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County Palatine of Chester

REPORT

OF THE

Medical Officer of Health

FOR THE YEAR 1904,

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

PRESENTED TO THE

PUBLIC HEALTH COMMITTEE

OF THE COUNTY COUNCIL,

July 14*th*, 1905.

CHESTER:
PHILLIPSON & GOLDER, PRINTERS, EASTGATE ROW AND FRODSHAM STREET

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REPORT

OF THE

Medical Officer of Health

For the year ending December 31st, 1904.

To the Public Health Committee of the County Council

of the County Palatine of Chester,

and to the Members of the County Council.

Report of the Medical Officer of Health,

For the Year ending December 31st, 1904.

The Census of 1901 was taken on April 1st. A full Report of the Census of the County of Chester, containing a detailed and final examination of the Census Returns, as tabulated at the Registrar-General's Office, was issued in the Autumn of 1902. All the Census figures used in the preparation of the Report of the County Medical Officer of Health for the year 1901, were from the Census Preliminary Report, dated May 23rd, 1901, and a Preliminary Abstract issued therewith. All the Census figures used in the preparation of the Report of the County Medical Officer of Health for the years 1902 and 1903, were from the full Report of the Census of the County of Chester, the summary to which is dated August 10th, 1902. All the Census figures to be used in the preparation of this Report for the year 1904, will be from the same full Report of the Census.

The Ancient or Geographical County of Chester, which is a County Palatine, contained according to revised returns furnished by His Majesty's Ordnance Survey Department, an area of 657,783 statute acres. At the date of the Census in 1901, its population numbered 815,099 persons. In 1801 the population was 192,305; it has, therefore, increased during the century more than four-fold.

The Registration County contained, at the date of the Census in 1901, an area of 644,143 statute acres, and a population of 792,913.

The Administrative County.—The area and population of the Administrative County and the three County Boroughs, at the date of the Census in 1901 are shown in the following statement:—

	Area in Acres.	Population Census, 1901.
Administrative County and three County Boroughs	654,825	827,191
Deduct—		
County Borough of Birkenhead ...	3,848	110,915
County Borough of Chester	2,862	38,309
County Borough of Stockport* ...	2,197	78,897
Administrative County	645,918	599,070

The increase in the population of the Administrative County, since 1891, apart from the County Boroughs, was shewn by the Census of 1901 to be 63,126, or 11.8 per cent.; in the County Boroughs it was 20,896, or 10.1 per cent.

The Census population of the Municipal Boroughs, the other Urban Districts, and the Rural Districts in the Administrative County, and the increase or decrease in the several Boroughs and Districts is conveniently shown in tabular form as follows:—

Municipal Boroughs.	Population Enumerated, 1901.	Increase or Decrease of Population between 1891 and 1901.		Percentage of Increase or Decrease between 1891 and 1901.	
		Increase	Decr'ase	Increase	Decr'ase
Congleton	10707	...	37	...	0.34
Crewe	42074	9300	...	28.37	...
Dukinfield	18929	1544	...	8.88	...
Hyde	32766	2096	...	6.83	...
Macclesfield	34624	...	1385	...	3.84
Stalybridge	27673	890	...	3.32	...
6 Municipal Boroughs	166773	12408	...	8.03	...

* It is convenient in considering Stockport as entirely in Cheshire.

Other Urban Districts.	Population Enumerated, 1901.	Increase or Decrease of Population between 1891 and 1901.		Percentage of Increase or Decrease between 1891 and 1901.	
		Increase	Decr'ase	Increase	Decr'ase
Alderley Edge ...	2856	575	...	25.20	...
Alsager	2597	685	...	34.82	...
Altrincham	16831	4391	...	35.29	...
Ashton-upon-Mersey .	5563	1329	...	31.38	...
Higher Bebington ...	1540	119	...	8.37	...
Lower Bebington ...	8398	3182	..	61.00	...
Bollington	5245	...	90	...	1.68
Bowdon	2788	...	4	.	0.14
Bredbury and Romiley	7107	1286	...	22.09	...
Bromborough ...	1891	151	...	8.67	...
Buglawton	1452	70	...	5.06	...
Cheadle and Gatley ...	10820	2568	...	31.12	...
Hale	4562	1987	...	77.16	...
Hazel Grove & Bramhall	9791	1923	...	24.44	...
Hollingworth ...	2447	...	448	...	15.47
Hoole	5341	1449	...	37.23	...
Hoylake & West Kirby	10911	4366	...	66.70	...
Knutsford	5172	529	...	11.39	...
Lymm	4707	...	288	...	5.76
Marple	5595	751	...	15.50	...
Middlewich	4669	699	..	17.60	...
Mottram	3128	...	142	...	4.34
Nantwich	7722	310	...	4 18	...
Neston and Parkgate ...	4154	577	...	16.13	...
Northwich	17611	2697	...	18.08	...
Runcorn	16491	...	3559	...	17.75
Sale	12088	2444	...	25.86	...
Sandbach	5558	...	266	...	4.57
Tarporley	2644	...	58	...	2.14
Wallasey	53579	20350	...	61.24	...
Wilmslow	7361	1017	...	16.03	...
Winsford	10382	...	58	...	0.55
Yeardsley-cum-Whaley	1487	252	...	20.40	...
33 other Urban Districts	262488	48794	...	22.83	...

Rural Districts.	Population Enumerated 1901.	Increase or Decrease of Population between 1891 and 1901.		Percentage of Increase or Decrease between 1891 and 1901.	
		Increase	Decre'se	Increase	Decre'se
Bucklow	19890	2097	...	11.78	...
Chester	10989	165	...	1.52	...
Congleton	12220	...	285	...	2.33
Disley	2827	567	...	25.08	...
Macclesfield	15775	...	121	...	0.76
Malpas	4488	...	136	...	2.93
Nantwich	23197	285	...	1.24	...
Northwich	22073	1119	...	5.34	...
Runcorn	23244	...	674	...	2.81
Stockport	2288	...	3	...	0.13
Tarvin	12614	...	89	...	0.70
Tintwistle	2105	...	471	...	18 24
Wirral	18099	...	530	...	2.84
13 Rural Districts...	169809	1924	...	1.14	...

In all cases of change of area between 1891 and 1901, the enumerated population in 1901 is compared with the enumerated population of the new area in 1891.

It is thus seen that the 6 Municipal Boroughs in the Administrative County, taken together, increased in population 8 per cent., although the population of 2 of these Boroughs decreased. This is, as a whole, a small increase for towns. The only Borough in which a really important increase took place in 1891-1901, was Crewe, where the population increased 28⅛ per cent.

The 33 other Urban Districts, taken together, show an increase in population of nearly 23 per cent. during the decennium, 1891-1901. In 9 of these Districts the population decreased; the decrease in the case of Runcorn being 17¾ per cent., and in the case of Hollingworth being about 15½ per cent. However, the remaining 24 Districts all show an increase; and in several of them the increase of population is remarkable. Thus, in Lower Bebington it was 61 per cent., in Wallasey upwards of 61 per cent., in Hoylake and West Kirby upwards of 66 per cent., and in Hale upwards of 77 per cent.

The population of the Rural Districts, taken together, increased little more than 1 per cent. in the decennium, 1891-

1901. In Bucklow the increase was 11¾ per cent., and in Disley 25 per cent. Still, of the 13 Rural Districts, 8 decreased in population during the decennium; the decrease in the case of Tintwistle being upwards of 18 per cent.

Population at Midsummer, 1904.—The population of the Administrative County as enumerated at the taking of the Census on April 1st, 1901, was, therefore, 599,070, and it was distributed as follows:—

6 Municipal Boroughs	166,773
33 other Urban Districts	262,488
13 Rural Districts	169,809

On November 9th, 1901, the Civil Parish and County Borough of Stockport was extended to include (1) part of the Civil Parish of Brinnington (Census population, 404), in Stockport Rural District, (2) part of the Civil Parish of Bredbury and Urban District of Bredbury and Romiley (Census population, 20), also (3) part of the Civil Parish of Cheadle and Urban District of Cheadle and Gatley (Census population, 2,904), and (4) part of the Civil Parish of Hazel Grove-cum-Bramhall and Urban District of Hazel Grove and Bramhall (Census population, 1857).

On April 1st, 1902, the Civil Parish of Compstall (Census population, 875) ceased to belong to Stockport Rural District, and became an Urban District. On the same day, the Civil Parish of Whitby (Census population, 4,082) ceased to belong to Wirral Rural District, and became Ellesmere Port and Whitby Urban District.

Thus, the population of the Administrative County of Chester was, owing to extension of Stockport County Borough, reduced by 5,185 persons—that is 4,781 persons from 3 Urban Districts, and 404 persons from a Rural District. The formation of 2 new Urban Districts has still further reduced the population of the Rural Districts by 4,957, this number of persons being transferred to the Urban Districts.

On September 19th, 1902, Stockport Rural District was again reduced, the part of the Civil Parish of Brinnington (Census population 98), yet belonging to Stockport Rural District, being transferred to Bredbury and Romiley Urban District.

All that remained in Stockport Rural District in 1903 was the Civil Parish of Handforth. This obtained Urban powers as the Urban District of Handforth in September, 1904. The formation of this new District reduced the population of the Rural Districts by 911, this number of persons being transferred to the Urban Districts.

The Census population of the area representing the Administrative County, in the middle of the year 1904, was therefore 593,885, and it is distributed as follows:—

6	Municipal Boroughs	166,773
36	other Urban Districts	263,673
12	Rural Districts	163,439

The population of the Administrative County in the middle of the year 1904, is estimated to have been 609,316, distributed as follows:—

6	Municipal Boroughs	172,998
36	other Urban Districts ...	268,198
12	Rural Districts	168,120

Estimates of population in the several Boroughs and Districts are made by the Medical Officers of Health. It will be observed that many Medical Officers of Health do not consider that the local population increased at all between April 1st, 1901, and Midsummer, 1904. Certainly, the estimates taken together (15,431 for three years and three months on a population of 593,885) is not excessive.

Area and Density of Population.—The area of the Districts in the Administrative County, amounts to 644,180 acres. At the date of the Census this area was 645,918 acres, and it was thus distributed:—

6	Municipal Boroughs	15,587 acres
33	other Urban Districts	79,419 ,,
13	Rural Districts	550,912 ,,

However, owing to the extension of the County Borough of Stockport, 196 acres were lost to Stockport Rural District, 192 acres were lost to Bredbury and Romiley Urban District, 726 acres were lost to Cheadle and Gatley Urban District, and 624 acres were lost to Hazel Grove and Bramhall Urban District; while 1,738 acres were lost to the Administrative County. Owing to Compstall (903 acres) having been made an Urban District, and to Ellesmere Port and Whitby (1261 acres) having been made an Urban District, Handforth (1,312 acres) having been made an Urban District, and to part of Brinnington (451 acres) having been taken from Stockport Rural District and given to Bredbury and Romiley Urban District, 3,927 acres were transferred from the Rural Districts to the Urban Districts. The area of the Districts in the Administrative County, in the middle of the year 1904, has been therefore thus distributed.

6	Municipal Boroughs	15,587 acres
36	other Urban Districts	81,805 ,,
12	Rural Districts	546,788 ,,

Thus, in the whole Administrative County there is less than one (0.94) person to an acre. In the 6 Municipal

Boroughs, taken together, there were 11.09 persons to an acre. In the 36 other Urban Districts, taken together, there were 3.28 persons to an acre. In the 12 Rural Districts, taken together, the proportion is 0.31 to an acre. The great difference in the density of population is very marked in the various Districts. Thus, in the Altrincham Urban District there are upwards of 26 persons to an acre, in Crewe upwards of 21 persons to an acre, in Wallasey upwards of 17 persons to an acre, and in Hoole upwards of 16 persons to an acre, while in many Rural Districts there is but 1 person to several acres.

Marriages.—Reference to the number of marriages used to be made in two or three Reports. In the Reports for 1904, the matter appears to be referred to once only.

At Crewe the marriage rate (the number of persons married during the year per 1,000 living) was 10.5 in 1904. In the seven years, 1897-1903, the Crewe marriage rate averaged 13.7. The local marriage rate is always interesting, and might have been given more frequently in Medical Officers' Annual Reports.

Births.—The number of births registered in the Administrative County in 1904 was 16,049. The birth-rate was, therefore, 26.3 per 1,000 living, which is low, but compares favourably with the County birth-rate (26.2), in 1901. The birth-rates per 1,000 living, were in some few instances fairly high, and in many instances very low. It will be seen in Table 1, that at Hoole the birth rate was 38.6, at Ellesmere Port and Whitby 37.9, at Lower Bebington 37.4, at Buglawton 35.1, at Winsford 32.3, and at Runcorn 31.4, whereas at Bowdon the birth-rate was only 11.4 per 1,000. The birth-rate in the Municipal Boroughs, taken together, was 25.8 per 1,000, in the other Urban Districts 27.9, in the Rural Districts 24.5, and in the Administrative, as already stated, was 26.3. In the whole of England and Wales the birth-rate for 1904 was 27 per 1,000 of the population, which is 0.5 per 1,000 below the rate of 1903, and lower than the rate in any other year on record. Compared with the average in the ten years, 1894-1903, the birth-rate in 1904 shows a decrease of 1.3 per 1,000. The birth-rate in the 76 great towns in England and Wales (representing in the aggregate, a population of 15,271,287) was 29.1.

Thus, during 1904, the birth-rate in Cheshire was 0.7 below the unprecedentedly low birth-rate of the whole country.

Deaths.—The number of deaths registered in the Administrative County in 1904 (excluding the deaths of persons not belonging thereto, and including the deaths of persons regis-

tered elsewhere belonging to the County) was 9,569. The death-rate was, therefore, 15.7 per 1,000 living. The natural increase of population (excess of births over deaths) during 1904 was 6,480. This does not compare favourably with a natural increase of 7,689 in 1903, or 7,101 in 1902, but is a little improvement on 6,321, the natural increase in 1901. There is a considerable difference in the death rates of the different Districts. They range from 21.2 in Runcorn, 20.4 in the Borough of Macclesfield, 20.2 in Middlewich, and 20.0 in Hoole, to 10.6 in Marple, and 7.4 in Hale. The death-rate in the Municipal Boroughs, taken together, was 17.5, in the other Urban Districts taken together, it was 15.9; and in the Rural Districts, taken together, it was 13.3. In the whole of England and Wales the death-rate for 1904 was 16.2 per 1,000 of the population, which is 0.8 per 1,000 above the death-rate in 1903. Compared with the average death-rate in the ten years, 1894-1903, the death-rate in 1904 shows a decrease of 1.0 per 1,000. The death-rate of the 76 great towns in England and Wales (representing in the aggregate a population of 15,271,287), was 17.2.

Thus, during 1904, the death-rate in Cheshire was 0.5 below the low death-rate of the whole country. During 1904, the death-rate of the Cheshire Boroughs was 0.3 above the death-rate in the 76 great towns in England and Wales.

