox, a fresh case was reported at Dutton Workhouse on May 9th, and removed the following day. On May 15th, 19th, and 27th, three fresh cases were admitted into Hospital from Weston, on the 31st, one case from Weston Point,



and on May 18th, one from Helsby. One of these patients (who had never been vaccinated) died in Hospital four days after admission. The last case, that from Helsby, was discharged on July 6th. The Hospital was closed on July 14th, and a caretaker appointed to look after the building and keep the steam disinfecter in working order, and he remains in charge.

The number of patients admitted to Hospital was 46. From February 6th to April 8th, there were 40 admitted, and from May 10th to July 6th, there were 6. There were only two deaths in Hospital. One was from debility and exhaustion two months after the disease began, and the other was the death of an unvaccinated person.

The approximate cost of the epidemic was £1120. If the Warrington Health Committee could have accommodated the Runcorn Rural Sanitary Authority cases (taking the average detention in Hospital to be about eight weeks, and the charge to have been that which was mentioned as reasonable, £3 3s. per patient per week), £1160 must have been paid to the Warrington Authorities. Add to this the cost of removing patients long distances to Warrington, and the disinfection, gathering and returning of bedding, clothing, etc. (about £100), and the total is increased to £1260. Thus by providing for and treating its own cases the district has saved about £140. Nor is this all the advantage, for the Authority still have the steam disinfecter, which will be utilised more fully when the permanent Hospital for Infectious Diseases is built, and still have the vans (for removal of patients, bedding, etc.), with the hospital furniture, stores, etc. The present value of these effects is £350, and if this be deducted from £1120 it leaves £770 as the actual cost of stamping out the epidemic.

The number of cases notified was 56, and as the number treated at the Workhouse and at the Authority's Hospital was 48, only 8 cases were treated wholly at home. Cases were notified from 9 different townships.

**Scarlatina.**—As no less than 176 cases of this disease were reported, it is obvious that it was very prevalent within the district in 1893. Only 5 deaths occurred. Cases were notified from 24 townships. The disease was specially prevalent at Kingsley, Whitley Superior, and Halton. At Kingsley, Whitley, and Norley, schools were closed for a short time, when the disease rapidly abated. If a hospital had been ready for the reception of the earlier cases, the Authority would doubtless have succeeded in limiting the extent of the outbreak.

**Proposed Hospital.**—The Medical Officer of Health is happy to be able to state that the Authority has now definitely decided to erect a hospital, and that they are at present engaged



in selecting a site. He trusts in the next Annual Report to be able to record that the hospital has been provided.

**Diphtheria** was less prevalent in 1893 than in the two years immediately preceding. Seventeen cases were notified and 3 deaths. Cases were notified from nine townships. Most of these cases seem to have been associated with accumulations of decaying refuse or privy contents, and point to the need of more efficient arrangements than exist at present for the removal of refuse, emptying of privies, etc.

**Croup** was registered as the cause of death in 4 cases, 2 of which occurred at Frodsham, the township from which the largest number of diphtheria cases was reported. Only six cases of croup were notified.

**Whooping-cough** is not notified, so the extent of the disease is not known. Only 2 deaths were ascribed to this disease, both at Great Budworth.

**Typhoid Fever.**—There were 30 cases of this disease notified and 7 deaths. It was widely spread, having occurred in 12 townships. Ten cases were reported from Weston, 4 from Halton, and 4 from Frodsham. There was nothing very definite discovered to account for the disease, but the usually neglected condition of the ashpits and privies. There is also far too much keeping of pigs near to dwelling-houses.

**Continued Fever.**—Eighteen cases of this disease were notified and one death. All occurred at Weston, or Weston Point (which is part of the township of Weston). The Medical Officer of Health investigated both series. The disease appeared to have spread a great deal by personal infection, most of the cases having been in intimate relation with previous cases.

**Diarrhœa** caused no less than 35 deaths in 1893. This is very much in excess of the mean number of deaths from this cause in the district. All those who died were under five years of age. The deaths were reported from 12 townships. Eight were reported from Weston, 7 from Frodsham, 3 from Frodsham Lordship, 4 from Appleton, and 4 from Norton.

**Cholera.**—A case of cholera was reported at Weston, but investigation revealed that it was only what is called "cholera nostras." Owing to work in connection with the Ship Canal, Weston Point was called upon temporarily to receive the whole of the Runcorn-bound shipping, and during this time the Medical Officer of Health received a telegram that the s.s. Crofthead had arrived from a cholera port with a clean bill of health, but dirty bilges, and he went down to see that she had her bilges thoroughly cleaned out. Nothing else occurred



under this heading, except that a deputation from the Runcorn Rural Sanitary Authority attended a meeting at Liverpool, to arrange for conjoint action on the part of the Port Sanitary Authorities in the event of an invasion of cholera.

**Erysipelas.**—Twenty-one cases of this disease were notified, with one death. The death occurred at Frodsham. In 1892 also the only fatal case of erysipelas was at Frodsham.

**Influenza** accounted for 7 deaths, one fatal case having occurred in each of the following places:—Halton, Helsby, Frodsham, Frodsham Lordship, Acton Grange, Budworth, and Dutton (Workhouse). In 1892 there were 17 deaths ascribed to influenza, and in 1891, 19.

**Water-Supply.**—There is still need of an improved water-supply at Alvanley. An attempt was made to combine with Helsby and Manley in getting a joint-supply but it came to nothing. The supply of a portion of Bartington is still defective, but as the rating is not equal to the cost it is difficult to propose a remedy. Two cases of typhoid fever at Bartington were probably due to defective water. At Clifton the supply has recently been improved and is satisfactory. At Dutton water is still wanted. A notice was served on owners to provide an improved supply, but this was cancelled by the Local Government Board, owing to the cost, in their opinion, being too great. The inmates of this house have to carry their drinking water about a mile. At Frodsham a contract has been let for carrying out a scheme which is calculated to yield 30,000 gallons a day, which will supply all Frodsham proper, but not the outlying parts, at the rate of 12 gallons a day per head. Frodsham Lordship has not thought fit to be included in the scheme, but it appears to be sufficiently elastic to admit the Lordship to benefit, at the increased cost of lifting the water to a higher level. The supply to "the Common" at Halton is still unsatisfactory. At Helsby the Parochial Committee have offered a premium for a satisfactory water scheme. At Kingsley the needed improvement in the supply is not yet made. At Manley, also, there is still need of better supply for the greater part of the Township. At Norley the supply to Blakemere Lane (referred to in the two last Annual Reports) is still in the same unsatisfactory condition. The Village of Norton has been given a supply from the Liverpool Water Works, but some farms are still in need of water, and an extension from the mains is recommended. There are parts of Preston-on-the-Hill very much in want of water. All that has been done in this Township during the year is that four houses have been supplied by sinking a well 135 feet deep. The new public pump at Sutton Village has not answered expectations. Owing to the great



depth of the well it is exceedingly difficult to raise the water, and consequently the pump is scarcely used at all. It seems possible to remedy this by inserting a force pump. At Weston the present supply (from Runcorn) is intermittent, and there are over 100 houses without a sufficient supply. The mains should be enlarged and the supply made continuous.