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 1,000 of registered births. Here, again, great differences were recorded in different districts during 1904. The proportion was very large in Hollingworth Urban District (228 per 1,000), in Compstall Urban District (222 per 1,000), in the Borough of Stalybridge (210 per 1,000), in Runcorn Urban District (203 per 1,000), in Middlewich Urban District (200 per 1,000), and in the Boroughs of Dukinfield and Hyde (198 per 1,000). In some Urban Districts, as in Alsager (33 per 1,000), and in Marple and Yeardsley-cum-Whaley (60 per 1,000), the proportion was exceptionally low. The proportion in the Municipal Boroughs was 184, in the other Urban Districts 145, in the Rural Districts 104, and in the Administrative County 144. The proportion, during 1904, in the whole of England and Wales was 146 per 1,000 births, and in the 76 great towns in England and Wales (representing in the aggregate a population of 15,271,287), the proportion was 160.

Thus, in the year under review, the proportion of infants who died in Cheshire was 2 per 1,000 births less than in the whole country; and the proportion of infants who died in the Cheshire Municipal Boroughs was 24 per 1,000 births

more than in the 76 great towns in the kingdom. This is a fair record as regards the whole County, but it is a decidedly bad record as regards the Cheshire Municipal Boroughs.

The variation in weather conditions and the incidence of epidemics influence the general death-rate from year to year, and as surely increase or decrease the mortality among infants. However, the question to be considered for the whole of England and Wales, and for every County is not—Why did the infant-mortality rate rise in one year or fall in another year? but Why is the infant-mortality-rate always high in certain districts? The infant-mortality rate being high in a particular year may be due to the incidence of sun and rain, the passing of a wave of epidemics, and such recondite causes: but the infant-mortality rate being high year after year in some special district or part of a district is not to be explained in this ready way, so that no one can be made responsible. A high infant-mortality rate maintained year after year in any district, must be due to local insanitary conditions in that district, which it behoves the Local Authority to discover and remove.

The inquiry of practical importance is therefore—Which are the districts in Cheshire where a high rate of infant-mortality is maintained? The answer is obvious, and indeed has been given in previous Annual Reports. In 1904 it happened that the highest rates of infant-mortality were recorded in the following districts:—

	Deaths of Infants per 1000 births.
Hollingworth Urban District	228
Compstall Urban District	222
Borough of Stalybridge	210
Runcorn Urban District	203
Middlewich Urban District	200
Borough of Dukinfield	198
Borough of Hyde	198
Borough of Congleton	190
Hoole Urban District	188
Altrincham Urban District	183
Bollington Urban District	182
Borough of Macclesfield	178
Borough of Crewe...	159
Wallasey Urban District	159

The high rate of infant-mortality at Hollingworth was due to the exceptional prevalence of measles and whooping-cough in 1904. In the ten years, 1894-1903, the infant-mortality was equal to 145 per 1,000 births. The high rate in 1904 was, therefore, quite exceptional. There is no great significance in the high rate recorded in Compstall, where the population is only 880; the 4 deaths of infants registered

were respectively due to tubercular disease, pneumonia, convulsions, and marasmus.

The number of deaths of infants in Stalybridge in 1904 was 142. The number being so high is partly due to an epidemic of measles, which was the registered cause of 17 deaths, and 21 deaths ascribed to bronchitis or pneumonia, diseases which often follow measles. There were also 12 deaths from diarrhœa, and 16 from enteritis. However, 210 infants dying in the first year out of each 1,000 born is a very large proportion, and it seems to be increasing, for the proportion in the ten years, 1894-1903, averaged 206 per 1,000 born. On many occasions during 1904 the subject was considered by the Sanitary Committee. The Medical Officer of Health in his Report prints a copy of a handbill, on the Management and Feeding of Infants, which by the direction of the Sanitary Committee is given by the Registrar to each person registering a birth.

The number of deaths in Runcorn in 1904 was 110. Whooping-cough was epidemic, and caused the death of 8 infants. There were also 12 deaths due to tubercular disease, and 16 deaths due to premature birth. However, the chief cause of the mortality being so high was that 26 deaths resulted from diarrhœa. A high rate of infant-mortality has prevailed in this town for many years. In 1903 it was only equal to 156 per 1,000 births, but the average infant-mortality for the nine years, 1893-1902, was 194 per 1,000 births. The high average is apparently due largely to the defective drainage of a portion of the town. The remodelling of the drainage arrangements had been in hand since 1900, and difficulties, at one time thought to be insurmountable, have been overcome.

The high infant-mortality in Middlewich in 1904 was quite exceptional, about one-third of the deaths being due to premature birth. In 1894-1903 the deaths of infants averaged 151 to each 1,000 born.

In the Borough of Dukinfield the rate of infant-mortality has been increasing during the past 3 years—it was 194 per 1,000 births in 1903, and 184 per 1,000 births in 1902. However, the records in 1902-1904 show considerable improvement on the ten years, 1892-1901, when the annual number of deaths of infants was equal to 228 per 1,000 births. In the Borough of Hyde the rate of infant-mortality in 1904 was higher than in 1903 (173 per 1,000 births), and 1902 (186 per 1,000 living). But here, also, the records in 1902-1904 show considerable improvement on the ten years, 1892-1901, when the annual number of deaths of infants was equal to 209 per 1,000 births.

There are, therefore, three Districts (all Boroughs) again reporting high rates of infant-mortality, which have been mentioned in many previous Annual Reports, as recording the highest infant-mortality rates. It may be interesting to inquire as to what steps were taken to bring about the reduction manifest when the record of 1902-1904 is compared with the record of 1892-1901.

In the Report from the Borough of Stalybridge, the cause of the prevalence of so high a death-rate among infants is not explained, but it is noted that this death-rate was not high (100 per 1,000 births) in Millbrook Ward in 1904, and that in this Ward is not high ordinarily. So long ago as 1899 the Sanitary Committee recognising that the high death-rate among infants was largely dependent on improper feeding and unskilled management, issued a paper of instructions on the management and feeding of infants, and distributed it. In the Reports for 1900, 1901, and 1902, it was not stated that anything further had been done. In the Report for 1903 it is stated that the Town Council have accepted a tender to erect a destructor, and that plans and specifications for this are being prepared, and when ready will be sent to the Local Government Board with an application for sanction to borrow the money required for its erection. It is also stated that the Sanitary Committee have decided to build a small disinfecting house to hold a steam disinfector, and a bath-room, to afford facilities for the thorough disinfection of persons exposed to infectious disease and their clothing. This is satisfactory certainly, but something more is needed Steps should be taken for the conversion of the midden-privies which exist so extensively in this Borough, for the improvement of the condition of the River Tame, which for a number of years has been "little better than an open sewer." A hospital for the isolation of infectious patients who cannot be isolated at home, is also required. As there are large factories for cotton spinning, etc., in Stalybridge, employing young married women, this Corporation would do well to do what St. Helens has done and provide working mothers with humanized and sterilized milk for their infants.

In the Borough of Dukinfield the cause of the prevalence of so high a death-rate among infants has been fully discussed, and the Medical Officer of Health prepared a special Report upon the subject, a printed copy of which was kindly supplied to every Member of the County Council. The conditions under which the local community live admit of improvement in many directions. Here is the open ashpit-privy taking up a portion of the very limited space in the domestic back yard of many a home; and in this receptacle rubbish, decomposing animal and vegetable house refuse and human excreta are carefully stored. For other houses pail-

closets are provided, but this is merely another arrangement for storing excreta close to dwelling-houses, though the amount stored is not so great and the receptacles are more frequently emptied. For yet other houses water-closets are provided, which it is at least satisfactory to note are no longer discharged into the river. In this town there is no destructor for the cremation of objectionable refuse; there is no apparatus for the disinfection of infected bedding by steam, and there is no hospital for the isolation of infectious cases. Then, the employment of the workpeople in the district at cotton mills, coal pits, and spindle works, etc., is not favourable to a high standard of health for parents and young people.

The Medical Officer of Health draws attention to the much reduced mortality in 1903, which is so far satisfactory, but he thinks that the cause of the high infant-mortality in the Borough is not yet grappled with. Of late he has been doing his best to get exact information in every case. On the death of a child under a year old, the house is visited, and enquiries are made as to (1) the sanitary condition of the premises, (2) the employment of the mother, and (3) how the child was fed. Getting full information, and making such improvements as this information suggests appears to be all that has been done.

In the Report from the Borough of Hyde, the Medical Officer of Health states "that it is the duty of the Sanitary Authority to make some effort to diminish this preventable waste of life which takes place from year to year." In his opinion the most important factor in causing the abnormally high death-rates is the ignorance of mothers, and those having charge of young children, of the proper method of feeding and managing them. He has made arrangements that, in future, immediately after the death of each infant a full investigation into the circumstances will be made. "Bad hygienic conditions are also most potent factors; infants kept in a dirty condition and surrounded by dirt cannot thrive and be healthy." The influence of insanitary conditions, he points out, is shown by the infant-mortality rate being much higher in the Township of Hyde than in Newton or Godley. "The employment of mothers in factories and workshops is responsible for some of the deaths certified as due to debility, a few weeks after birth." Attention is drawn to the Deputation from the County Council who visited Hyde, in 1901, to confer with the Sanitary Committee of the Borough relative to the steps necessary to be taken to reduce the infant-mortality. The recommendations subsequently received from the County Council are quoted, so far as they relate to Hyde, by the Medical Officer of Health in his Report, and he most earnestly endorses them. As a result of the receipt of these recom-

mendations it was decided to appoint a Female Sanitary Inspector, and one was selected who entered on her duties in July, 1902. She was a fully trained nurse, and held the Sanitary Institute certificate. Her duties included: (1) visiting from house to house as directed, and impressing on occupiers the importance of cleanliness, (2) visiting the mothers of newly born infants and giving instruction as to feeding and clothing the infants, (3) taking notes of sanitary condition of all houses visited, and reporting defects or nuisances observed, and (4) acting as inspector of workshops where women or girls were employed. In the Report for 1903 it was stated that the Female Inspector resigned her appointment in November to take up a similar post at Rochdale, and that no one had as yet been appointed in her place. Commenting upon what the Female Inspector had done while at Hyde, the Medical Officer of Health writes:—"It is difficult to say whether her work has had a beneficial effect. The death-rate is certainly much lower than usual, but it must be taken into account that there has been no outbreak during the year, of any of the infectious diseases which seriously affect infants. During the summer the rainfall was high and the temperature low, consequently there is an absence of the usual large number of deaths from diarrhœa. On the other hand, in work of this kind, which is largely educational, and involves the eradication of habits and customs long established in adults, it would be premature to expect any striking results after eighteen months." It is matter for regret that this Inspector did not succeed in convincing the Authority of the value and importance of the services she could render. However, the fact remains that in the two years which cover the period of this woman's labours the infant mortality sensibly decreased.

This Authority will do well to see that lists of insanitary property, from time to time submitted to them by the Medical Officer of Health, are promptly dealt with, that no houses unfit for habitation are occupied; that ashpit-privies are done away with, and that all decomposing refuse is regularly removed and destroyed by fire at the destructor provided.

The reduction in the infant-mortality rate in these three Boroughs, during three years, does not therefore appear to be due to any very exceptional action taken by the Borough Authorities. Instituting inquiries with reference to the death of every infant is, no doubt, very useful, and will make parents and guardians more careful; giving instruction as to the feeding of infants must also do good, and so must the putting in order of insanitary premises. The reduced mortality among infants in these Boroughs must be largely due to causes which reduced the infant-mortality all over the country of late, especially 1903.

The high rate of infant-mortality (190 per 1,000 births) recorded in the Borough of Congleton in 1904 is exceptional, though an equally high rate was also recorded in 1901. In the ten years, 1894-1903, the proportion of infants who died averaged only 137 per 1,000 births. In 1904 there were 16 of the deaths due to premature birth, 7 to tubercular disease, and 7 to diarrhœa or enteritis. In 1901 the high rate of infant-mortality was mainly due to the prevalence of diarrhœa and enteritis.

The high rate of infant-mortality (188 per 1,000 births) recorded at Hoole in 1904, is also exceptional. Ten out of 36 deaths were owing to premature birth. In the ten years, 1894-1903, the proportion of infants who died averaged only 119 per 1,000 births.

The rate of infant-mortality, which was 137 in 1903, 133 in 1902, and 141 in 1901, increased to 183 in 1904. Of the 79 infants who died in 1904, there were 15 who died of 17 who died of bronchitis or pneumonia. The infant-diarrhœa or enteritis, 12 who died of tubercular disease, and mortality in this town shows a fairly high average. In 1894-1903, it was equal to 161 per 1,000 births. There is no satisfactory explanation of this.

The infant-mortality at Bollington, though equal to 182 per 1,000 births in 1904, is not ordinarily high. In the ten years, 1894-1903, it averaged 126 per 1,000 births. One-third of the deaths of infants in 1904 was ascribed to premature birth.

The Borough of Macclesfield is one of the Districts where a high infant-mortality rate has been recorded for years. In 1901 it was equal to 180 per 1,000 births, and in the nine years, 1892-1900, it was equal to 181 per 1,000 births. In 1902, this mortality suddenly fell to 102, and in 1903 it was only 134. In 1904, the infant-mortality recorded was 178 per 1,000 births, that is nearly equal to the old average. The Medical Officer of Health has noticed that the infant-mortality increases in the warm weather, and that it is mainly due to conditions which favour the growth of such micro-organisms as cause putrefaction in infant foods. The reduction in 1902 was felt to be phenomenal, and the record for 1903 being as low as it was compared with the local average was doubtless also mainly due to a cool summer and other conditions beyond control. He appeals, as he did in his last two Annual Reports, to all interested in the welfare of child-life to support a Ladies' Public Health Society, which has been established by the ladies of Macclesfield, to visit the house where a baby is born, and take a kindly interest in the new arrival, directing the mother as to the care, feeding, and management of the infant, and the necessity for cleanly surroundings.

In the Borough of Crewe the infant-mortality rate varies considerably from year to year. In 1904 it was fairly high (160), in 1903 it was 145, in 1902 it was 132, and in 1901 it was 181. In the ten years, 1894-1903, this death-rate averaged 152 per 1,000 births. The Medical Officer of Health remarks that the principal causes of a high infant-mortality in Crewe are apparently (1) ignorance on the part of mothers as to the proper methods of infant feeding and management, and (2) insanitary conditions of the home and its environment. Employment of married women in factories, with its resulting early weaning and hand-feeding is not a cause of any importance in increasing infant-mortality at Crewe. In his opinion "the remedy lies largely in the education of the present generation of mothers by means of visits from Sanitary Inspectors (preferably Female Inspectors), the distribution of instructions as to feeding by the Registrar whenever a birth is registered etc., and also by courses of instruction in elementary hygiene and the feeding of infants, given to girls before leaving school. The Inspector of the Society for the Prevention of Cruelty to Children has given the Crewe Sanitary Authority much assistance by the supervision of a number of children suffering from neglect.

In Wallasey Urban District the infant-mortality rate was high in 1904, being equal to 159 per 1,000 births, whereas in 1894-1903 the infant-mortality rate averaged 140 per 1,000 births. "This marked increase," writes the Medical Officer of Health, "is very largely accounted for by the unusual prevalence and fatality of the three zymotic diseases—measles, whooping-cough, and diarrhœa." Nine infants died from measles, 21 from whooping-cough, and 50 from diarrhœa. There were also 44 deaths of infants ascribed to atrophy and debility. "The long-continued steady rise of temperature (during summer and autumn), together with the diminished rainfall bore fruit in the great increase of infantile diarrhœa, which proved so fatal a disease in 1904.

Nantwich, and Bredbury and Romiley, and some other Urban Districts, and Bucklow Rural District, arrange for the systematic distribution of tracts on the feeding and management of infants.

The Medical Officer of Health for Northwich Urban District (where the infant-mortality rate was 162 per 1,000 births in 1904, and averaged 179 in the ten years, 1894-1903) ventures to advance an opinion somewhat different from others. He thinks it unwise to assume that ignorance of parents is the main cause of a high rate of infant-mortality; for in Rural Districts this mortality is much lower than in Urban Districts, yet townfolk are as a rule better educated

and have greater facilities for getting help and advice. He points out that the struggle for existence is keener in towns, and that town infants are often ill-provided with fresh air and sunlight, because rents are cheapest in the more crowded courts and alleys. "Soothing syrup" and "Mother's friend" (narcotics injurious to infants) are more largely made use of by town parents. An infant is more in the way and more costly in town than in the country, and, unless some relaxation be made as regards taxation in favour of the man with a family, children will be less cared for. Strong drink, too, seems to paralyse the home life more in towns than in villages. Lastly, there is the poor supply (both in quality and quantity) of milk in towns.

Many Medical Officers of Health point out that greater prominence should be given in the elementary schools to the systematic teaching of personal and domestic hygiene; and that for those who have left school and become householders, a little instruction from lady-visitors who are mothers themselves will accomplish much.

To sum up briefly, it may be said that the main causes of a high rate of infant-mortality are:—

1. The employment in factories of those about to become mothers, and those who have been recently confined and should be nourishing their infants.

2. The infants of factory-employed mothers being badly cared for, and ill-fed during the absence of their mothers at work.

3. The environment of the infant being insanitary owing to the system of storing garbage and filth close to the house, and the absence of proper paving of yards leading to soil-pollution.

4. There being no provision for isolating infectious children or disinfecting infectious bedding, etc.

5. The ignorance common among working women as to how an infant should be fed, clothed and managed.

Memorandum on the Feeding, Care, and Management of Young Children.—During 1900, with a view of giving information on the above subject, the County Medical Officer of Health was instructed by the Public Health Committee to draft a leaflet for the instruction of the elder girls in Elementary Schools, and of mothers, and others having the care of young children. A leaflet was accordingly prepared and has been largely circulated. It was printed in full in the Annual Report for 1900.

Recommendations of Committee on Infant Mortality. The Sub-Committee of the Public Health Committee of the County Council appointed to confer with Representatives appointed by the Corporations of Dukinfield, Hyde, and Stalybridge, on the subject of the high infant-mortality within their respective Boroughs, held conferences in the Summer and Autumn of 1901, at Dukinfield, Hyde, and Stalybridge. This Sub Committee, subsequently reported that, having carefully considered that statements of the County Medical Officer in his Annual Reports as to the high rate of infant-mortality prevailing in the Municipal Boroughs of Stalybridge, Hyde, and Dukinfield, listened to statements and explanations from the District Medical Officers of Health and Representatives of the several Town Councils, and having been shown several workmen's dwelling-houses, sanitary and insanitary, besides other objects of interest from a sanitary point of view in the several Boroughs, they are satisfied that the Town Councils of the several Boroughs named are anxious to reduce the high death-rate among infants within their respective Boroughs, and while admitting that a great deal has been done with this object, they submit that it is only by a strict enforcement of all the powers possessed by the Corporations under the Public Health and other Acts, that any appreciable reduction in such death-rate is likely to result, and they accordingly recommend for the consideration of the Town Councils of the said Boroughs:—

1. That full information be obtained with reference to every infant whose death takes place before it has completed its first year, as in this way only can the actual facts as regards infantile mortality and its causes be ascertained. The kind of information needed is shown in the particulars, submitted by the Medical Officer of Health for Dukinfield, as to the deaths of infants under a year old from March to August, 1901. (Vide Table VI., Dr. Park's pamphlet of "Information and Statistics").

2. That having regard to Sec. 61 of the Factory and Workshop Act, 1901, the Borough Authorities would do well to enquire from time to time whether proper steps are taken by the Managers of local factories employing women to ensure that no woman or girl is permitted to begin or resume work in any of the said factories for at least one month after giving birth to an infant.

3. That the Town Councils of Stalybridge and Hyde should well consider the advantages of opening a depôt in each Borough, for the preparation and sale at a cheap rate, of humanized and sterilized milk, put up in bottles containing one meal each. Such depôts have been opened

at St. Helens and Dukinfield,* and with marked scccess in Liverpool.

4. That as the amount of yard space in the rear of many dwelling-houses in each of the three Boroughs is obviously too small, and could only have been allowed, through building bye-laws which are not up to date being in force, the Borough Authorities should take steps to make building bye-laws the provisions of which shall be generally in accord with the model bye-laws issued by the Local Government Board.

5. That as the storage of garbage and filth close to dwelling-houses is obviously insanitary, the Borough Authorities should take steps to obtain the conversion of privies into closets, flushed with clean water from separate service cisterns, and the getting rid of ashpits, providing in the place thereof galvanized iron ashbins with tight-fitting covers.

6. That the Borough of Stalybridge and Dukinfield should make proper provision for the isolation of infectious persons, the disinfection by steam of infectious bedding, and the cremation of refuse calculated to infect or pollute the air.

7. That as there is great ignorance among working women as to how infants and young children should be fed, clothed, and managed, and as to the urgent need for cleanliness, the distribution of handbills and pamphlets among them being not alone sufficient to remove such ignorance, each Borough Authority would do well to consider the expediency of appointing a Female Sanitary Inspector (one who has given evidence of her qualification) to visit the houses of the poor, under the direction of the Medical Officer of Health, and instruct them as regards the management of infants and young children, and generally in all matters relating to domestic hygiene.

The Sub-Committee, in conclusion, expressed the hope that as a result of the Conferences some good will be accomplished in reducing the high infant mortality in these Boroughs.

As bearing upon the subject of infant mortality, an Act of some importance, passed in 1897, may be referred to.

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* In June, 1900, the Corporation of Dukinfield opened a depôt for the sale at a cheap rate (2½d. for 9 bottles per day) of milk, prepared to imitate as nearly as possible mother's milk, and then sterilized, but the depôt remained open only eighteen months. The Medical Officer of Health regrets that it was found necessary to close it. Such a depôt is of great use if properly managed and conducted. Mothers did not avail themselves of this aid to feeding their infants with the enthusiasm expected.

The Infant Life Protection Act, 1897.—This enactment, to amend the law for the better protection of infant life, is practically identical with the Earl of Denbigh's Bill of 1896, as amended by the Select Committee of the House of Lords. Section 2 provides that "any person retaining or receiving for hire or reward in that behalf more than one infant under the age of five years for the purpose of nursing or maintaining such infants apart from their parents for a longer period than forty-eight hours, shall within the said forty-eight hours give notice thereof to the Local Authority," that is: in the County of London to the London County Council, in the City of London to the Common Council; in other places in England to the Board of Guardians; in Scotland to the Parish Council; and in Ireland to the Board of Guardians. It is made the duty of the Local Authority to provide for the execution of the Act within its district, and for that purpose to make enquiries from time to time. Local Authorities are empowered to appoint Male or Female Inspectors to enforce the Act, and they are to fix the number of infants under five years which may be retained or received in any dwelling. This Act came into force in January 1st, 1898.

Illegitimate Infants.—The number of those born who were illegtimate is stated in several Reports, and the proportion varies considerably. In the Borough of Macclesfield 8.1 per cent. of those born were illegitimate, in Knutsford 6.2 per cent., in Middlewich 6.6 per cent., in Winsford just under 6 per cent., in Northwich Urban District 5.5 per cent., in the Borough of Congleton just under 5.2 per cent., and in the Borough of Crewe 3 per cent. In Bucklow Rural District 3 per cent. of those born were illegitimate, and in Northwich Rural District the proportion was the same. None of these records, except that from Macclesfield can be considered high. It is in some Districts difficult to compute the exact proportion, so many of the illegitimate births take place in workhouses. In a few Reports the deaths of illegitimate infants are taken out separately. Such information enabling one to compare the mortality of illegitimate infants with the mortality of those born in wedlock, is of considerable interest. Thus, in Winsford, 20 per cent. of the illegitimate died within the year, and 13 per cent. of the legitimate; and in Northwich town 31 per cent. of the illegitimate died within the year, and only 15 per cent. of the legitimate.

Still-born Children.—There is only one reference to still-born children. In the Report for the Borough of Crewe it is briefly stated that the number of still-born infants brought to the cemetery for burial in 1904 was 75, and that in the fourteen years, 1890-1903, a number ranging from 30 to 86 were annually brought for burial. Thus, the still-born were

equal to 5.2 per cent. of the births registered in Crewe in 1904; in the fourteen years, 1890-1903, they were equal to 4.4 per cent. About 4 per cent. of births are still, ordinarily. The reason why so little information is given under this head is because still-births are not required to be registered, as they are in some countries. The still-born are not officially recognised, and anyone may bring the little body to a local sexton, usually with a certificate from a midwife or nurse stating that it was still-born, and have it interred in some informal manner as the sexton may think fit. This is not quite safe or seemly; and for the better protection of infant life it is desirable that every birth—still or quick—should be subject to compulsory registration. Though any person who buries the body of a deceased child as if it were still-born is liable, on conviction, to a penalty of £10, under the present system there appears to be nothing to prevent an infant who has lived a few minutes or a few hours being clandestinely conveyed to a nameless grave without the cause of death being certified or inquired into. It is also obvious that through there being no register for still-births concealment of birth is facilitated.

Mortality among Old People.—The proportion of old people among those who died in 1904, was fairly large, thus shewing that a considerable percentage of the population attained a ripe age before death removes them. Out of the 9569 deaths in the Administrative County of Chester in 1904, no less than 2574 were of persons of 65 years old and upwards, that is 26.9 per cent., which compares favourably with 26.75 per cent. in 1903. In the Municipal Boroughs the proportion was 23.35 per cent., in the other Urban Districts it was 25.47 per cent., and in the Rural Districts it was 34.84 per cent.

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

Uncertified Deaths.—The Deaths not certified by a qualified Medical Practitioner or made the subject of judicial inquiries before a Coroner are ordinarily indicated on the Registrar's returns, but in only a few Annual Reports is there any reference to the matter. In the few districts where information is given under this head, the figures recorded appear to indicate that the proportion of uncertified deaths in the County is small. In Knutsford there have been no uncertified deaths since 1900. In Middlewich there were none in 1904. In Winsford there was none, and in Bucklow Rural District none. Even in the Municipal Boroughs the number of uncertified deaths was very small in 1904. In Crewe there

were only three, in Macclesfield only three. It would be well if all Medical Officers of Health in the County would note all cases of death not certified by Registered Medical Practitioner and Coroner.

Coroners' Inquests.—In comparatively few of the Annual Reports are particulars as to Coroners' Inquests held during the year. At the Borough of Macclesfield in 7.07 per cent. of the deaths inquests were held, at Knutsford in 6.3 per cent. of the deaths inquests were held, at Hyde in 5.2 per cent. of the deaths inquests were held, at Winsford in 4.9 per cent. of the deaths inquests were held, and at Middlewich in 4.1 per cent. of the deaths inquests were held. Of the deaths registered in England and Wales in 1904, there were 6.5 per cent. in which inquests were held. As verdicts of the Coroners' Juries are ordinarily entered in the Registrar's returns, such information as is available might appropriately be included in their Annual Reports by all Medical Officers of Health in the County. Except as regards deaths due to injuries, the official inquiry is little worth recording. Such verdicts as "Found dead," "Death by visitation of God," "Natural Causes," and "Probably syncope," are not precise enough to be of use for purposes of classification.

Zymotic Diseases.—The 7 principal zymotic diseases are small-pox, measles, scarlet fever, diphtheria, whooping-cough, fever and diarrhœa, yet when the term "principal zymotics" is used, it is not always understood in the same sense. Some Medical Officers of Health include under the heading "diphtheria" all deaths registered as croup; others, deaths registered as diphtheria only. Again, some Medical Officers of Health include under the heading "fever," typhus, enteric, or typhoid, continued, relapsing, and puerperal fevers; others include the first four only, or the first three only. The wise course is to follow the practice adopted in making up the Registrar General's returns. In these summaries croup is included with diphtheria, except of course spasmodic croup, and the term "fever" includes typhus, enteric, simple continued fever, and pyrexia of uncertain origin.

In 1904 the number of deaths of persons belonging to the Administrative County from the undermentioned zymotic diseases was as follows:—18 small-pox, 295 measles, 61 scarlet fever, 92 diphtheria and membranous croup, 212 whooping-cough, 1 typhus fever, 66 enteric fever, 1 other continued fever, 31 puerperal fever, 381 diarrhœa, 145 enteritis, 26 erysipelas, and 73 epidemic influenza. Thus the number of deaths from the principal zymotic diseases in 1904 was 1,127, which is equal to a death-rate of 1.84 per 1,000 living. The principal zymotic death-rate during 1904, was 2.1 in the

Municipal Boroughs, 2.2 in the other Urban Districts, and 0.9 in the Rural Districts.

The death-rate for each of the seven principal zymotic diseases has been calculated for the Administrative County, for the whole of England and Wales, and for the 76 large towns in the Kingdom.

The results are as follows :—

1904.	Death-rate per 1000 living.		
	For Cheshire.	For the whole of England and Wales.	For the 76 large towns of England and Wales.
Small-pox	0·03	0·01	0·01
Measles	0·48	0·36	0·47
Scarlatina	0·10	0·11	0·12
Diphtheria and Membranous Croup ...	0·15	0·17	0·19
Whooping-cough ...	0·35	0·34	0·40
Fever	0·11	0·09	0·10
Diarrhœa	0·62	0·86	1·20
Seven Zymotic Diseases	1·84	1·94	2·49

This shows that the mortality from scarlatina, diphtheria, and diarrhœa, was lower in Cheshire than in the whole country, and in the large towns. The mortality from small pox, measles, and fever was higher in Cheshire than in the whole country, and in the large towns. The mortality from whooping-cough in Cheshire was just higher than in the whole country, but lower than in the large towns.

The mortality from the seven principal zymotic diseases, taken together, in 1904, was equal to a death-rate of 1·84 in Cheshire, 0·10 lower than the corresponding death-rate in the whole country, and 0·65 lower than the corresponding death rate in the large towns.

The practice in respect of four of the zymotic diseases (small-pox, measles, scarlet fever, and diphtheria), as expressly stated in many of the reports, appears to be to obtain the isolation of patients as far as practicable, and the disinfection of infected rooms, clothing, bedding, etc., to prevent children belonging to infected houses from attending school, and, if possible, from playing with other children, to endeavour to discover the cause of the disease, to have the premises examined and defects re-

medied, and, in case of small-pox, to try and induce the inmates of infected houses or any "contacts" to be vaccinated or re-vaccinated. The source of the milk supply and water supply are noted, and often companions of the patient are examined to see if they are suffering from infectious disease. In case of an outbreak of measles or scarlet fever, it is not unusual to advise the closing of the local schools, and occasionally an outbreak of diphtheria is the cause of this advice being given.