**Sewers, Drains and Scavenging.**—At Appleton the sewer-extensions, necessitated by the erection of new property, have been carried out and a further extension is contemplated. The Medical Officer of Health has repeatedly recommended some more efficient method of dealing with ash-pit and privy refuse in this township, and draws attention once more to the matter. The drainage of property at Halton Brook has been carried out and satisfactorily meets immediate requirements. A satisfactory extension of sewerage has also been carried out at Moss Lane, Moore. At Sutton, the improved drainage of the schools (which was much required) has been undertaken.

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. 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 Public Health Acts Amendment Act, 1890.**—During 1893 this Act was adopted by the Runcorn Rural Sanitary Authority, so far as it relates to rural districts.

**Inspector's Report.**—Appended to the Medical Officer's Report is a statement of the work done by the Inspector. Under the Public Health Act, 1875, 43 reported nuisances were dealt with. The nuisances were caused by defective drainage of houses and yards, defective privies and ashpits, accumulations of refuse, overcrowding, &c. Particulars are also given of a considerable amount of work done under the Public Health (Water) Act. Periodical inspections were made under the Canal Boats Acts. Ninety-two inspections were made. It is noted that since the passing of these Acts there has been a marked improvement in the canal population.



**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 1893—509.

Area in acres—645.

Birth-rate per 1000 living—17·7.

Death-rate per 1000 living—9·8.

Death-rate from seven principal Zymotic diseases—0.

Deaths under one year to 1000 births—111.

The whole Township of Brinnington has an area of 778 acres, and the population at the Census was 7,061. Out of this 133 acres, the Census population of which was 6,576, belong to the County Borough of Stockport.

In 1893, the number of births registered was 9, and the number of deaths registered was 5. Two of those who died were under five years of age.

Four cases of infectious disease were notified, viz: 1 scarlatina, 2 diphtheria, and 1 erysipelas. The cases of diphtheria were both infected from patients in the Borough of Stockport. The case of scarlatina came from Blackpool. The erysipelas was a very mild form of the disease.

The district is in a very healthy and satisfactory state.

There were 4 nuisances reported, and the same number of notices served. Three sink waste-pipes were disconnected and made to deliver on traps, the drains of one house were relaid, and a well was cleaned out.

Twenty new houses were erected.

**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 1893—804.

Area in acres—1311.

Birth-rate per 1000 living—27·3.

Death-rate per 1000 living—18·3.

Death-rate from seven principal Zymotic diseases—4·9.

Deaths under one year to 1000 births—227.



In 1893, the number of births registered was 22, and the number of deaths registered was 15. Out of these deaths 9 were of children under five years of age—a very large proportion.

The number of deaths from zymotic diseases was 5, viz. :—1 croup, 1 typhoid fever, 1 whooping-cough and 2 diarrhœa.

The cases of zymotic disease notified were 2 of scarlatina, and 3 of typhoid fever. The cases were visited and the source of infection inquired into. The scarlatina, the Medical Officer of Health believes, was imported from a neighbouring village. One of the typhoid cases (the fatal one) was a child under five years of age. The disease was supposed to arise from effluvia inhaled from a grave which was opened for the purpose of interring another child. There was nothing to account for the disease in the other two cases.

Handforth has been in a much more satisfactory and healthy state than in 1892. The ditch-drains complained of in the last Annual Report have been cleaned out regularly and are kept in a better condition.

**State of Churchyard.**—The Medical Officer of Health reported, a year ago, that the churchyard was full and that there ought to be no more interments therein. Since then fresh burials have taken place. The churchyard remains in the same state, except that more bodies have been crowded into what was already an insanitary and overcrowded burying-ground. It is hoped that the Authority will consider this matter and see what can be done,

**Nuisance Abatement.**—The number of nuisances reported during the year was 16. In respect of 10, formal notices were served, and 6 were abated without notice. Eight ditches were cleansed, 9 sink waste-pipes were disconnected and made to deliver on traps, a nuisance from flooded cellars was abated and 3 ashpits were repaired. Thirty-five yards of sewers were laid.

## STOCKPORT.

### Rural Sanitary District.

#### Hazlegrove Sub-District.

Medical Officer of Health —DR. T. MOORE.

Population at Census, 1891—7868.

Estimated population in middle of 1893—8055.

Area in acres—6072.

Birth-rate per 1000 living—26·6.

Death-rate per 1000 living—16·0.

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

Deaths under one year to 1000 births—120.



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 Hazle-grove, with the remaining portion of the Township of Bramhall, lying outside the drainage-area district.

The area and population of the 5 Townships are as follows :—

	Area in acres.				Population at Census.			
Bosden .. .. .	492	...	...	...	2342	...	...	...
Bramhall ... ..	2885	...	...	...	3365	...	...	...
Norbury ... ..	1249	...	...	...	1495	...	...	...
Torkington ... ..	823	...	...	...	294	...	...	...
Offerton .. .. .	623	...	...	...	372	...	...	...

The estimated population in 1893, and the births and deaths during the year, as regards these Townships, are as follows :—

				Population in middle of 1893.		Births.	Deaths.
Bosden	...	...	...	2430	}	208	41
Bramhall	...	...	...	3420			56
Norbury	...	...	...	1527			25
Torkington	...	...	...	296			4
Offerton	...	...	...	382		7	3

The number of births in the whole Sub-District was therefore 215, and the number of deaths 129.

The number of deaths due to the chief zymotic diseases was 18, viz.: 5 measles, 3 scarlatina, 4 fevers and 6 diarrhœa. There were also 2 deaths from croup, 3 from rheumatic fever and 15 from phthisis.

The number of cases of infectious disease notified was 159, viz.: 1 small-pox, 94 scarlatina, 11 diphtheria, 2 croup, 13 typhoid fever, 30 continued fever, 4 puerperal fever and 4 erysipelas.

**Small-pox.**—Only two cases of this disease occurred during the year. In one case the patient was a workman living at Newtown, Bramhall, who contracted the disease from a fellow workman at Stockport. This case was removed to the Stockport Borough Hospital. The other case occurred at Norbury. Here there was no evidence as to how the malady had been contracted. The sanitary condition of the house the patient occupied was satisfactory, and as it was in an isolated position the case was treated at home.

Vaccination is systematically and regularly attended to. The children do well after the operation. There has been no case of erysipelas following vaccination.



**Measles** were prevalent during the early part of the year, though in a mild form. The cases are not notified to the Authority, and most of the parents are under the impression that it is not necessary to call in medical aid.

**Scarlatina** was prevalent during the early part of the year. Many of the cases were mild in form, and no medical advice being obtained, the parents in their ignorance allowing the children who had the disease to mix with others before the peeling was completed. A child in this infective stage of the disease was found at one of the public schools, and it had then been in attendance for some days. The child was immediately ordered home, and under the direction of the Authority the school was closed. However, many children had already been in contact with the peeling child and the disease spread rapidly. Had this case been correctly diagnosed in the first instance, and proper precautions taken, many who caught the disease would have escaped, and the school authorities would have been saved trouble and expense. It is hardly possible to imagine a more prolific source of infection than a child in this stage of scarlatina, sitting and playing in the midst of some three or four hundred children in a public school.

**Fevers.**—It will be noted that a large number (30) of cases of continued fever were reported, besides 13 cases of typhoid fever and 4 cases of puerperal fever. The only fatal case of typhoid fever occurred at Norbury, in a house the drainage of which was found to be inefficient. The defects are now being remedied, as the Authority are laying a main drain for that part of the Sub-District. With reference to the 3 fatal cases of puerperal fever, no cause could be assigned for two of them. One case arose from infection, the patient having injudiciously visited a case of scarlatina the day previous to her confinement.

**Diarrhœa.**—The unusually dry, hot summer and autumn was probably the main cause of most of the deaths attributed to diarrhœa; though the eating of improper food often leads to gastric irritation, which when neglected brings on diarrhœa. Five of the six who died of the disease were under one year old at the time of death.

**Water-supply.**—The water-supply is very good, coming from the reservoir at Lyme Park, belonging to the Stockport Water Works Company. Some inconvenience was caused, during the drought, by the limited supply, which to some extent was the cause of many cases of continued fever which were reported.



**Milk-shops.**—The milk-supply is also good, but the Medical Officer of Health draws attention to the necessity of great care being exercised by the vendors. All articles used in dealing with milk must be kept scrupulously clean, and in rooms quite detached from ordinary living-rooms.

**Systematic Inspections** are made by both the Medical Officer of Health and the Inspector. The Sub-district is fairly free from dwelling-houses unfit for habitation, and from overcrowding. Yet, there is a part of Bosden where the dwelling-houses are old and wanting in modern conveniences, though not sufficiently bad to be condemned. Grosvenor Street in Bosden is in a very unsatisfactory state, owing to the accumulation of mud thereon during the greater part of the year.

Two great improvements have been effected during the year—the lighting of the streets and the removal of the telephone posts from the main road. In some localities the number of lamps should be increased; and it would be an advantage if the telegraph posts were also removed from the main roads.

**Report of the Surveyor and Inspector.**—In all 172 nuisances were entered in the report book. Formal notices were served in respect of 96, and 61 were abated without formal notice. Seven house drains were cleansed and repaired, 28 sink waste-pipes were disconnected, 22 privies and ash-pits were repaired, 3 farm drains, 8 ditches, and 2 cesspools were cleansed. Sixteen connections to sewers were made. One case of overcrowding was dealt with, and one house was condemned as unsafe.

Sixty-seven new houses were erected, and 10 warehouses, stables, &c. Three new streets were made, and 52 yards of sewers were laid.

On March 25th, the Authority let to a contractor the work of emptying and carting away house-refuse within the Hazelgrove Special Drainage District. This was done during the remainder of the year, under the Surveyor's supervision. The number of emptyings was 830, and the cost £145 5s. 0d.

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## STOCKPORT.

Rural Sanitary District.

South Werneth Sub-District.

Medical Officer of Health—DR. F. CANT.

Population at Census, 1891—1,612.



Estimated population in middle of 1893—1,012.

Area in acres—909.

Birth-rate per 1000 living—19·7.

Death-rate per 1000 living—17·7.

Death-rate from seven principal Zymotic diseases—1·9.

Deaths under one year to 1000 births—300.

This Sanitary Sub-District is part of the Township of Werneth, the remainder being in the Borough of Hyde. It includes Compstall, 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 1893 was 20, and the number of deaths registered in 1893 was 18. Eleven of the 18 deaths were of children under 5 years old. This infant mortality is excessive.

Three cases of diphtheria came to the knowledge of the Authority during the year, but only one of these was reported in accordance with the terms of the Infectious Disease (Notification) Act. This was a very mild case of the disease, the other two proved fatal. The patients were very young children, and their parents do not seem to have suspected the existence of grave disease till the children were dying, when a medical man was called in. The attention of the Sanitary Committee was drawn to the matter and enquiries made, but the replies made were considered satisfactory. The disease did not spread.

**Water-Supply.**—This is inquired into systematically when the Inspector makes his periodical visits. In addition, the Medical Officer of Health has visited all the farms in the Sub-District during the year, and examined it to the water-supply. On the whole it was found to be satisfactory both in quantity and quality, except at two farms, and on these arrangements were being made for boring operations to get a supply better and nearer than the old supply. The irregular, hilly nature of the land makes it almost impossible to have a systematic supply for the whole area. At Compstall, in spite of the dry season, the domestic supply held out very well.

**Nuisance Abatement.**—The number of nuisances reported was 17, and the number of formal notices served for their abatement was 8. The nuisances included defective house-drains, privies and ashpits, &c, and these were repaired. Many of the cottages are provided with bucket closets, and the arrangement for emptying these regularly every week works satisfactorily.



## TARVIN.

## Rural Sanitary District.

Medical Officer of Health—Dr. G. A. Kenyon.

Population at Census, 1891—12,436.

Estimated population in middle of 1893—12,382.

Area in acres—54,547.

Birth-rate per 1000 living - 30·7.

Death-rate per 1000 living—15·2.

Death-rate from seven principal Zymotic diseases—1·0.

Deaths under one year to 1000 births—97.

This large Rural Sanitary 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, Aldersey, Harthill, Edgerley, Churton-by-Aldford, Aldford, Buerton, Lea Newbold, Churton Heath, Saighton, Iddinshall, Waverton, Huxley, Hatton, Tattenhall, Golborne Bellow, Newton by-Tattenhall, Handley, Golborne David, Foulk Stapleford, Bruen Stapleford, Burton, Clutton Hoofield, Duddon, Willington, Kelsall, Ashton, Mouldsworth, Horton-with-Peele, Tarvin, Hockenhull, Pryors Hayes, Barrow, Guilden Sutton, Cotton Edmund's, Cotton Abbotts, Rowton, Huntington, Tiverton, Tilstone Fearnall, Beeston, and Burwardsley.

The four townships last named (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. These four townships have together an area of 5,617 acres and, at the date of the Census, had a population of 1401. There has also been transferred to this district the enumerated population of the Tarvin Union Workhouse, situated in Great Boughton, in the Chester Rural Sanitary District.

In 1893, the births registered in the district numbered 381, and the deaths (including 12 deaths occurring outside the district, but belonging thereto) numbered 189. The death-rate is low, and the proportion of deaths among infants is small.

There was one death from croup, one from rheumatic fever and there were two deaths from diphtheria, 5 from typhoid fever, 2 from whooping-cough, 4 from diarrhœa, 16 from phthisis, 23 from bronchitis or pneumonia, 14 from heart disease and 3 from injuries.

Under the Infectious Disease Notification Act there were reported one case of small-pox, 20 cases of scarlatina, 29 cases of diphtheria, 19 cases of typhoid fever and 7 cases of erysipelas.