In the case of whooping-cough less appears to be attempted, but infected children are ordinarily kept from school, and, if possible, from playing with other children; while exceptionally the closing of local schools is advised owing to an outbreak of whooping-cough On typhoid fever being reported the practice is similar to that adopted in dealing with scarlet fever, or diphtheria, but the incidence of this disease is not so largely on school children.

At Dukinfield all cases of infectious disease are notified to the Librarian at the Free Library, so that no book may be lent out to those living in an infected house; and if a library book happens to be already in the house, it is disinfected or destroyed. In the town of Northwich, also, all cases of infectious disease are notified to the Librarian at the Free Library, and owing to this notification several books have been withdrawn from circulation which otherwise might have spread infection.

In Wallasey all cases of infectious disease are notified to the Free Public Library, and during 1900 a special chamber was provided in which infected books have been since disinfected by formic aldehyde.

Small-pox.—Many outbreaks of this disease occurred in 1904, making the whole year a period of exceptional anxiety. In all 213 cases were notified, of which 145 occurred in the Municipal Borough, 48 in the urban districts, and 20 in the other rural districts. Of the 145 cases in the Municipal Boroughs 10 proved fatal (6·9 per cent.) Of the 48 cases in the other urban districts 6 proved fatal (12·5 per cent.), and of the 20 cases in the rural districts 2 proved fatal (10 per cent.) Of the 213 cases in the Administrative County 18 proved fatal (8·45 per cent.)

The number of cases of small-pox and deaths therefrom, in Cheshire, during the twelve years immediately preceding 1904, was as follows :—

Year.	Cases notified.	Deaths.
1892	82	8
1893	312	32
1894	38	6
1895	18	2
1896	3	0

Year.	Cases notified.	Deaths.
1897	0	0
1898	0	0
1899	0	0
1900	25	5
1901	3	0
1902	78	2
1903	202	12
Annual average	63·4	5·6

Thus the notified cases in 1904 were nearly 3½ times the average number, and the deaths in 1904 were more than 3 times the average number. In 1904, as already stated, only 8·45 per cent. of the notified cases were fatal, whereas in 1892—1903 there were 8.83 per cent. of the notified cases fatal. In 1904, out of 213 cases notified, 203 (95.3 per cent.) were isolated in Hospital. Out of the 761 cases notified in 1892—1903 only 618 (81.2 per cent.) were isolated in Hospital. Thus there was a remarkable prevalence of small-pox in Cheshire in 1904, as there was in many parts (especially in smaller towns) of England and Wales. The case-mortality in 1904 compares favourably with that in 1892—1903 ; and the proportion of cases isolated in Hospital in 1904 was much greater than the proportion isolated in Hospital in 1892—1903.

It is remarkable how general was the spread of this disease in Cheshire during 1904. Outbreaks occurred in all the Municipal Boroughs but Crewe, in 15 of the 36 other Urban Districts, and in 5 of the 12 Rural Districts. The largest number of cases was reported at the Borough of Macclesfield (49 cases). Nearly as badly affected were the Borough of Hyde (46 cases), and the Borough of Dukinfield (36 cases).

Another remarkable fact is the important part frequently taken by tramps and common lodging-houses in spreading infection.

A fairly full account of each outbreak will be found in the appended summaries of Reports of Medical Officers of Health. However, a few particulars may be introduced here, more especially with the view of showing the causes of origin of some of the outbreaks, which cannot fail to prove interesting.

The outbreak in the Borough of Congleton was due to a young girl living in an over-crowded house, who went to a surgery one evening about an eruption on her face. Small-pox was recognised, and the patient was at once removed to Hospital. However, the eruption had been out three days, during which time the girl had been in constant contact with members of her family and several friends, and had been nursing her un-vaccinated sister, six months old. She had been employed at a pottery in Staffordshire, but when her disease was recognised had not been to work for five

days. The infant was vaccinated, and all the contacts who would submit to it were re-vaccinated, and the disease did not spread.

In the Borough of Dukinfield small-pox has been prevalent for two years. Notification was received of the first case on December 26th, 1902. There had not been a case in the town for some years. The patient, an adult, had apparently been infected in Lancashire. He was promptly removed to Hyde Hospital, where he recovered. The other members of the family were vaccinated and placed in quarantine for 14 days. The house was fumigated and disinfected, and the bedding, etc., was destroyed. Notwithstanding all these precautions this case proved the first of what may be called a small epidemic in 1903. The first case was admitted to Hospital on February 11th, and seems to have been infected by a mild unnotified case, and there seem to have been several of these, unattended by medical practitioners, and only discovered in the course of tracing infection. The Medical Officer of Health is convinced that if information could have been obtained sooner of these mild cases, the number of persons infected would have been considerably smaller. Not one of the 29 persons who were known to have small-pox in 1903 had been re-vaccinated. Four of the patients were unvaccinated, and of this number were the only cases (3) in which the eruption was confluent. The only patient who died in 1903 was an unvaccinated infant, five months old. Though no fresh cases were reported in 1903 after August, there seem to have been light unnotified cases which kept infection alive till January, 1904, when another case was reported. This case should have been notified earlier, but it was very mild, and when the owner of the mill where the patient worked notified the disease, there were 5 other cases in the house. From these 6 cases 5 others were infected, but notification was again too late to enable the Authority to check the spread of infection. In the first seven months of the year the number of notifications received were respectively as follows: 1, 8, 5, 7, 5, 2, 6, making 34 cases in all. The last case was reported on August 22nd. In 1904, as in 1903, not one of those attacked had been re-vaccinated. The only two patients who had a confluent eruption had not been vaccinated at all. The only patient who died from small-pox in 1904 was an unvaccinated woman, 45 years of age.

There were three distinct outbreaks at Hyde in 1904. In the first outbreak 3 cases were notified respectively on the 4th, 5th and 6th of January. These were 3 men who had been in the company of a man removed to Hospital suffering with small-pox on December 20th, 1903. In the second outbreak also there were 3 cases: they were notified respectively on the 26th, 29th, and 30th of January. These three cases were traced to an Insurance Canvasser, who visited the men at their houses, when he was suffering from small-pox. The third outbreak commenced on June 20th, and eventually included 40 cases. The initial case was the keeper of a common lodging-house in

Manchester Road. No history of infection could be traced, but it was reasonably assumed that the man must have been infected by some person of the tramp class who had passed through the lodging-house while suffering from the disease. The second case was discovered on July 12th,—a man who lived at the common lodging-house in Manchester Road. On making the daily inquiries at the house, information was received that this man had been complaining of feeling ill, but was at work. The Medical Officer of Health at once visited him, and found that he had small-pox, a discrete eruption having been out some days. Another case was notified on July 12th, but the source of infection could not be traced. The next case was notified on the following day, being a man who resided at the lodging-house in Manchester Road. The fifth case was notified on July 15th; it was a young woman who had been frequently visiting the house next door to the common lodging-house. On July 19th, notification was received that a woman, aged 79 years, had hæmorrhagic small-pox. No history of infection could be traced. The woman died four days after removal to Hospital. The seventh case was notified on July 22nd, —a man who had only been in the Borough four days. For several weeks he had been tramping through Lancashire towns in search of work. A case, notified on August 3rd, could not be traced. A case, notified on August 17th, was a young woman on a visit from Scotland, who arrived at Hyde six days before, and must have been infected outside the Borough. The next six cases were notified between August 20th and September 3rd. As all 6 patients worked in the same weaving shed, it was assumed that a missed case must have been among those employed in this shed. After search a young woman was discovered, who had undoubtedly just recovered from small-pox. Her face was pitted in several places, and elsewhere were recent stains of healed eruption. Eleven more cases were notified between September 3rd and 9th, which must of had a common source of infection. The first 6 had stayed at the same boarding-house at Blackpool during the 3rd week in August, which is the annual holiday week in Hyde. The names and addresses of all the Hyde people who had stayed at this boarding house during the holiday week were obtained. These were visited, and a young man was discovered who must have had small-pox, in the eruption stage, while at Blackpool. On September 6th his face showed the stains and pits of recent small-pox, and scabs had not entirely disappeared from his arms and legs. The remaining 4 cases of this series were infected by the same person after his return from Blackpool, 2 being members of his family, and 2 fellow workmen at a hat factory. The next cases were 2 unvaccinated children notified at a house in Market Street, on September 6th. When inquiries were made, it was found that there had been 3 missed cases in an adjoining house, by whom the children were infected. Two other cases notified on September 7th were also infected by the missed cases. The source of infection of a case notified on

September 10th was not traced. The 32nd case was notified on September 24th. The subject was a woman who worked at the hat factory above referred to, and refused to be vaccinated. The disease was severe (the eruption being confluent) and terminated fatally. The next case, notified on October 1st, could not be traced Two other cases, notified respectively on the 2nd and 3rd of October, were traced to the hat factory. The last case, notified on October 6th, could not be traced.

In the Borough of Macclesfield the outbreak of small-pox began on June 24th, a woman living in Lunt Hill being the first case. She had been lodging the previous fortnight in a common lodging-house at Stockport, where small-pox was epidemic. The attack was not severe, and permitted the patient to ramble about, with the result that she infected her sister and the boy living next door. The sister communicated the disease to her father and mother, all living in a dirty crowded neighbourhood. Infection soon spread from house to house up the squalid street. As most of the inhabitants of this quarter were anti-vaccinators, it was practically impossible to prevent an extension of the malady. The inevitable result was that infection spread outside the squalid neighbourhood, and amongst a better class who had in various ways been brought into contact with those who had the disease. Eventually a barber in West Macclesfield was attacked with confluent small-pox, and it was soon almost impossible to trace the source of infection. Some mild cases escaped recognition for a time or altogether, and the Medical Officer of Health believes there was much wilful concealment of cases, and deliberate misrepresentation as to the source of infection. Some cases, too, were so mild that medical advice was not sought, and small-pox was not suspected till some other person had been infected. The experience of the Medical Officer of Health has shown him the supreme importance of having cases promptly taken to Hospital and all contacts re-vaccinated. If any considerable delay occurs in carrying out either of these measures, later attempts to prevent the spread of infection are of little use. One of the most notorious and over-looked cases was that of a man who had the disease mildly, and did not consult a doctor until the pustules were beginning to dry up. He infected his wife, and having on several occasions visited a club, he there infected three men, of whom one died.

The three cases of small-pox notified at Bollington occurred in June and July. The wife of a man working at the bleachworks was found to have confluent small-pox, and was removed to the Hospital at Macclesfield, where she died. This woman's husband had been working while suffering from a rash which he thought of no account. He did not consult a doctor, but from his description of this rash and other symptoms he suffered from, he evidently had a mild attack of small-pox. His occupation at the works was to sort waste rags and pack them into bags, which were sent to Bury, and when empty returned. All the bags handled by the man

were destroyed. As a number of neighbours had been visiting and sitting with the patient, it was expected that other cases would have occurred, and shortly two more were notified, which were promptly removed to Hospital.

In the Borough of Stalybridge a woman was reported as suffering from small-pox on March 11th, and she appears to have been infected by her husband who assisted to bury a small-pox patient on February 11th. This man carried a coffin containing the body of a patient who died of small-pox from the Mortuary to the hearse and from the hearse to the grave. He was vaccinated on the following day successfully, and continued at work till February 20th. Two days after he complained of being very unwell and had a high temperature, but no rash could be seen. About this time the man seems to have infected his wife, for a fortnight afterwards she developed the disease. On the 8th of March she was prematurely delivered of a six months child, and the rash was very fully out on the next day.

Another Stalybridge man appears to have been infected by means of a pair of trousers he had been wearing which had been given him by a man suffering from the disease.

Out of five cases in Lower Bebington four were discovered in one house on January 12th, and appeared to have been infected by a missed case which should have been notified and dealt with in 1903. One of the four patients had never been vaccinated and had the disease severely. The fifth case, which was five months later, was traced to Liverpool.

At Bredbury a little girl 7 years old developed a mild attack of the disease, and was promptly removed to Hospital. The source of infection was not traced. She infected her father, who was 46 years of age and had not been vaccinated since infancy. He had a confluent eruption and died.

At Buglawton a man who worked in Manchester appears to have been infected there. He was not very prompt in consulting a medical man, so that before he could be sent to Hospital and the proper precautions could be taken, he had infected his wife, a son 24 years of age, and a three years old child.

At Hazel Grove and Bramhall, where 8 cases were reported in the latter half of May and June, the first case was infected at a common lodging-house in Stockport, where small-pox had been prevalent.

A case of small-pox occurred in the Workhouse at Knutsford in July, the subject being a man 61 years of age. He was employed as assistant in a tramp ward, and this suggested that he was probably infected by some passing tramp who had the disease without knowing it.

In Northwich Urban District the first patient suffering from small-pox was a tramp who came into the Workhouse, and was promptly removed to the Isolation Hospital at Marbury. The second case occurred in a common lodging-house, and the third in a private house. The three cases (all tramps) occurred at different times of the year and were not in any way connected.

At Wallasey a ship's engineer who came home from his steamer (lately arrived at a port in South Wales) immediately developed small-pox, having evidently been infected before leaving the ship.

At Wilmslow a woman was notified as suffering from small-pox on April 25th, and there was evidence that she had been infected from a tramp who was in town on the 11th. She was at once isolated in Hospital. A few days after the removal of the woman her infant died, with symptoms of small-pox just developing. The eruption was visible on the mother a week after parturition.

In Macclesfield Rural District one of three cases of small-pox was traced to Macclesfield, and two others were infected in Derbyshire.

At Nantwich Rural District the only case notified was a young man who had tramped from London, and had recently slept at a common lodging house at Newcastle-under-Lyne. The Medical Officer of Health believes that he was infected there.

The first case notified in Northwich Rural District was at Hartford. The woman sickened a few days after her return from a visit to Urmston (Lancashire), where she unquestionably contracted the disease. Another outbreak occurred at Little Leigh, three persons (in one cottage) were notified simultaneously. The disease had been contracted from relations living near, in Runcorn Rural District. About six weeks later 7 patients (related) were notified almost simultaneously at Barnton. The connection between the cases at Barnton and Little Leigh was clear.

At Runcorn Rural District two people in Dutton were infected with small-pox, after visiting at a house in Northwich Rural District, where "contacts" had been lodged, and the patients were promptly sent to the hospital at Moore. Later in the year the son of the hospital caretaker, who had persistently declined re-vaccination, had a very severe attack.

In Wirral Rural District the only person known to have had small-pox in 1904 was the assistant porter employed by the Wirral Joint Hospitals Board. Some small-pox cases from another District had been removed to the small-pox Hospital at Greasby, and this man assisted in burning the patient's bedding.