The case of small-pox was a person who had recently arrived from London. Almost everyone that had been near the



patient was at once revaccinated by the public vaccinator, and as the patient was located in a large farm house there was no difficulty about isolation.

The cases of scarlatina were scattered over the district and occurred mostly at different times. Most of the cases were to the east of the Chester and Crewe Railway. There was no great spread of the disease and no cases proved fatal.

The cases of diphtheria were in the neighbourhood of Kelsall and Tarvin. As usual many were very mild, but two were fatal.

In three of the cases of typhoid fever (one fatal) the disease was caught during a sojourn in the Isle of Man. Seven cases of typhoid fever occurred at Farndon about the same time, and appeared to be due to infection imported and transmitted by personal contact from two distinct places. The other cases were solitary attacks. In the case of the outbreak at Farndon a nurse was provided at the cost of the Vicar, it being found impossible to legally charge the Sanitary Authority with the expense. This is a serious defect in the wording of the Public Health Act. It must frequently happen in a large and scattered district like Tarvin, that hospital accommodation is remote, whereas all that is wanted is a nurse or nurses. The sick are not paupers and not in particular need of anything but personal attendance, the villagers were afraid to come near, and no one could be got on the spot. One of the patients, who recovered in time to nurse her husband, was on the verge of confinement and was confined soon afterwards. A serious state of things might have occurred had no help been forthcoming. In another cottage the patient was delirious, and his wife (worn out with nursing) was ill able to restrain him, while there was no power to adopt the simple expedient of sending him a nurse or nurses at the cost of the Sanitary Authority.

As regards all the notified cases, action was taken as required for the removal of insanitary conditions, disinfectants were supplied, and isolation as far as practicable was obtained.

The Medical Officer of Health visited the district a number of times, made inspections and investigated cases of infectious disease.

The Inspector continues to perform his duties with assiduity. Progress is made in getting rid of conditions injurious to health and improving the water-supply, but the latter operation is hampered by the very limited outlay owners can be called upon to make. Three new wells have, however, been obtained.

During the year, 19 samples of water were submitted to the Medical Officer of Health for analysis. Ten were bad and unfit to drink. In these cases action was taken to remove



sources of contamination or instructions given to discontinue the use of the water, or (when that was impossible) to boil it.

A new well has been sunk by the Sanitary Authority to improve the supply at Tarvin. It yields a very good water.

The premises licensed for the sale of milk are regularly visited by the Inspector, and are generally well kept.

The district being thinly populated and not having many large villages, there are few sewers and water-closets are comparatively rare. Most of the houses are provided with combined 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 much as possible to earth closets, and much has been done in this direction.

Overcrowding is not frequently reported.

The Fever Hospital in connection with the Chester Infirmary is available for this district, but no cases were removed from the district to hospital in 1893.

## WARRINGTON.

### Part of Rural Sanitary District in Cheshire.

Medical Officer of Health—DR. R. SEPHTON.

Population at Census, 1891—2194.

Estimated population in middle of 1893—2401.

Area in acres—3397.

Birth-rate per 1000 living—18·3.

Death-rate per 1000 living—7·9.

Death-rate from seven principal Zymotic diseases—0·8.

Deaths under one year to 1000 births—136.

This Rural Sanitary District has an area of 23681 acres, and it is mainly situated in Lancashire. The Cheshire portion is as follows :—

	Area in Acres.	Population at Census.
Part of Latchford ... ..	529	440
Grappenhall ... ..	1610	984
Thelwall (including Greenfield) ...	1258	770

In 1893, there were registered in the Cheshire portion of the district 44 births and (excluding 4 which occurred in the district among persons not belonging thereto) 19 deaths. The 4 deaths excluded took place in the Manchester Ship Canal Hospital, and were due to injuries.

The number of deaths from zymotic diseases was 3, viz. : 1 small-pox, 1 croup and 1 puerperal fever.



Birth-rate, death-rate and zymotic death-rate are all very low.

**Infectious Disease.**—Fifteen cases of infectious disease came to the knowledge of the Medical Officer of Health, viz. : 5 small-pox, 3 scarlatina, 3 typhoid fever, 1 puerperal fever, and 3 erysipelas.

**Small-pox.**—This disease, it may be remembered, was imported from the town of Warrington into Grappenhall in December, 1892, and it prevailed in parts of the Rural District till March 25th. In June the disease reappeared in the Cheshire portion of the district, 3 cases occurring at Thelwall Huts. They were isolated in one of the empty huts, which was made into a temporary hospital, and here altogether five cases were treated. One case proved fatal. They would have been removed to the Warrington Hospital, but the Warrington Corporation refused to receive any cases from outside the Urban District. The last case was reported on July 28th. All the inmates in the infected dwellings were vaccinated or re-vaccinated, as well as persons coming in contact with these dwellings.

**Typhoid Fever.**—The 3 cases of this disease notified were not in any way connected. In one case, occurring at Ribblesdale, Grappenhall, the disease was contracted outside the district. Another case, at Latchford, was contracted at Acton Grange in the Runcorn Rural District. The remaining case was at Thelwall. In the house where it occurred the yard drains were untrapped, and this defect was remedied forthwith.

**Measles.**—This disease was prevalent, but to what extent is not known. The Medical Officer of Health thinks that it ought most certainly to be included in the list of diseases required to be notified.

**No Isolation Hospital.**—As the Authority has provided no hospital for the isolation and treatment of infectious cases they have to be isolated as far as possible in their own homes. Practicable precautions are taken and disinfectants are freely used. After convalescence or death the premises, or portions exposed to infection, are thoroughly disinfected and cleansed. A hospital for infectious cases is a principal requirement of the district.

**Water-supply.**—This subject has received marked attention during the year. Many samples have been submitted to the analyst for examination and those certified "bad" or "doubtful" have been rejected. The supply to various parts of the district is improved by sinking new wells or deepening the old ones.



**Routine Work.**—All parts of the district are visited and inspected many times a year; and very frequently when infectious diseases are present. Defects discovered have been reported and remedied. Common lodging-houses, Bakehouses, Dairies, Cowsheds, Milkshops, Slaughter-houses and Knackers' yards have been inspected.

**Removal of Excreta &c.**—This work is being well done by the contractors. The pails after emptying are well washed and disinfected, and the dust bins are carefully cleansed.

## WHITCHURCH.

Part of Rural Sanitary District in Cheshire.

Medical Officer of Health—DR. W. N. THURSFIELD.

Population at Census, 1891—4318.

Estimated population in middle of 1893—4318.

Area in acres—21160.

Birth-rate per 1000 living—29·6.

Death-rate per 1000 living—12·7.

Death-rate from seven principal Zymotic diseases—1·8.

Deaths under one year to 1000 births—78.

This Rural Sanitary District is partly in Shropshire and Flint. The main portion, in Cheshire, includes the whole of the registration Sub-District of Malpas, and three townships in the registration Sub-District of Whitchurch.

Malpas Sub-District has an area of 16468 acres and a population of 3526. It includes Bickley, Hampton, Larkton, Duckington, Edge, Overton, Malpas, Chorlton, Cuddington, Oldeastle, 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.

In 1893, the number of births registered in the Cheshire portion of the whole district was 128, and the number of deaths was 55, including 3 deaths occurring outside the district among persons belonging thereto. The death-rate is about equal to the mean low death-rate of recent years. The proportion of deaths under one year to births is small.

There were 8 deaths from zymotic diseases, viz.:—1 scarlatina, 1 diphtheria, 3 whooping-cough, and 3 diarrhœa.

The number of cases of infectious disease that came to the knowledge of the Medical Officer of Health was 67, viz.: 64 scarlatina and 3 diphtheria. No hospital is provided, but on



cases being reported, the necessity of isolation as far as practicable was inculcated and special care taken to obviate the risk of infection by school attendance, clothing taken to wash, milk selling, &c. On the patient's recovery the need was pointed out of having the infected rooms fumigated with sulphur and lime washed.

**Scarlatina.**—Outbreaks of this disease occurred in several localities during the year. In some of these the source of infection was imported from other districts. In several instances the disease was prevented from spreading, but many of the cases were of a mild type, attracting but little notice, and these, aided by schools, disseminated the disease. For this reason the managers of the Malpas Schools judiciously closed their schools for a short time.

**Diphtheria.**—The three cases of this disease reported were in different parts of the district. Proper precautions were taken and the infection did not spread. One case terminated fatally.

**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.

**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.

**Country Cottages.**—One of the most difficult sanitary problems the Medical Officer of Health is called on to solve is how to act with reference to rural cottages which in construction or environment are scarcely healthy dwellings, and yet which can neither be put in good order nor condemned. Such cottages



are often old and damp, and drain into a neighbouring ditch, their closets are of a primitive description and the water supply is not near enough. There is no getting rid of the damp altogether, draining into a ditch is often better than into a cess-pit in the small garden, and going some distance for water is better than having close at hand a shallow well, likely to be fouled.

**Overcrowding.**--Occasionally in a single-bedroomed cottage is found a family, or a two-bedroomed cottage is occupied by a large family. However, there is not much gross overcrowding in the district, though it is often noticed that the air-space per person in the cottages is too little. Where the overcrowding depends on the taking in of lodgers or the unnecessary retention at home of adult sons or daughters notice is given to abate the nuisance.

**Milk-supply.**—Although the Authority have not yet made any regulations with reference to dairies, cow-sheds and milk-shops, the Inspector exercises a wise supervision over them, to insure their being kept clean and in order.

**The Notification of Phthisis.**—The Medical Officer of Health says he cannot conclude his Report without expressing his cordial appreciation of the action taken by the Authority in endeavouring to include consumption among notifiable diseases. Although consumption is not more prevalent in the district of Woodchurch than in other country districts, he does not recollect a single instance in which the annual deaths from consumption did not far exceed those from the seven principal infectious diseases. Not unfrequently this disease is contracted in large towns and the sufferers come home to die, and at least one room in the cottage becomes greatly in need of efficient disinfection.

If however, consumption were notifiable, the official action of a Sanitary Authority could not well go beyond obtaining the disinfection of rooms which had long been occupied by a consumptive patient, and the distribution of handbills to notified cases calling attention to certain simple and readily applicable precautions.

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## WIRRAL.

### Rural Sanitary District.

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

Population at Census, 1891—18,251.

Estimated population in middle of 1893—15,922.

Area in acres—36,626.



Birth-rate per 1000 living—28.2.

Death-rate per 1000 living—13.3.

Death-rate from seven principal Zymotic diseases—1.1.

Deaths under one year to 1000 births—122.

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-district, 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 12,668 acres, and an estimated population of 3,640. It includes Puddington, Burton, Ledsham, Willaston, Ness, Raby, Thornton Hough, Gayton, and Heswall-with-Oldfield.
2. Eastham, having an area of 11,348 acres, and an estimated population of 8,558. It includes Great Sutton, Little Sutton, Whitby, Overpool, Netherpool, Childer Thornton, Hooton, Eastham, Brimstage, Poulton-cum-Spital, and Storeton.
3. Woodchurch, having an area of 12,610 acres, and an estimated population of 3,724. It includes Prenton, Woodchurch, Landican, Thingwall, Barnston, Pensby, Irby, Arrow, Thurstaston, Caldy, Frankby, Greasby, Grange (part of), Upton, Saughall Massie and Moreton.

It will be noted that the estimated population of this 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 2,432 persons engaged on the Manchester Ship Canal. These remained in the district for a considerable part of 1892, but form no part of the local population in the year under review.

In 1893, the birth-rates of the 3 sub-districts were respectively 27.1, 29.6, and 23.6. The death rates of the 3 sub-districts were respectively 14.8, 12.8, and 12.0.

The births registered in the whole district numbered 450, the deaths registered in the whole district (exclusive of six deaths occurring within the district among persons not belonging thereto) numbered 213.

There were 18 deaths from the principal zymotic diseases, viz.: 1 small-pox, 1 measles, 2 scarlatina, 1 diphtheria, 1 whooping-cough, 1 typhoid fever, and 11 diarrhœa. There was also a death from croup. Four deaths were from rheumatic fever, 11 from phthisis, 43 from bronchitis or pneumonia, 20 from heart disease, and 8 were from injuries.



Under the Infectious Diseases Notification Act, 104 cases were reported to the Authority, viz., 2 small-pox, 74 scarlatina, 2 diphtheria, 13 typhoid fever, 2 puerperal fever, and 11 erysipelas. Of these 2 cases of small-pox, 8 of scarlatina, a case of diphtheria and one of typhoid fever were removed to hospital. The cases of small-pox were sent to the Greasby Hospital and the rest to Spital.

The two cases of small-pox occurred in a hut belonging to the Ship Canal Works at Eastham. The first case was a lodger who had arrived at the hut three days before, from a three weeks' tramp after leaving work on a Railway in Derbyshire. The patient was removed to hospital on the day the notification was received (March 14th.) and the hut, &c., disinfected. The rest of the inmates (10 adults and a child) were re-vaccinated as soon as practicable. The vaccination "took" in every case, but one patient developed small-pox, the disease being notified on April 1st. The case was at once removed to hospital, the bedding was burned, the hut again fumigated and cleansed, and no further case occurred. The occupants of the hut were carefully prevented from intercourse with others for about 14 days after the first attack, but were not longer detained on account of the second attack. The second case proved fatal.

Of the cases of scarlatina reported 35 occurred in Little Sutton, 12 at Ellesmere Port (Whitby), 11 at Heswall, and the rest were scattered through 12 townships, some of them widely separated. Cases of the disease had occurred at intervals in the townships surrounding Little Sutton, and one or two families in Little Sutton were affected from the beginning of May. The children were kept from School, and no general spread took place till the beginning of August, when without obvious cause the infection began to spread somewhat rapidly. The schools were at once closed by the managers and were kept closed for more than three months. A large proportion of the patients were under school age, and many of the cases were very slight, only one of the Little Sutton cases was fatal. The other fatal case of scarlatina was one of the Ellesmere Port cases. One of the cases of scarlatina removed to hospital was from huts in Burton, occupied by navvies engaged in constructing the new railway from Hawarden Bridge to Birkenhead; no other cases occurred there.