It is, therefore, certain that a principal means by which small-pox was spread in Cheshire in 1904 (as in 1903) was the common lodging-house, and the vagrants it shelters. Wandering men and women, who are a law unto themselves and scarcely subject to any control, are continually tramping from place to place and spending their nights in common lodging-houses or casual wards at the Workhouse. These communicate small-pox to one another and carry infection up and down the country. Many of them are not vaccinated, and very few are re-vaccinated, so that they are specially liable to be infected, and owing to their dirty habits and dirty clothing they readily carry infection from place to place. In this manner an ever present danger has been created, and will continue as a menace to the whole population, until some check be put on vagrancy.

Public houses, especially those in poor neighbourhoods, ordinarily frequented by travelling tinkers, knife grinders and pedlars, are also to some extent instruments for the spread of small-pox, because they harbour persons likely to prove infective.

Mothers' meetings and other local gatherings got up in connection with churches, trade societies, and workmen's clubs may also assist in the spread of infection, and should not be encouraged when small-pox or other serious infectious disease is prevalent.

Many cases of small-pox being so mild, so modified by vaccination, are also a source of danger. In several instances in 1904 the persons attacked had small-pox so lightly that they followed their employment the whole time. Such cases are not seen by a medical man, and consequently not notified.

Somewhat similar to these cases are those which are mistaken for chicken-pox. Unless this disease be notifiable in the District such cases are not reported if seen by a medical man, and it often happens that no doctor is called in. During 1904 some of the early cases in local out-breaks were first thought to be chicken-pox.

Short holidays in the warm weather, of a few days, excursions for the day, or week-end trips, had a share in the spread of small-pox in 1904, as they had in 1903.

The experience at Stalybridge draws attention to the possibility of a man having small-pox without showing any distinct eruption, and yet being able to convey infection.

The conveyance of infection, by means of waste rags (as at Bollington) to the person employed to sort and pack them, has occurred from time to time elsewhere.

As to the vaccination history of the various cases, in some of the Reports this is given with great fulness ; in others the record is

imperfect, and yet in other Reports it is missing. Hence a complete statement could not be prepared; but it is quite certain that a small proportion of those attacked had never been vaccinated, and that very few indeed had been vaccinated and re-vaccinated before they were infected.

The condition as to vaccination in respect of the 18 cases which proved fatal is given in some detail, and also some particulars as to the nature of the eruption, etc. The following tabular statement gives this information, and will at least show that the patients who had small-pox severely and died therefrom, are for the most part unvaccinated or imperfectly vaccinated.

No.	Sex.	Age.	Borough or District.	Vaccination Record.	Character of Eruption.
1	F.	45 yrs.	Dukinfield ...	Unvaccinated ...	Confluent.
2	F.	79 yrs.	Hyde ...	Said to have been vaccinated in infancy. No marks visible	Hæmorrhagic.
3	F.	Adult.	,, ...	Vaccinated in infancy. Refused re-vaccination	Confluent.
4	M.	45 yrs.	Macclesfield ...	Man stated he never was vaccinated. No marks visible	Very severe Confluent.
5	M.	60 yrs.	,, ...	Said to have been vaccinated in infancy. No marks visible	Severe Confluent.
6	F.	72 yrs.	,, ...	Said to have been vaccinated in infancy. No marks visible	Severe Confluent.
7	M.	58 yrs.	Stalybridge ...	Vaccinated in infancy, 2 marks	Confluent.
8	F.	29 yrs.	,, ...	Vaccinated in infancy, 4 marks	Confluent.
9	M.	6 m'nths	,, ...	Unvaccinated ...	Confluent.
10	M.	6 yrs.	,, ...	Unvaccinated ...	Confluent.
11	F.	70 yrs.	Bollington ...	Vaccinated in infancy only	Severe Confluent.
12	M.	46 yrs.	Bredbury and Romiley	Vaccinated in infancy only. Indication of it very slight.	Confluent.
13	M.	23 yrs.	Hazel Grove and Bramhall	Vaccinated in infancy only.	Confluent.
14	F.	34 yrs.	Knutsford ...	Vaccinated in infancy only.	Copious Confluent.
15	M.	75 yrs.	Sale ...	Vaccinated in infancy only.	Discrete.
16		A few days.	Wilmslow ...	Unvaccinated.	Just developing.
17	F.	61 yrs.	Northwich Rural ...	Vaccinated in infancy only. Little trace of any scars.	Confluent.
18		2 m'nths	,, ...	Unvaccinated.	Confluent.

It may be well here, before passing on to another subject, to state briefly what should be learned from these outbreaks.

Local Sanitary Authorities :

1. Should do all they can to promote efficient vaccination and re-vaccination.
2. Should be provided with sufficient Isolation Hospital accommodation for small-pox.
3. Should take steps to make chicken-pox notifiable.
4. Should arrange for the systematic inspection of all places frequented by tramps.
5. Should take such steps as are available for getting rid of insanitary property in which all infectious disease tends to spread.

Vaccination Returns, as made by the local Vaccination Officers, are given by the Medical Officers of Health for several districts. According to the return from the Borough of Crewe 80 per cent. of the children born in 1904 were successfully vaccinated at the end of the year, including those who died unvaccinated. This is a remarkably good record, as parents are allowed a period of six months in which to have their children vaccinated. The return from Dukinfield, which for many years has been far from satisfactory, showed much improvement in 1899-1902. In the latter year 70·4 per cent. of the infants who survived were successfully vaccinated at the end of the year. During 1903 the record was less satisfactory, as only 62·7 per cent. of surviving infants were vaccinated at the end of the year, and in 1904 the record was a little worse, as only 60·6 of the surviving infants were vaccinated at the end of the year. The return for Wallasey is made up differently. It relates to the children born in the year ending June 30th, 1904. Of these it is reported that by the end of 1904 there were only 1·9 of the 1620 infants born which escaped vaccination requirements. Reports from other smaller districts are as satisfactory. Perhaps the most convincing returns are those from the Medical Officer of Health for Bucklow Rural and Knutsford, Middlewich, and Winsford Urban Districts. As regards his Rural Districts, and the Urban Districts of Altrincham, Bowdon, Hale, Sale, Ashton-upon-Mersey, Lymm, Knutsford and Wilmslow, in the same Union, it is stated that 95·7 per cent. of the surviving children were successfully vaccinated, the corresponding per centage for the eight years preceding 1903 is nearly as satisfactory. During 1903 in the Middlewich Sub-District of Northwich Union (of which the town of Middlewich forms about two-thirds) 94·5 per cent. of the surviving children were successfully vaccinated, and during the eight years immediately preceding the per centage of children vaccinated was uniformly high.

In the Over sub-district of Northwich Union (of which

the town of Winsford forms more than three-fourths) 96·9 per cent. of the surviving infants were vaccinated in 1903, and in the seven years immediately preceding about 98 per cent. of the surviving infants were vaccinated. These are remarkable records, as it is not unreasonable to assume that the surviving children whose vaccination was medically postponed on certificate, and those removed and traced have been ultimately vaccinated in the same proportion.

The changes effected by the Vaccination Act, 1898, have been helpful in promoting vaccination, and objections to it are disappearing. The improvements which several of the provisions of the Act introduce into the machinery of vaccination administration have apparently appealed to the good sense of parents, so that the outcome has been a very marked increase in efficient vaccination. The small number of conscientious objectors to vaccination who obtained certificates exempting their children from the operation is referred to in several Reports. In Crewe, certificates of exemption were obtained for 1.46 per cent. of the infants born ; in Dukinfield certificates of exemption were obtained for 2.66 per cent. of the infants ; and in Wallasey certificates of exemption were obtained for 0.37 per cent. of the infants.

The Vaccination Act, 1898.—The main provisions of this Act are as follows :—

The period within which the parent or person having the custody of a child shall cause it to be vaccinated shall be six months from the birth of the child.

The Public Vaccinator of the District shall, if the parent or person having custody of the child so requires, visit the home of the child for the purpose of vaccinating it.

If a child is not vaccinated within four months after its birth, the Public Vaccinator of the District, after at least twenty-four hours' notice to the parent, shall visit the home of the child, and shall offer to vaccinate the child with glycerinated calf-lymph, or such other lymph as may be issued by the Local Government Board.

The Public Vaccinator shall not vaccinate a child if, in his opinion, the condition of the house in which it resides is such, or there is or has been such a recent prevalence of infectious disease in the district, that it cannot be safely vaccinated ; and in that case shall give a certificate of postponement of vaccination, and forthwith give notice of such certificate to the Medical Officer of Health for the district.

Notwithstanding any regulation of any lying-in hospital, etc., the parent of any child born in any such institution shall not be compelled to cause or permit the child to be vaccinated at any time earlier than the expiration of six months from its birth.

No parent or other person shall be liable to any penalty under Section 29 or Section 31 of the Vaccination Act of 1867, if within four months of the birth of the child he satisfies two Justices or a Stipendiary or a Metropolitan Police Magistrate, in Petty Sessions, that he conscientiously believes that vaccination would be prejudicial to the health of the child; and within seven days thereafter delivers to the Vaccination Officer for the district a certificate by such Justices or Magistrate of such conscientious objection.

This section shall come into operation at the passing of this Act; but in its application to a child born before the passing of the Act, there shall be substituted for the period of four months from the birth of the child four months from the passing of the Act.

An Order under Section 31 of the Vaccination Act of 1867 directing that child be vaccinated, shall not be made on any person who has previously been convicted of non-compliance with a similar Order relating to the same child.

No proceedings under Section 31 of the Vaccination Act, 1867, shall be taken against any parent or person who has been convicted under Section 29 of the said Act, on account of the same child, until it has reached the age of four years.

Persons committed to prison on account of non-compliance with any order or non-payment of fines or costs under the Vaccination Act shall be treated in the same way as first-class misdemeanants.

The Local Government Board may make rules and regulations with respect to the duties and remuneration of Public Vaccinators, whether under contracts made before or after the passing of this Act.

The Local Government Board may, by Order, if in their opinion it is expedient by reason of serious risk of outbreak of small-pox or other exceptional circumstances, require the Guardians of any Poor Law Union to provide vaccination stations for the vaccination of children with glycerinated calf-lymph or other lymph as may be issued by the Local Government Board, and modify as respects the area to which the Order applies, and during the period for which it is in force, the provisions of this Act requiring the Public Vaccinator to visit the house of the child otherwise than on request of the parent.

The Clerk of any Sanitary Authority which shall maintain a hospital for the treatment of small-pox patients shall keep a list of the names, addresses, ages and condition as to vaccination, of all small-pox patients treated in the hospital, such entries to be made on admission, and shall at all reasonable times allow searches to be made therein and upon

demand to give a copy of every entry in the same on payment of a fee of sixpence for each search and threepence for each copy.

Certain portions of the Vaccination Acts of 1867 and 1871 are repealed during the continuance of this Act.

The Act does not extend to Scotland or Ireland. The Act, except as therein specially provided, came into operation on January 1st, 1899, and remains in force for five years only, unless, in the meantime, that period be extended.*

Vaccination Order.—On October 18th, 1898, the Local Government Board issued a General Order rescinding all the previous Orders and Regulations relating to Vaccination, and prescribing amended Regulations under Section 6 of the new Act. The substitution of a system of domiciliary vaccination for stational arrangements considerably altered the duties of Public Vaccinators and added to their labours, so that a revision of their remuneration was rendered necessary. In the new regulations sums are mentioned which are to be the "minimum" fees payable by the Guardians to Public Vaccinators in respect of successful primary vaccination and re-vaccination, and to Vaccination Officers. The new regulations also prescribe that the visit of the Public Vaccinator to the home of a child shall be between 9 a.m. and 4 p.m., except by mutual arrangement; that at least 24 hours' notice shall be given by the Public Vaccinator of his intention to visit the home of a child, and that the visit shall (in the absence of any sufficient reason for delay) be made within two weeks after receipt of the request of the parent or notice from the Vaccination Officer.

Chicken-pox prevailed to a considerable extent in the Borough of Hyde, where 60 cases were notified, and in Runcorn Rural District where 47 cases were notified. In Lymm 8 cases of this disease were notified, and in Bromborough the death of an infant was registered as due to chicken-pox. In Macclesfield 2 patients, believed to be suffering from small-pox, were sent into Hospital, where it was found they had chicken-pox. A few cases occurred elsewhere, but little attention is paid to this disease, and it spreads through cases not being properly isolated. The Councils or Boroughs, and Districts would do well to add chicken-pox to the diseases required to be notified, as the Town Council of Hyde did, in February, 1903. There would be no difficulty in obtaining the approval of the Local Government Board. If chicken-pox were notified some effective steps could be taken to prevent it spreading, and in this way doubtless cases of modified

* This period has been extended.

small-pox might occasionally come to the knowledge of the Authority. Chicken-pox is characterised by an eruption which may closely resemble that of discrete small-pox, and as the two diseases may be confounded it is important that both should be notified. Moreover, chicken-pox is highly contagious, its infectivity being nearly equal to that of small-pox. As the age of maximum incidence is from three to four years, the disease may readily be communicated from pupil to pupil in Infant Schools.

Measles.—Cases of measles are not ordinarily reported to the Medical Officer of Health, and he seldom has any intimation of the presence of the disease till it proves fatal. The number of deaths from measles in 1904 in the Municipal Borough was 131, in the other Urban Districts 117, and in the Rural Districts 47; in all, 295. In 1903 the number was 60, in 1902 the number was 197, in 1901 the number was 89, in 1900 the number was 161, in 1899 the number was 207, in 1898 the number was 182, in 1897 the number was 363, in 1896 the number was 81, in 1895 the number was 247, in 1894 the number was 143, in 1893 the number was 149, and in 1892 the number was 162. The mean annual number of deaths from measles in the twelve years, 1892-1903, was, therefore, 170. Thus the mortality from measles in 1904 was higher than in any of the 12 years immediately preceding, except in 1897. The measles' death-rate of the whole County was equal to 0.48 per 1,000 living, as compared with 0.36 in the whole country. In Stalybridge the measles death-rate was equal to 1.68 per 1,000 living, and in a few other Districts it was exceptionally high, for example, in Macclesfield and Dukinfield.

A large proportion of the fatal cases of measles was complicated with bronchitis or pneumonia. As shewing how specially fatal this disease is among very young children, it may be noticed that out of the 295 deaths, 85 were of infants under a year old, 197 were of children a year old and under five years, while only 13 were of children five years old and upwards. The popular idea about measles appears to be that it is a malady, "all children must have, and the sooner it's over the better," and thus proper precautions for the patient's safety and to prevent the spread of infection are not taken. Of course, it is not true that all children must have measles. "If a child can be shielded from the infection of measles during the first five years of its life, its risk of subsequently acquiring the disease, with all grave possibilities in the way of pulmonary complications is enormously reduced."

Great responsibility rests on the Medical Officer of Health in advising whether schools shall be closed owing to

the prevalence of infectious disease. If this appears to be the best practical means of arresting an outbreak, it should, of course, be tried.

Measles are required to be notified in four districts—Alderley Edge, Ashton-upon-Mersey, Lymm, and Wilmslow.