Of the 13 cases of typhoid fever reported 3 occurred in Neston Sub-District and 9 in Eastham Sub-District. One of the cases was imported from Birkenhead.

The notified cases were all investigated, and action taken, as required, for disinfection, the removal of insanitary conditions, and for preventing attendance at school.



The Medical Officer of Health visited the district a number of times, made general and special inspections, and investigated outbreaks of infectious disease. Particular attention has been paid to the sanitary condition of Little Sutton, and steps are being taken by the Authority to extend sewers and get rid of some of the offensive ditches. Great improvements have been effected at Prenton, Irby, and Moreton in replacing sewage ditches with properly laid glazed-pipe sewers, at the expense of the owners of property causing the nuisance.

The district is generally supplied with water from the Wirral Water Works. During the long dry summer the pressure has not always been satisfactory; but it is understood that steps are being taken by the Company to perfect the supply.

Six samples of water have been submitted to the Medical Officer of Health for analysis. Five were good, one bad and unfit to drink. One of the samples was from the well mentioned in the last Annual Report as contaminated underground in consequence of the Ship Canal Works. Now that water has been sometime let into the Canal, the well referred to has regained its original purity.

The sewers at Eastham are flushed fortnightly, those at Heswall and Ellesmere Port are flushed monthly.

The Sanitary Authority continue to contract for the removal of ashpit refuse at Ellesmere Port, Little Sutton and Childer Thornton.

The Inspector is very attentive to his duties, which in addition to ordinary work undertaken by a sanitary inspector, includes the inspection of new houses to see that they conform to the requirements of the building bye-laws, the inspection of cowsheds and dairies (241 in number) the inspection of canal boats (170 in number) the care of the sewers and the flushing thereof, and the supervision of the contractors who remove the ashpit refuse. Cases of overcrowding are not frequent.

The Inspector reports that he received 75 complaints during the year, inspected 971 premises and issued 156 orders to remedy sanitary defects. Fifty-nine houses &c. were cleansed, repaired and white washed, 61 houses were disinfected after infectious disease, in 38 houses the drains were repaired, cleansed &c., in 9 houses the drains were trapped or ventilated, in 4 houses the drains were newly connected with the sewers, 49 privies were made dry, 4 new ones were provided, 14 privies were converted into water-closets, in 7 cases the removal of accumulations of refuse was obtained, in 2 cases the removal of animals improperly kept was obtained, and 24 houses were newly connected with the water mains.

There are eight slaughter-houses in the district regularly inspected.



The Greasby Hospital has now been taken over by the Joint Hospital Board, who pay rent for it. It is specially used for small-pox cases.

In consequence of an intimation that the site would be required for other purposes by the Shropshire Union Railway and Canal Company, the wooden hospital at Ellesmere Port was sold for the sum originally paid for it by the Joint Hospital Board, and was shortly afterwards accidentally burnt to the ground. The purchaser, instead of pulling the building down, took up his abode in it, and it was while the Parochial Committee were taking measures to prevent him from occupying the premises, the catastrophe happened which saved further proceedings. The fire having occurred enables the Authority to realise the danger of wooden buildings, and the importance of bye-laws prohibiting their erection.

## 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 1893—522.

Area in acres—2478.

Birth-rate per 1000 living—26·8.

Death-rate per 1000 living—9·5.

Death-rate from seven principal Zymotic diseases.—1·9.

Deaths under one year to 1000 births—142.

The portion of this Rural Sanitary 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, is as follows:—

	Area in Acres.	Population at Census.
Shocklach Church	1,278	158
Shocklach Oviatt including Shocklach Green	1,048	158
Part of Threapwood	152	206

In Shocklach Church there were 5 births and one death. In Shocklach Oviatt there were 5 births and no deaths. In the whole of Threapwood the births were 7 and the deaths 6. The births and deaths in the Cheshire and Flintshire parts are not shown separately in the returns furnished, but as there are 55 houses in the Cheshire portion and 30 houses in the Flintshire portion it is estimated that 4 of the births and 4 of the deaths



were in Cheshire. This gives the births as 14 and the deaths as 5 for the Cheshire portion of the Rural Sanitary District.

One of the deaths in Threapwood was from whooping-cough.

No case of infectious disease was notified in the Cheshire portion of the district. The Wrexham Joint Hospital is provided for cases of infectious disease in the district.

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.

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## APPENDIX OF STATISTICS FOR 1893.

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### **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 seven principal zymotic diseases, and corresponding death-rates.

### **TABLE II.—Mortality—**

Showing deaths from certain causes and all causes, classified according to Localities, Ages, and Diseases.

### **TABLE III.—Infectious Sickness—**

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 Infectious Diseases and Hospital Provision.



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 I.—POPULATION, AREA, BIRTHS, DEATHS, &amp;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 1893	Area in 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.					
MUNICIPAL BOROUGHES.																			
Congleton	10744	10744	2572	4.17	306	28.4	203	18.8	50	19	11	13	63	47	163	26	2.4	5.3	
Crewe	32783	35338	2193	10.11	1228	34.7	694	19.6	211	189	38	19	181	105	171	130	4.2	1.7	
Hyde	30670	31104	3074	10.11	951	30.5	750	24.1	224	118	32	36	166	174	235	131	1.7	4.0	
Macclesfield	26209	26009	8215	11.20	931	25.8	744	20.6	177	53	25	37	247	205	190	63	4.0	3.6	
Stalybridge	25783	27231	3185	8.68	736	27.0	683	25.0	165	120	32	23	191	152	224	109	3.6	2.4	
	136989	140426	14189	9.89	4152	29.5	3074	21.8	827	449	138	128	848	684	109	519	2.4	2.4	
OTHER URBAN DISTRICTS.																			
Altrincham	12440	12756	662	19.28	860	28.2	227	17.7	51	24	6	18	59	69	141	22	1.7	2.7	
Higher Hebbington	1421	1481	699	2.11	52	35.1	24	16.2	3	2	1	1	11	6	57	4	2.1	2.1	
Lower Hebbington	5216	5477	1054	5.19	144	26.2	87	15.8	17	9	3	5	37	16	118	12	0.3	0.7	
Bollington	3913	3913	494	7.92	109	27.8	57	14.5	15	2	2	5	22	11	187	1	0.7	0.7	
Bowdon	2792	2840	850	3.34	45	15.8	28	13.3	5	1	2	1	14	15	111	2	0.7	0.7	
Bredbury and Romiley—	2901	2901	2536	1.50	102	26.1	61	15.6	11	9	2	2	26	11	107	3	0.7	2.0	
Bredbury	1920	1920	1189	1.61	45	23.4	25	13.0	3	5	3	...	7	7	66	4	0.5	1.4	
Romiley	1662	1729	1555	1.11	88	19.0	19	11.0	3	...	1	1	9	5	90	1	0.5	1.4	
Bromborough	1382	1382	2911	0.47	43	31.1	22	15.9	8	...	...	...	1	3	10	186	2	0.7	0.7
Buglawton	7783	7995	5812	1.37	200	25.0	113	15.8	11	...	...	...	4	33	30	140	6	0.8	0.8
Cheadle and Gatley	2270	2270	589	3.85	57	25.1	36	15.8	191	70	13	25	88	67	230	58	3.2	2.7	
Chorley	17408	17700	1412	12.53	525	29.6	384	21.6	15	9	8	8	18	12	181	7	2.4	2.7	
Dukinfield	2895	2895	2085	1.38	93	32.1	60	20.7	24	4	6	2	8	14	212	9	2.6	1.1	
Hollingworth	3329	3329	331	10.05	113	33.9	53	17.4	...	...	...	...	...	...	...	...	0.3	0.3	
Hoole	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Hoylake and West Kirby—	4076	4478	1514	2.95	195	27.1	63	14.0	19	11	3	8	15	12	123	3	1.1	1.1	
Hoylake	2469	2713	525	5.37	47	17.3	47	17.3	4	2	2	4	23	12	73	2	0.3	0.3	
West Kirby	4935	5450	4975	1.24	137	25.1	53	9.7	10	8	...	3	23	21	141	6	1.2	1.2	
Lymm	4844	4930	3033	1.61	108	21.5	66	18.3	15	8	7	3	25	17	164	17	0.7	0.7	
Marple	8706	4500	252	17.85	182	40.4	90	20.0	30	11	3	...	20	13	267	10	3.0	3.0	
Middlewich	8370	3270	1084	8.01	112	34.2	77	18.8	45	15	7	7	85	32	172	20	2.6	2.6	
Mottram	7412	7500	703	10.60	261	34.8	141	14.9	13	6	1	1	21	12	97	10	2.7	2.7	
Nantwich	3377	3617	2360	1.10	134	37.0	391	23.7	183	56	12	20	101	69	195	23	1.4	7.1	
Neston and Parkgate	14914	16500	1758	9.38	581	41.2	527	26.2	188	68	17	32	148	79	169	13	1.3	1.3	
Northwich	20050	20050	1179	17.00	230	23.0	133	13.3	39	15	10	10	27	82	169	13	0.8	0.8	
Runcorn	9644	10000	2006	4.98	213	35.6	91	15.1	23	9	1	2	20	26	108	5	1.8	1.8	
Sale	5824	6000	2694	2.22	98	36.1	41	15.1	10	1	1	1	11	9	102	5	2.5	2.5	
Sandbach	2702	2710	6194	0.43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Tarporley	14839	15950	680	19.21	570	35.7	308	19.3	88	41	18	20	95	51	145	41	2.5	2.5	
Wallasey—	16823	17850	952	17.66	463	26.6	294	16.9	71	24	5	20	92	87	153	32	1.8	1.8	
Poulton-cum-Seacombe	2067	2200	1596	1.37	75	34.0	39	17.7	12	...	...	...	14	10	173	8	0.6	0.6	
Liscard	6344	6344	5103	1.24	184	29.0	89	14.0	21	7	4	4	28	25	114	11	1.7	1.7	
Wallasey	10440	10500	5780	1.83	407	38.4	184	17.8	55	17	5	11	51	35	159	23	2.4	2.4	
Wilmslow	1235	1235	1323	0.93	33	26.7	16	12.9	1	2	1	1	6	5	30	1	0.8	0.8	
Winsted	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Yeasdaley-cum-Whaley	470	487	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Convalescent Hospital & Royal Asylum, Cheadle	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Chester Union Workhouse, Hoole (less proportion not belonging to County)	563	488	...	...	17	...	41	...	...	3	...	3	5	10	20	...	6	...	
	208095	215970	66371	3.25	6019	30.7	3886	18.4	1181	462	151	219	1158	865	156	524	2.4	2.4	
RURAL DISTRICTS.																			
Altrincham—Altrincham	13114	13755	14765	0.93	324	23.5	216	15.7	52	23	6	12	72	51	160	17	1.2	1.2	
Lymm	8990	3462	14497	0.23	85	24.5	47	13.5	7	4	7	2	16	11	82	2	0.5	0.5	
Knutsford	8304	8533	22570	0.37	211	24.7	177	20.7	25	9	7	2	64	66	118	15	1.7	1.7	
Wilmslow	4487	4750	10475	0.45	126	26.5	88	18.3	19	10	9	6	19	25	150	11	2.2	2.2	
Ashton-under-Lyne	2576	2530	13615	0.19	77	23.2	65	24.7	12	14	2	6	25	6	155	15	5.7	5.7	
Birkenhead	456	472	2043	0.23	2	4.2	5	10.6	...	...	...	...	...	...	...	...	...	...	
Birkenhead	10680	8243	35377	0.25	228	25.4	142	15.8	23	10	10	8	44	47	100	15	1.6	1.6	
Chester	3000	3000	14912	0.20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Congleton—Church Hulme	3000	3000	14912	0.20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Congleton	1181	1181	7888	0.14	429	29.0	151	18.2	7	1	1	1	4	4	107	4	3.5	3.5	
Sandbach	10286	10689	10598	0.54	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Drayton-Tittenley	34	87	581	0.05	3	61.8	0	...	...	...	...	...	...	...	...	...	...	...	
Drayton-Tittenley	2260	2260	2464	0.91	67	25.2	34	15.0	9	2	7	2	21	23	67	5	1.6	1.6	
Hayfield-Disley	2955	3002	18822	0.22	74	24.6	60	19.9	5	...	...	...	...	...	...	...	...	...	
Macclesfield-Alderley	2846	2976	7814	0.36	68	23.6	50	17.3	5	3	5	2	17	19	60	4	1.4	1.4	
Bollington	2672	2672	17983	0.14	66	24.6	50	18.5	4	...	...	...	...	...	...	...	...	...	
Gawsworth	4969	5045	13667	0.36	143	28.3	99	19.6	...	...	...	...	...	...	...	...	...	...	
Prestbury	2057	2104	14274	0.14	47	23.3	40	19.0	25	14.6	3	3	...	...	...	...	...	...	
Rainow	1780	1778	12954	0.13	34	19.0	25	14.6	3	3	...	...	...	...	...	...	...	...	
Sutton	10663	10890	81145	0.16	101	28.1	72	20.4	17	4	4	5	1	20	17	47	1	0.1	0.1
Nantwich—Crewe	3538	3592	21500	0.20	84	26.4	44	13.8	4	1	1	1	5	23	35	26	8	1.4	1.4
Nantwich	3105	3179	15945	0.20	154	27.0	87	15.3	18	4	2	5	36	29	159	14	1.6	1.6	
Bunbury	5597	5684	30168	0.18	108	35.7	192	17.6	49	20	13	5	36	29	159	14	1.6	1.6	
Wrenbury	8060	8613	17680	0.76	810	37.1	143	17.1	68	11	7	7	31	24	203	9	2.5	2.5	
Northwich—Weaverham	7081	8352	10891	0.74	324	37.1	143	17.1	68	11	7	7	31	24	203	9	2.5	2.5	
Northwich	8080	8083	17680	0.48	308	35.7	192	17.6	49	20	13	5	36	29	159	14	1.6	1.6	
Over	3083	3073	13472	0.24	108	38.4	52	16.8	9	7	4	2	14	16	87				







Showing deaths from subjoined causes during the year ending December 31st, 1893, classified according to Localities, Ages and Diseases.