Children are most liable to attack in the third, fourth, or fifth year of life, but the disease is most fatal in the second year of life; and more fatal in the first and third years than afterwards. Measles is therefore pre-eminently a disease of very young children. In most of the districts where fatal cases occurred (as in previous years) there was evidence that the mortality was associated with "catching cold," showing that this should be specially guarded against. Though it is certainly true that about 90 per cent. of the deaths from measles in Great Britain occur among those under five years of age, and about 98 per cent. among those under ten, no age (even advanced age) affords protection. A far larger number of cases occurring among children than among adults, appears due to the fact that few escape infection during childhood. The maximum mortality for measles is attained in England and Wales in December; the minimum is attained in September; and next to December the mortality averages highest in June. This seems to indicate that extremes of temperature (which are not ordinarily favourable to the health of young children) are specially injurious to those infected with measles or just recovered therefrom.

A great deal has been written and spoken in favour of making measles notifiable; but it is very doubtful if much would be accomplished by this. Measles is not spread by milk, or drinking water, or caused by sewer gas, and no form of inoculation will protect a child; therefore, there is no particular reason why it should be notified. Owing to the infectiousness of measles for three or four days before the appearance of the eruption, and consequently before the malady is recognised, brothers and sisters, and school-fellows susceptible have probably been infected before the patient can be picked out and isolated. Even if abundant free hospital accommodation were provided (and supplying accommodation for measles is scarcely contemplated in any district), for all who could not be properly isolated at home, so large a proportion of sufferers from measles are children of tender years, that parents would not generally consent to their removal.

To reduce enormously the mortality from measles, what is needed is not compulsory notification and hospital accommodation, but IMPROVED SANITARY ENVIRONMENTS FOR THE HOMES IN WHICH LITTLE CHILDREN ARE BROUGHT UP, AND THE BESTOWAL OF A LITTLE MORE CARE ON EACH CHILD ATTACKED. Ordinarily measles is a comparatively harmless malady in families comfortably off,

but among the poor it is often very fatal. The main difference is that well-to-do people's children have been reared in healthy homes, and are put to bed as soon as the disease is recognised, while poor people's children are reared in crowded, ill-ventilated homes, and are left to run about after the disease is recognised.

Finally, it is well to note that the mortality due to measles is not represented solely by those who are certified as dying from it or its immediate sequelæ, for the deterioration of health it produces renders children peculiarly liable to fatal attacks of tuberculosis.

Scarlet Fever, sometimes called scarlatina, is required to be notified throughout the country; thus more is known of the incidence of scarlet fever than of measles.

In all 2,427 cases were notified in the County during 1904, and out of these 1,076 (44.33 per cent.) were removed to hospital for isolation and treatment.

In the Municipal Boroughs, 714 cases were notified, and 381 removed (equal to 53.36 per cent.)

In the other Urban Districts, 1,149 cases were notified, and 558 removed (equal to 48.56 per cent.)

In the Rural Districts, 564 cases were notified, and 137 removed (equal to 24.29 per cent.)

In 1903 the proportion of notified cases of scarlet fever removed to hospital was 54.86 per cent., in 1902 the proportion of notified cases of scarlet fever removed to hospital was 36.57 per cent., in 1901 the proportion of notified cases of scarlet fever removed to hospital was 40.93 per cent., and in the nine years (1892-1900), the proportion of notified cases of scarlet fever removed to hospital was 20.4 per cent. Thus the record for 1904, though not as satisfactory as that of 1903, compares favourably with that of previous years. However, the proportion of cases removed to hospital does not appear to depend so much upon the need for removal as on the facilities offered. At Altrincham, where Lloyd's Fever Hospital is available, 93.75 per cent. of the notified cases of scarlet fever were removed. At Crewe, where there is an excellent hospital, 81.19 per cent. of the notified cases of scarlet fever were removed. At Hyde, where there has been an Isolation Hospital for years, 73.62 per cent. of the notified cases of scarlet fever were removed. At Wallasey, where there is an excellent Hospital, recently enlarged, 62.96 per cent. of the notified cases of scarlet fever were removed. At Macclesfield, where a temporary hospital is provided, 51.79 per cent. of the notified cases of scarlet fever were removed. In the Wirral Joint Hospital District, where good accommodation is avail-

able for seven Districts, 73.9 per cent. of the notified cases of scarlet fever were removed. However, at Dukinfield, where the Corporation depend on Hyde for hospital accommodation, no cases were removed out of 111; at Stalybridge, where no hospital accommodation for cases other than small-pox is arranged for, no cases were removed, though 80 were notified, and at the Borough of Congleton, where no hospital accommodation for cases other than small-pox is arranged for, no cases were removed, though 25 were notified. In many Reports the want of hospital accommodation for isolating initial cases is referred to.

The influence of schools in spreading scarlet fever is noted in many Reports, but school closing has not been resorted to as it used to be some years since. Again and again is reference made to the mildness of the disease, which in some instances led to cases not being recognised till they had infected others.

There are interesting notes in some Reports showing various ways in which it appeared that scarlet fever was spread, but there is more about school influence than anything else. In Crewe, the number of cases notified was larger than in any year since 1896, when the Infectious Disease (Notification) Act came in force in the Borough. The very mild type of the disease led to cases being entirely overlooked till others had been infected by them. In this town, also, an outbreak of German measles (a mild disease having a rash closely resembling that of scarlet fever) during the summer added greatly to the difficulties of diagnosis. At Dukinfield, where there were 111 cases, the Medical Officer of Health is of opinion that disease was spread from case to case, largely by means of the bran-like portions of skin shed by the patients and retained in their clothing and elsewhere. As "infective material may thus be active for months," he dwells on the importance of thorough disinfection of wearing apparel, bedding, etc. No steam disinfector is yet provided, though the question of obtaining one has often been "under consideration." The general mildness of this disease in 1904, is shown by there not being a single death therefrom in Hyde or Macclesfield, though in these two towns, taken together, there were 147 cases. Still the Medical Officer for Macclesfield points out that scarlet fever is capable of assuming a more malignant aspect, causing a high mortality, and leaving its victims permanently injured. At Wallasey, where scarlet fever was very prevalent in 1904, the cases were at first of a mild type, but at the end of the year there were many severe cases, the patients having bad throats and discharges from the nose and ears. In some mild cases it was not possible to diagnose the malady at once, and the only course was to remove the child from school, isolate it, and wait. The

Medical Officer of Health for the town of Runcorn, ascribes the spread of scarlatina there to the fact that children are allowed to be in the streets and to go to school when they are distinctly infective. In his opinion, children who have been away from school owing to infectious sickness should be returned to school with extreme caution. No recovered child should be received back to school till he produces a proper medical certificate that he may safely return. The Medical Officer of Health for Knutsford, Middlewich and Winsford Urban, and Bucklow Rural Districts, draws attention to the serious results which occasionally arise from unrecognised cases of scarlet fever. The first member of the family ill is thought to be suffering from some harmless complaint, and consequently no doctor is called in. It is only when the second case begins that suspicion is aroused that the disease may be infectious. The danger to the public of these cases is obvious. Children who are members of the family continue to go to school and to play with other children, the washing is still sent to the public laundry, and while the illness is going on no attempt is made to isolate a child who is thought perhaps to be merely suffering from an attack of indigestion. The rash is so very evanescent in some of these cases that unless specially searched for it is extremely apt to be overlooked.

There seems considerable doubt as to whether certain cases notified as scarlatina were not really diphtheria, and a case sent to Hospital at Knutsford as scarlatina, was found to be measles.

If parents would only understand that there is a real advantage in protecting young children from scarlet fever, they would be more in earnest in carrying out the instructions given. "In shielding a child against infection during the first year of life," says a well-known writer, "there is a double gain; every year of escape from scarlet fever renders him less and less susceptible, until finally he becomes almost insusceptible; and even if he should ultimately take the disease, every year that the attack is deferred reduces the danger to life which it brings."

The number of deaths from scarlet fever, in 1904, in the Municipal Boroughs was 20, in the other Urban Districts 34, and in the Rural Districts 7, making a total for the County of 61. As already stated, there were 2,427 cases notified, but of these 62 were in a public institution, and are excluded by the District Medical Officer of Health from the cases belonging to the County, so the notified cases belonging to the County were 2,365. Thus the deaths recorded in 1904 were equal to 2.58 of the known cases of scarlet fever. In 1903 3.97 per cent. of the known cases proved fatal; in 1902 3.09 per cent. of the known cases proved fatal; in 1901 2.78 per cent.

of the known cases proved fatal; in 1900 4.0 per cent. of the known cases proved fatal. In 1899 the deaths were 2.9 per cent., in 1898 the deaths were 3.98 per cent., in 1897 the deaths were 5.2 per cent., in 1896 the deaths were 4.6 per cent., in 1895 the deaths were 4.4 per cent., in 1894 the deaths were 4.5 per cent., and in 1893 the deaths were 4.8 per cent. of the known cases. The case-mortality in 1903 is therefore just below the average of recent years in Cheshire, and the case-mortality in 1904 is far lower than in any previous year on record in the County. The London case-mortality averages about 5 per cent., and any percentage not exceeding 4 per cent. may be considered fairly low.

Of the 61 who died from scarlet fever in Cheshire, during 1904, one was an infant under a year old, 33 were children a year old and under five years, 21 were children between five years old and fifteen, while only 6 were persons 15 years old and upwards.

Return Cases.—This term is used to indicate cases reappearing in households shortly after the return of a patient from hospital. Such cases are referred to in a very few Reports. In the Borough of Crewe it is fully realized there is no getting rid of the possibility of return cases, and the Medical Officer, when admitting to hospital any case of scarlet fever, sends a notice to the parents intimating that the Corporation will not be liable for future infection which may occur at home after the child's discharge. The Corporation of Macclesfield protect themselves as far as is practicable in a similar way.

Return cases cannot all be ascribed to inefficient disinfection of the discharged case, for they occur in connection with Isolation Hospitals where particular attention is paid to the cleansing of the skin and hair of each patient, where the mouth and nose are washed out with an antiseptic lotion, and every patient has an antiseptic bath before discharge. Indeed it is not easy to explain how these cases occur. In spite of the exercise of great care, it seems impossible to guarantee freedom from infectiousness on discharge. In a town in which scarlet fever is epidemic, it may not be possible to say if a recurrence in the same house is the result of infection from a recently returned member of a family from hospital or an independent infection from outside. However, when return cases occur in rural districts the evidence may be very strong either that the returned patient was himself infectious, or that infectious particles were retained in his clothes.

The Question of Auxiliary Hospital Provision.—In June, 1902, the Clerk to the Wirral Joint Hospital Board drew the attention of the Public Health Committee of the County Council to the fact that returned cases of scarlet fever had occurred from

time to time, apparently in consequence of some taint of the disease having been carried back by the patient to his home, although kept for a long time in hospital, and not discharged until the doctor thought him entirely free from infection. The Board were advised that the only certain way to prevent this would be to provide a Convalescent Hospital—say at Heswall or some place quite a way from the Fever Hospital—where patients could be transferred for about a fortnight before being sent home. The Clerk concluded by asking, if the Board were to borrow money to buy a site for and build such a hospital, whether the Council would contribute towards that, in the same way they propose to do to ordinary Isolation Hospitals.

The Public Health Committee on receipt of this communication from the Clerk to the Wirral Joint Hospital Board, resolved: "That the Clerk obtain an expression of opinion from the Local Government Board whether the Local Authorities (including Joint Boards) within the meaning of the Public Health Act, 1875, have the legal power to provide auxiliary Infectious Hospitals for the use of persons discharged from ordinary Infectious Hospitals, so as to permit of County Councils contributing under the Isolation Hospitals Acts towards the cost of providing the same if they should consider it expedient or advisable to do so."

The Clerk accordingly wrote to the Local Government Board, and received a reply, under date September 25th, 1902, "that the auxiliary Hospital referred to may properly be held to form part of the scheme of Hospital accommodation for the provision of which the Joint Hospital Board in question was constituted."

Diphtheria and Croup are diseases which appear to be notified very irregularly. During 1904 there were 636 cases of diphtheria, and 32 cases of membranous croup notified; and the deaths recorded were 92 from diphtheria and membranous croup, and 14 from croup. Of the cases notified as diphtheria 115 were removed to Hospital, and of the cases notified as membranous croup 2 were removed to Hospital. As diphtheria and membranous croup are required to be notified, and as death from both are returned under the same column, they must be taken to represent one disease, viz.: diphtheria. What the disease is which is returned as croup, and yet not membranous croup, seems uncertain, but it certainly should not be classed under this heading. Possibly the 14 deaths assigned to "croup" may have been spasmodic croup.

Thus there were in the County during 1904, 668 cases of diphtheria, and of these 92 were fatal, *i.e.*, the case-mortality was 13.77 per cent. In the Municipal Boroughs 21.05 per cent. of the known cases died, in the other Urban Districts 12.77 per cent. of the known cases died, and in the Rural Districts 10.27

per cent. of the known cases died. The death-rate per 1000 living in the Municipal Boroughs was 0.16, in the other Urban Districts 0.17, and in the Rural Districts 0.10. In the whole administrative County the diphtheria death-rate was 0.15 per 1000 living, that is 0·02 below the corresponding death-rate in England and Wales.

Of the 668 cases notified 117 were removed to hospital for isolation and treatment, that is 17·5 per cent.

In the Borough of Crewe 150 cases were notified in 1903, and of these 18 had a fatal termination. In 1902 there were 136 cases notified of which 28 had a fatal termination. The large number of cases and deaths in two consecutive years may be compared with the Crewe record in 1904—53 cases notified and 3 deaths. The average number of deaths in Crewe from this cause from 1874—1901 was 6. In Dukinfield, also, there was very little diphtheria (7 cases and not one fatal) in 1904, yet in 1898—1903 there were 22 deaths. Hyde, on the other hand, had a bad record for diphtheria in 1904—34 cases and 13 deaths. Thus 38 per cent. of the known cases died, and the diphtheria death-rate was equal to 0.38 per thousand living. At Stalybridge, though there were only 15 cases notified there were 8 deaths, thus the case-mortality was 53.3 per cent.

At Runcorn there were 72 cases notified as diphtheria or membranous croup, of which 8 were fatal. Thus 11 per cent. of the notified cases died, and the death-rate was equal to 0.46 per 1,000 living—over 3 times as high as in the whole County. When the Schools re-opened after the midsummer holidays, there was at once a rise in the number of cases notified, which seemed to indicate that the schools influenced the spread of the disease. At Altrincham there were 52 cases and 3 deaths, giving a case-mortality of 5.7 per cent. and a death-rate (0.17) which is only slightly above that of the whole County. At Wallasey there were 55 cases notified and 9 deaths, giving a case-mortality of 16.3 per cent., and a death-rate equal to 0.16 per 1,000 living.

In several instances the influence of insanitary environment is referred to as a factor in localities where outbreaks of diphtheria have arisen. Generally the disease seems to have been spread from person to person, especially in schools or workshops whose ventilation was imperfect. Weakly children, and those having delicate throats, or who have recently recovered from another infectious disease seem specially liable to be infected. When a case occurs isolation is not easy in the houses of working people, and hospital accommodation for cases of diphtheria is not generally available.

Of the 92 persons who died from diphtheria or membranous croup in 1904, eight were infants under a year old, 48 were children a year old and under five years, and 36 were children between five years old and fifteen.

The Diagnosis of Diphtheria.—The need of assistance in diagnosing cases which may or may not be diphtheria, is generally recognised by Medical Officers of Health; and expression is given to this need in several Reports. The Medical Officer of Health for the Borough of Crewe has made arrangements with Dr. Delépine, Professor of Pathology, of the Victoria University of Manchester, for having material from doubtful cases of diphtheria and typhoid fever examined bacteriologically. These arrangements were made at the close of 1896, and a copy of the circular letter on this subject sent during December, 1896, to every Medical Practitioner in Crewe, was printed in the summary of the Crewe Health Report for 1896. This letter explained what it was proposed to do, and the manner of doing it. During 1897 similar arrangements were made with Professor Delépine by the Medical Officers of Health for Alderley Edge and Bollington, and during 1898 similar arrangements were made with Professor Delépine by Medical Officers of Health for the Borough of Congleton, the Urban Districts of Altrincham, Knutsford, Middlewich, Northwich, and Winsford, and the Rural Districts of Bucklow and Nantwich. During 1899 similar arrangements were completed for the Boroughs of Dukinfield and Hyde, and the Urban Districts of Ashton-upon Mersey, Cheadle and Gatley, Hollingworth and Marple. During 1900 similar arrangements were made for the Urban Districts of Bredbury and Romiley, Hale, and Wilmslow, and the Rural District of Northwich. Similar arrangements were made in 1901 for Bowdon Urban District, and early in 1902 for Lymm Urban District, and in 1903 Runcorn Rural District had the advantage of similar arrangements. Communications have been made to all other Districts in the County, pointing out the advantage of affording facilities for the early diagnosis of diphtheria and typhoid fever. The Corporation of Macclesfield have made arrangements for having pathological material bacteriologically examined at the Jenner Institute. Nantwich Urban District Council have made arrangements with Professor Boyce, of Liverpool University, for having material from doubtful cases of diphtheria and enteric fever examined bacteriologically.

The Antitoxin Treatment of Diphtheria.—In certain diseases the blood serum of artificially protected animals, if injected into others still susceptible, has a protective power. Behring found that such a serum could be used to protect from diphtheria and to cure the disease, and after many experiments produced a serum strong enough to be of use for man. Since this discovery Behring, Aronsohn, and others, have, after various trials, succeeded in showing how to produce a very strong, trustworthy preparation of serum; and abundant proof has been given of the value of this so-called "Antitoxin" in hospitals and private practice. It has been clearly shown to be of great use in protecting from diphtheria and in curing the disease. The question of the free supply of diphtheria antitoxin to those of the ratepayers not in a

position to pay for it was discussed in 1900 and in 1901. At Crewe, during 1900, a good example was set to other districts. A supply of diphtheria antitoxin was ordered to be kept at the Isolation Hospital, so that Medical Practitioners could obtain what they wanted at cost price, and have the loan of a special injection syringe. In 1901, the Corporation of Crewe took a further step (as has been already recorded) and provided antitoxin free of cost for the treatment of cases of diphtheria. The majority of Medical Practitioners in the Borough have availed themselves of the advantage offered. During 1901 the Corporation of Hyde ordered antitoxin to be kept at the Hospital and sold at cost price to those requiring it. In Nantwich Rural District when antitoxin was wanted by the Medical Officer of Health, a lady kindly supplied it.

Memorandum on Diphtheria, its Diagnosis, Prevention, and Cure.—Owing to the exceptional prevalence of diphtheria in several districts, it was deemed advisable to issue an Official Memorandum upon the subject of the disease, its diagnosis, prevention, and cure in November, 1902. This memorandum was reprinted in the Annual Report for 1902. In it the duty of the Sanitary Authority, with reference to diphtheria, is summarized as follows :—

1. To inquire into the causes of single cases of diphtheria and outbreaks.
2. To insure the destruction of infected milk and, if possible, of infected animals.
3. To disinfect infected premises, bedding, clothing, etc.
4. To prevent as far as practicable, personal infection, especially during epidemic periods. This will often include making certain restrictions as to school attendance, or recommending school closure.
5. To make Hospital provision for the isolation and treatment of such cases of diphtheria as may arise.
6. To keep a supply of diphtheria antitoxin at some convenient place (e.g., the local Isolation Hospital) to be used by Medical Practitioners for the treatment of cases of diphtheria, and the protection of those exposed to infection ; and also to keep at the same place a syringe or syringes to be used for injecting the antitoxin. The antitoxin might be provided free for those who cannot afford to pay for it, and at cost price for others. A syringe to inject the antitoxin might also be lent free.
7. To make arrangements with the Pathological Department of the University at Manchester or Liverpool, or other suitable Institution to enable local Medical

Practitioners to have material from doubtful cases examined bacteriologically and reported on.

8. To prevent ground air from gaining admission to houses.
9. To render more wholesome, by any means available, the soil in districts in which diphtheria has become endemic.

Whooping-cough in not notified, and the extent of its prevalence has to be gauged by the death record. The number of deaths in 1904 in the Municipal Boroughs was 51, in the other Urban Districts 128, and in the Rural Districts 33—in all 212. The number of deaths from this disease in 1903 was 196; the number in 1902 was 114; the number in 1901 was 145; the number in 1900 was 214; the number in 1899 was 135; the number in 1898 was 111; the number in 1897 was 287; the number in 1896 was 176; the number in 1895 was 110; the number in 1894 was 217; the number in 1893 was 120; and the number in 1892 was 230. Thus the number of deaths from whooping-cough in 1904 was exceptionally large—41 more than in the average 1892-1903.

The disease seems to have been specially fatal at Crewe (12 deaths), Hyde (10 deaths), Macclesfield (13 deaths), Altrincham (8 deaths), Lower Bebington (8 deaths), but the highest mortality was reached at Runcorn (16 deaths), and Wallasey (44 deaths). At Runcorn the whooping-cough death-rate was equal to 0.93 per 1000 living; and at Wallasey the whooping-cough death-rate was equal to 0.77 per 1000 living. At Lower Bebington the whooping-cough death-rate was equal to 0.85 per 1000 living. These 3 are very high death-rates, as the whooping-cough death-rate in the whole County was only 0.35.

In several Districts schools were closed owing to the prevalence of whooping-cough. In Macclesfield Borough, and Wallasey, in particular, the infants' departments and all departments of many schools were closed owing to the prevalence of this disease among the scholars. So many infants' departments being closed seems to point to the unwisdom of sending children to school between the age of 3 and 5 years.

Parents and those in charge of very young children should do their best to avoid any risk of infection, as if a child can be shielded from the disease during the first five years of life, its risk of subsequently taking the disease is much lessened, and if it should acquire it, the chances of recovery are much increased. This advice has been often repeated—the difficulty is to induce people to follow it.

As showing how fatal this disease is in early life, it is interesting to note that 106 of the deaths were of infants under a year old, 98 were of children a year old and under five years, and

7 were of children between five and fifteen years old. One of those who died was upwards of 65 years of age.

Infectiousness in whooping-cough, as in measles, begins with the earliest symptoms. In the early non-spasmodic stage the child is most likely to be a source of danger to others. When the whoop appears (and the disease is commonly not recognised till then) the power of communicating the disease begins to decline. For this reason, and for others, compulsory notification of whooping-cough is not likely to prove of much assistance in checking the spread of the disease. The disease has been notifiable in Ashton-upon-Mersey since November 6th, 1897.

There are indeed few maladies so difficult to deal with as whooping cough, from a public health point of view. Its onset is insidious, and the catarrhal stage (during which the symptoms are not characteristic) commonly lasts nearly a week. As a matter of fact, little seems to be done throughout the County to stop the spread of this disease. Still there is no doubt about the infectiousness of whooping-cough, or the need of keeping infected children from others, and in particular from school. The mortality from whooping-cough would probably be much reduced if those in charge of children regarded the disease more seriously, and had the patients properly nursed and kept warm. And this mortality needs reducing, for whooping-cough is the most fatal of all infectious diseases of children under five years of age.

Fevers.—In the official form furnished to Medical Officers of Health by the Local Government Board, and used for making mortality returns, "Fever" is divided into three, viz.: "Typhus," "Enteric," and "other continued." Puerperal fever, like scarlet fever, is classed elsewhere in the form. During 1904, there was one death from typhus fever, there were 66 deaths from enteric (or typhoid) fever, and there was one death from other continued fever. There were 2 cases of typhus fever notified, 339 cases of enteric fever, and 13 cases notified as continued fever.

Typhus Fever.—The 2 cases of this disease were notified, in August, from a court at the east end of the town of Runcorn. Both patients were promptly removed to the Isolation Hospital, where one (aged 40 years) died 3 days after admission. The other patient (aged about 12 years) made a good recovery. The attack followed a visit to a neighbouring city, where there were cases of this fever, and 5 days after these people returned to Runcorn they were taken ill. Three days later, the illness was diagnosed typhus fever and the patients were taken to the hospital. The infected house was kept closed for some time, and repeatedly disinfected. The whole of the court in which the house was situated was also well disinfected, and the beds, bedding, and wearing apparel of the patients were burnt.

Enteric and other continued Fever.—Enteric fever (called also typhoid fever) and simple continued fever may be considered together, as it seems probable that a large proportion of cases notified as continued fever are really enteric fever. Of the 352 in the County, during 1904, 65 (18.46 per cent.) were removed to hospital.

That is to say:—

In the Municipal Boroughs 127 cases were notified and none removed.

In the other Urban Districts 172 cases were notified and 54 removed (equal to 31.4 per cent.)

In the Rural Districts 53 cases were notified and 11 removed (equal to 20.7 per cent.)

In 1903 the proportion of notified cases of enteric fever removed to Hospital was 21.55 per cent., in 1902 the proportion was 27.95 per cent., in 1901 the proportion was 33.6 per cent., and in the nine years 1892-1900 the proportion of notified cases of enteric fever removed to Hospital was 19.48 per cent. Thus the record for 1904 is not as good, in this respect, as the record of previous years.

In the Borough of Congleton there were only 6 cases of enteric fever, all very mild, the source of which could not be traced or reasonably attributed to sanitary defects. In the large Borough of Crewe, having an estimated population of upwards of 46,000, there were only 2 cases of enteric fever (one being fatal) in 1904. The average annual number of deaths from this cause at Crewe, since 1874, has been 6. In Dukinfield there were 25 cases of enteric fever notified, of which 5 were fatal. The presence of the disease appears to indicate faulty sanitary conditions. The mortality in 1904 was above the local average. Hyde suffered much more severely from enteric fever in 1904, there having been 65 cases notified, of which 14 proved fatal. The mortality was equal to 0.41 per 1000 living, that is nearly four times as high as the fever death-rate for Cheshire. The cases were relatively more numerous in the part of this Borough, where privies are most common. The want of means of isolation also tended to spread the disease. In several instances there were 2 or 3 cases in a house, and in one house there were 4 cases. In the Borough of Macclesfield there were but 12 cases of enteric fever (2 fatal) in 1904. This is the smallest number notified for many years. The Medical Officer of Health is of opinion that the decline of this disease is to some extent due to a reduction of the privy-middens in the Borough. It is mentioned that 6 of the cases notified were at the Parkside Asylum. At Stalybridge there were 17 cases, 6 being fatal—thus the case-mortality was 35.5 per cent. The death-rate was therefore equal to 0.21 per 1000 living, nearly twice as high as the corresponding death-rate (0.11)

for Cheshire. Enteric fever seems to exist in this Borough "in an intermittent form all the year round." The Medical Officer of Health believes the cause is "the old-fashioned privy and ashpit which exists so extensively." This "arrangement is universally condemned by all Medical Officers of Health and the Local Government Board, and the chief ground of condemnation is that the accumulation of filth close to the back door of the cottage houses must be, and is, detrimental to the health of the people." Now that the main drainage scheme is completed the Sanitary Committee will be in a position to deal satisfactorily with a large number of these old privies.

At Ashton-upon-Mersey there were 6 cases of enteric fever notified in 1904, of which 3 were fatal. Thus the case-mortality was equal to 50 per cent., and the death-rate was equal to 0.53 per 1000 living, nearly five times as high as the corresponding death-rate for Cheshire.

At Ellesmere Port and Whitby there were 16 cases of typhoid fever notified in 1904. This is a large number, though only one case proved fatal. The outbreak began in September, in which month 9 cases occurred. Eight cases were in one street, where many patients had sickened before the disease was recognised. In this street the sanitary accommodation consists of privy-middens, and so the disease got a hold on the locality.

In Runcorn Urban District 42 cases were notified as enteric fever, and 13 cases were notified as continued fever. There were 4 deaths registered, 3 as due to enteric fever and 1 as due to continued fever. The death-rate was then equal to 0.23 per 1000 living. The Medical Officer of Health points out that last summer being exceptionally dry, the subsoil got dry and parched, and "when the rains of autumn came the accumulated poisonous gases were displaced by the rainfall, and in much the larger number of cases the displacement of these gases appears to be the most probable cause of the onset, but this does not account for the onset in all the cases, for in one instance particularly grave sanitary defects were discovered in the cellar." Several of the patients, it is believed, contracted the fever when away, and one patient certainly was infected at a fashionable watering place.

Wallasey is one of those Districts that is rarely quite free from enteric fever. Though the fever death-rate in 1904 was only 0.12 (just above the fever death-rate for Cheshire), there were 39 cases notified during the year. The death-rate is not as low as in 1903 (just below 0.09), when it was lower than any fever death-rate recorded in Wallasey since 1890. The improvement is ascribed by the Medical Officer of Health to the amount of work already done in reconstructing the sewers (especially in areas where typhoid fever most prevailed), in relaying defective house drains, and in sewer and drain flushing.

The number of deaths from enteric (including other continued) fever, in 1904, was 28 in the Municipal Boroughs, 24 in the other Urban Districts, and 15 in the Rural Districts —65 in all. Thus 19.0 per cent. of the known cases of this disease were fatal; a case-mortality far in excess of that in Cheshire during recent years. In 1903 there were 40 deaths—14.1 per cent. of the known cases. In 1902 there were 66 deaths—16.6 per cent. of the known cases. In 1901 there were 1,000 deaths—13.7 per cent. of the known cases. In 1900 there were 107 deaths—16.5 per cent. of the known cases. In 1899 there were 101 deaths—14.1 per cent. of the known cases. In 1898 there were 106 deaths—15.18 per cent. of the known cases. In 1897 there were 68 deaths—14.0 per cent. of the known cases. In 1896 there were 86 deaths—16.4 per cent. of the known cases. In 1895 there were 76 deaths—17.0 per cent. of the known cases. In 1894 there were 81 deaths—18.0 per cent. of the known cases. In 1893 there were 118 deaths—15.0 per cent. of the known cases.