TABLE III.—INFECTIOUS SICKNESS.

Showing new cases notified and new cases removed to Hospital during the year ending December 31st, 1893, classified according to Localities, Ages and Diseases, and giving particulars as to compulsory notification of Infectious Diseases and Hospital Provision.

SANITARY DISTRICTS.	AGES.	New cases coming to the knowledge of the Medical Officer of Health in each Locality.										Number of such cases removed from their homes for treatment in Hospital.										IS COMPULSORY NOTIFICATION ACT ADOPTED?	Is Hospital for Infectious Diseases provided?						
		Small-pox.	Scarlatina.	Diphtheria.	Measles or Croup.	FEVER.					Typhus.	Cholera.	Erysipelas.	TOTAL.	Small-pox.	Scarlatina.	Diphtheria.	Measles or Croup.	FEVER.					Typhus.	Cholera.	Erysipelas.	TOTAL.		
						Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Purpura.									Typhus.	Enteric or Typhoid.	Continued.							Relapsing.	Purpura.
Municipal Boroughs.																													
Congleton	Under 5	18	2										20														No	Cottages provided for Small-pox	
	5 upwards	11	2										18														No	Detached house provided for Small-pox	
Cress	Under 5	34	4										39														Yes	Yes	
	5 upwards	96	3										121	2													Yes	Temporary "Ducker" hospital provided	
Hyde	Under 5	41	62										149	7	28	7				3							Yes	No. Hyde Hospital used	
	5 upwards	95	2										97		17												Yes		
Macclesfield	Under 5	155	3										180	6	51												Yes		
	5 upwards	12	8	1									24		58	14											Yes		
Stalybridge	Under 5	14	33	4									16		98												Yes		
	5 upwards	29	495	90	4								20	746	29	96	7				3							135	
Other Urban Districts.																													
Altrincham	Under 5	32											32		32												Yes	Yes	
	5 upwards	67	1										9		80												Yes	Yes. Warral Joint Hospital at Spital	
Higher Bevington	Under 5	1	3										2	7													Yes	Yes. Warral Joint Hospital at Spital	
	5 upwards	6	4										1	7													Yes	Yes. Ditto.	
Lower Bevington	Under 5	6	1										7														Yes	Yes.	
	5 upwards	15											14							2							Yes	No	
Bollington	Under 5	14											7		22												Yes	No	
	5 upwards	1											1														Yes	No	
Swadlow	Under 5	7											9							1							Yes	No. Altrincham Hospital used	
	5 upwards	8	2										13		27												Yes	No. Hyde Hospital used	
Reddish and Romiley—Reddish	Under 5	13	2										15														Yes	No. Hyde Hospital used	
	5 upwards	11											3	27	4												Yes	No. Hyde Hospital used	
Romiley	Under 5	4											2														Yes	Yes. Warral Joint Hospital at Spital	
	5 upwards	1											1														Yes	No	
Bromborough	Under 5	1											2														Yes	No	
	5 upwards	1											1														Yes	No	
Baginbun	Under 5	1											2							1							Yes	No	
	5 upwards	1											1														Yes	No	
Chaselm and Gt. Gt.	Under 5	1	5										7		10												Yes	No. Macclesfield Hospital used	
	5 upwards	1	44	3									12	64	1	29				2							Yes	No. Macclesfield Hospital used	
Chorley	Under 5	1											7		10												Yes	No. Macclesfield Hospital used	
	5 upwards	1											1														Yes	No	
Dakinfield	Under 5	16	3	2									1	23													Yes	No. Hyde Hospital used	
	5 upwards	2	54	18									4	103	2												Yes	No. Hyde Hospital used	
Mollingsworth	Under 5	1	5										1	30													Yes	No. Hyde Hospital used	
	5 upwards	10	3										1	3	10												Yes	No. Hyde Hospital used	
Wyle	Under 5	3	8										3	25	3					2							Yes	No. Chester Infirmary used	
	5 upwards	10											8	10													Yes	Yes. Warral Joint Hospital at Spital	
Wylake and West Kirby—Wylake	Under 5	26	22										54		54												Yes	Yes. Warral Joint Hospital at Spital	
	5 upwards	3											1														Yes	No	
West Kirby	Under 5	13	2										15		17												Yes	No	
	5 upwards	16	10										28	16													Yes	Hospital extemporized for Small-pox	
Lyons	Under 5	8	3										12		14												Yes	No	
	5 upwards	8	3										1														Yes	No	
Morphe	Under 5	88	3										17	123													Yes	No	
	5 upwards	4	1										1	6													Yes	No	
Mottam	Under 5	9	2										1	16													Yes	No	
	5 upwards	3	13	4									5	26	2												Yes	No	
Nantwich	Under 5	2											2	14													Yes	Yes. Warral Joint Hospital at Spital	
	5 upwards	26	1										27							3							Yes	No	
Newton and Parkgate	Under 5	5	100	4									7	184	3												Yes	No	
	5 upwards	144	78	36	1	1	82	142					35	546	109					34							Yes	No	
Runcorn	Under 5	22	2										8	72	1	3											Yes	Yes	
	5 upwards	1	62	1									5	4													Yes	No	
Sale	Under 5	3											4														Yes	Yes	
	5 upwards	1											1														Yes	No	
Sanbach	Under 5	3	1										4														Yes	Yes	
	5 upwards	12	2										14														Yes	No	
Tarporley	Under 5	1											1														Yes	Yes	
	5 upwards	1											1														Yes	No	
Wallasey—Foulton-cum-Seacombe	Under 5	1											1														Yes	Yes	
	5 upwards	1											1														Yes	No	
Widnes	Under 5	48	17										13	145						23							Yes	No	
	5 upwards	1											1														Yes	No	
Widnes	Under 5	1											4							1							Yes	No	
	5 upwards	1											1														Yes	No	
Widnes	Under 5	3	222	3									32	269	1												Yes	No	
	5 upwards	5											5														No	No	
Yearley-cum-Whaley	Under 5	201	1234	181	19	2	328	142					247	2381	159	196	7										Yes	No	
	5 upwards	5											5														No	No	
Rural Districts.																													
Altrincham	Under 5	6	193	18									201		201												Yes	No	
	5 upwards	4	1										6		6										</				