The Diagnosis of Typhoid or Enteric Fever.—Owing to the length of time during which typhoid fever is latent, it ordinarily happens that infective excreta are emptied into midden-privies before it is possible to recognise the disease with certainty. Hence, the great value of a test which will enable a Medical Practitioner to recognize this disease at an early stage. Such a test was discovered by Dr. Fernand Widal, of Paris, in 1896. It is based on the action which the blood of patients affected with typhoid fever has on cultures of the typhoid bacillus.*

This test is now available for any district in Cheshire. All that the District Council has to do is to make arrangements with the Pathological Department of the Victoria University of Manchester or the University of Liverpool, and then material can be sent to the College from doubtful cases of typhoid fever, diphtheria, or phthisis, etc., by Medical Practitioners in the said District, and the material will be

* The quick method of applying Dr. Widal's test is thus described by Professor Delépine. Take a drop of blood or of the serum to be examined. Dilute with 9 parts of neutral bouillon. Mix on a slide or cover-glass a drop of this one-tenth dilution of the serum with one or more drops of a young (24 hours old) culture of the typhoid bacillus. Cover the mixed drops with a cover-glass, or, if the mixture has been made on a cover-glass, place this cover (film downwards) on a slide. Examine the preparation at once with a microscope. The most convenient powers to use are such as will magnify from 200 to 300 times in diameter; but the reaction can be seen with a vere low power, and, when it is well marked, even with the naked eye. If thy serum, or blood, be of a typhoid patient in the 2nd, 3rd, 4th or 5th week of the illness, the reaction will in most cases appear almost instantaneously. Within one or two minutes the bacilli, instead of moving rapidly, as when they are in presence of non-typhoid blood, become sluggish and, in many cases, motionless. They run together as if moved by some force of attraction, and form clumps of various sizes. This *agglomeration phenomenon* may sometimes be so

promptly subjected to bacteriological tests, and reported on. Such arrangements have been made by the Corporations of Crewe, Congleton, Dukinfield, and Hyde, and by twenty other authorities in the County, and it would doubtless be for the advantages of all Corporations and District Councils if they took similar action.

From many Districts evidence has been received of the usefulness of this test.

For the Borough of Macclesfield tests are applied by the Jenner Institute. Medical Practitioners are permitted to have the test applied in doubtful cases, the Authority defraying the cost.

Diarrhœa is the last of the seven principal zymotic diseases, according to the returns of the Registrar-General. What is, and what is not to be regarded as diarrhœa is a question of importance from a statistical point of view, as increasing and lowering the zymotic death-rate. It is therefore well that the official forms [issued by the Local Government Board to be used for 1900 and since] have a note on this subject. The note is as follows:—

Under the heading of "Diarrhœa" are to be included deaths certified as from diarrhœa, alone or in combination with some other cause of ill-defined nature; and also deaths certified as from

Epidemic enteritis;
Zymotic enteritis;
Epidemic diarrhœa; Summer diarrhœa;
Dysentery and dysenteric diarrhœa;
Choleraic diarrhœa, cholera, cholera nostras (in the absence of Asiatic cholera).

Under the heading of "Enteritis" are to be included those certified as from Gastro-enteritis, Muco-enteritis and Gastric catarrh, unless from

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complete that after a space of time, varying between five minutes and twenty minutes, hardly any bacilli remain free between the clumps. In a few instances the reaction is not distinct before the end of the first or second hour; but these cases are exceptional. In the case of healthy or diseased persons not affected with typhoid fever, no such reaction is observed. It is true that when too large a proportion of blood is used, even the serum of healthy persons may give rise to agglomeration of the bacilli. But the phenomenon in such cases is far less clear and well-defined than in cases of typhoid fever, and generally comes on very slowly. In typhoid fever the reaction has been observed by Widal on the 4th and 5th days; and some American observers have reported a reaction at an earlier date still. It must be remembered, however, that during the first week the reaction is often slow and not quite clear, and that to establish a clear diagnosis re-examination is very often necessary. Widal and Sicard found that blister fluid had the same properties as the blood serum. Milk and tears of typhoid patients have also been found to behave in the same way, though they are less active than the blood serum.

information obtained by enquiry from the certifying practitioner or otherwise the Medical Officer of Health should have reason for including such deaths, especially those of infants, under the specific term "Diarrhœa."

Deaths from diarrhœa secondary to some other well-defined disease should be included under the latter.

Attention is also especially invited to the recent decision of the Royal College of Physicians, advocating the use of authorised names for diarrhœa and diarrhœal diseases.

The Royal College of Physicians of London, in response to an earnest appeal for its authoritative guidance concerning the certificates of death from diarrhœa, has now expressed an opinion which, if loyally adopted by medical men throughout the country, in granting certificates of death, will greatly improve the national records of mortality from this disease. The following is an extract from the proceedings of the College, dated January 25th, 1900:—

"The Royal College of Physicians is convinced, after "careful enquiry: (a) that various unauthorised and mis-"leading terms such as 'gastro-enteritis,' 'muco-enteritis,' " 'gastric-catarrh,' etc., are now commonly employed to "designate the disease officially known as 'epidemic diar-"rhœa," whereby its specific character is in danger of being "ignored, and great confusion ensues; (b) that the present "confusion of terms renders it impossible to determine "accurately either the prevalence of the disease in special "places and at special times, the extent to which it influences "the public health, or the effects produced by sanitary "measures; (c) that there is a widespread objection, on the "part of medical practitioners to the employment of the "term 'Diarrhœa' in certifying the cause of death, prob-"ably because that term is generally held by the public to "imply a mild disease, insufficient by itself to cause death.

"The College, therefore, has sought to discover as an "alternative for the authorized term (epidemic diarrhœa) "some other name, which whilst equally accurate, should "convey to the public the idea of a more serious affection. "But the College regards it as essential that the idea of "specificity, intended to be conveyed by the term 'epidemic,' "should be retained.

"As the result of much deliberation, the College has "agreed to authorize the use of the term 'epidemic enteritis' "(or if preferred by the practitioner, 'zymotic enteritis'), "as a synonym for epidemic diarrhœa. The College has

"further decided to urge upon practitioners the entire dis-
"use, in medical certificates of death, of such terms as
" 'gastro-enteritis,' 'muco-enteritis,' or 'gastric catarrh,'
"as synonyms of epidemic diarrhœa."

Diarrhœa is not notified, and the extent of its prevalence year by year is measured by its death record. In 1904 the number of deaths ascribed to diarrhœa was 108 in the Municipal Boroughs, 237 in the other Urban Districts, and 36 in the Rural Districts. Out of the 381 whose deaths were registered as due to diarrhœa in 1904, 269 were infants under one year old, 67 were children a year old and under five years, 15 were between five and fifteen years old, 13 were between 25 and 60 years old, and 17 were 65 years of age and upwards.

The number of deaths from diarrhœa in 1903 was 194, the number in 1902 was 126, the number in 1901 was 445, the number in 1900 was 326, the number in 1899 was 506, the number in 1898 was 572, the number in 1897 was 460, the number in 1896 was 239, the number in 1895 was 453, the number in 1894 was 168, the number in 1893 was 652, the number in 1892 was 205. The diarrhœa mortality varies much from year to year, and latterly has been high each alternate year; however, the records for 1897-99 afford an instance of three consecutive years in which a high death-rate has been maintained. In 1903 the Cheshire mortality from diarrhœa was very much below the corresponding mortality in 1892-1902, which averaged 377.5 deaths. In 1904 the Cheshire mortality from diarrhœa was a little above this average. However, the County compares favourably with the whole country in this respect. In June, 1904, the diarrhœa death-rate was equal to 0.62 per 1,000 living, and in the whole of England and Wales it was 0.86.

This disease prevails to some extent every autumn, and is associated with high temperature and putrefactive changes in food. As indicating the connection of this disease with the food of those who suffer, it has often been proved by statistics to be specially a disease of hand-fed infants. As illustrating the truth of Dr. Ballard's conclusions, that as soon as the temperature reaches 56 degrees Fahr. at a depth of 4 ft., the disease may be expected to appear more or less extensively; the experience at Crewe has been often referred to in previous Annual Reports. During 1904 diarrhœa was the cause of 34 deaths in this Borough. In 1903 there were only 11 deaths from diarrhœa, but the average number of deaths from diarrhœa between 1874 and 1902 was 26. Weather conditions seem to have had much to do with the low death-rate in 1903, and also with the somewhat high death-rate in 1904. Thirty of the 34 who died were under 12 months old. The preponderance of such deaths among arti-

ficially reared children justifies the view that the question of feeding is intimately associated with this occurrence. The following figures shew the result of enquiries made during the last three years into this question:—

Of 12	infants	who	died	from	diarrhœa in	1902, 2	were	breast fed
„ 11	„	„	„	„	1903, 4	„	„	„
„ 30	„	„	„	„	1904, 2	„	„	„
53						8		

The bottles used all had the long rubber tube, and in many cases, even with the youngest infants, the milk was supplemented by some other food. Even where clean fresh milk is bought, the dirty condition of many of the houses must soon lead to its contamination and decomposition. Condensed milks seem to be very much used, especially among the poorer people. These, no doubt, are excellent and useful preparations, but not for infants. They are deficient in fat and contain an excess of cane sugar, and their use for feeding infants is liable to produce rickets, and should therefore be discouraged. In some cases the method of preparing the condensed milk for use was such as exposed the children to the further danger of gradual starvation.

At Crewe inquiries are made into the circumstances attending each death, as is done at Dukinfield and Hyde. At Hyde there were 28 deaths from diarrhœa, that is the death-rate was equal to 0.83 per 1,000 living.

At Altrincham there were 17 deaths from diarrhœa, thus the death-rate was equal to 0.96 per 1,000 living.

At Wallasey, as has often happened in past years, the diarrhœa death-rate was high. During 1904 there were in this District 62 deaths, this number being equal to a death-rate of 1.08 per 1,000 living. Of the 62 who died, 50 were infants under a year old, and there were also 9 infants whose deaths were ascribed to enteritis. In the opinion of the Medical Officer of Health, most of the infants certified as dying from enteritis probably died of zymotic enteritis, which is diarrhœa. It is shown that out of the 71 deaths ascribed to diarrhœa and enteritis in the whole year, 66 occurred in July, August, September, and October, when the temperature was very high and the rainfall diminished. The lately appointed Female Sanitary Inspector, when cases of infantile diarrhœa were discovered in the course of her house-to-house visits, did her best to get the sufferers fed on sterilised humanised milk, with excellent results. The disadvantages of the long tube feeding bottles were also pointed out. During the autumn visits were paid to houses at which deaths from infantile diarrhœa had occurred. Of the 53 whose

deaths were the subject of inquiries, it was found that only one had been entirely breast-fed, 9 had been partially breast-fed, and the remaining 43 artificially fed, the majority of these having had food unsuitable for infants.

Sale Urban District recorded a mortality from diarrhœa which was exceptionally high. There were 26 deaths from this cause in 1904, giving a diarrhœa death-rate of 2.08 per 1,000 living. The disease was very prevalent in the summer and autumn, when the weather was hot and the rain deficient, and 23 of those who died were infants under a year old.

The highest death-rate from diarrhœa was recorded in the town of Runcorn. There were 48 deaths from this disease, giving a diarrhœa death-rate of 2.79. *Thus the diarrhœa death-rate was four and a half times the death-rate for Cheshire.* All but one of these deaths were registered between May and October.

Enteritis.—After what has just been stated as to the use of this term, it seems probable that it will in the future be used less and less, and much consequent error will cease. During 1904 it was registered as the cause of 145 deaths in the County. Of those who died 105 were infants under a year old, 9 were children a year old and under five years, 11 were between 5 and 15 years, 3 were between 15 and 25 years, 11 were between 25 and 65, and 6 were persons 65 years old and upwards.

Epidemic Influenza.—The official forms on which, since 1900, mortality returns from Boroughs and Districts have been made, include "epidemic influenza," among the diseases for which a separate return is required. Prior to 1900, returns as to the number of deaths from influenza were made in this County by request, but such voluntary returns are necessarily imperfect. In 1904 the number of deaths reported as due to epidemic influenza was 73; of these 16 were in the Municipal Boroughs, 29 were in the other Urban Districts, and 28 were in the Rural Districts. In 1903 the number of deaths reported from this cause was 90, in 1902 the number of deaths reported was 74, in 1901 the number of deaths reported was 83, in 1900 the number of deaths reported was 286, in 1899 the number of deaths reported was 251, in 1898 the number of deaths reported was 146, in 1897 the number of deaths reported was 104, in 1896 the number of deaths reported was 39, and in 1895 the number of deaths reported was 157. The death-rate per 1,000 living was thus 0.12 in Cheshire in 1904, and 0.14 in 1903. It was 0.12 in 1902, and 0.13 in 1901. Thus for four years this death-rate has not varied much.

Five of those who died from influenza in 1904 were infants under a year old, 1 was between 5 and 15 years, 5 were between 15 and 25 years, 36 were between 25 and 65 years, and 26 were 65 years old and upwards.

There is no doubt about the infectiousness of influenza, and this infectiousness appears to continue from the onset of the disease till the patient is sufficiently convalescent to resume his ordinary occupation, but there is very little that the Local Authority can do to limit the spread of the disease when it has once appeared in a district. Compulsory notification, even if practicable, would be of very little use, and certainly hospital provision could not be made for cases. Still, the public should be informed that the infective particles are present largely in what is discharged from the lungs and nasal passages, and that these should not be allowed to dry and scatter infection, but be at once burnt, or received into water and emptied down a drain leading to a sewer. The public should be informed also that anyone having influenza should keep to himself as much as possible, especially avoiding assemblages of people. Of course, after recovery of the patient, infected rooms and clothing should be disinfected.

Puerperal Fever is a term which, according to the Registrar-General, should no longer be used. However Medical Practitioners, in writing certificates of the cause of death, continue to employ it. A few years ago puerperal fever was regarded as an acute specific fever occurring in lying-in women only, but it is now commonly held to be a puerperal septic disease caused by infectious germs directly conveyed to the patient by defiled hands, sponges, etc., or otherwise.

During 1904 there were 11 cases notified and 9 deaths in the Municipal Boroughs, there were 28 cases notified and 17 deaths in the other Urban Districts, and there were 22 cases notified and 5 deaths in the Rural Districts. Thus, there were in all 61 cases notified and 31 deaths, giving a mortality of 50.8 per cent. Such a high mortality is not probable, and the record seems to indicate that all the cases are not notified. The truth is that puerperal fever is very irregularly notified, and the cause of this is not far to seek. It is of more frequent occurrence among those who, from poverty or other causes, are without skilled attendance and nursing. Thus, numbers of cases are never seen by a Medical Practitioner, and in many instances the first intimation the Medical Officer of Health has of a case is after the death of a patient. Rarely indeed is it practicable to send a case of puerperal fever to Hospital (one case was sent in 1904) but possibly something more might be done in impressing upon the poor the necessity of infinite cleanliness in the treatment and en-

vironment of lying-in women. In the Chester Rural District and other Districts belonging to the West Cheshire combination, the bedding used by puerperal fever patients is destroyed and compensation given. It would be wise to do this in all cases notified in a District where no steam disinfector has been provided. Every midwife or nurse who has been in attendance on a puerperal fever patient should be cautioned not to attend another case until she has had a bath, washed her head, and had her clothes properly disinfected. Even after taking such precautions the midwife or nurse would do well to take a few days holiday before resuming work.

The Medical Officers of Health for the Boroughs of Crewe, Hyde, and Macclesfield, arrange for the disinfection of women who have lately attended cases of puerperal fever at the Isolation Hospitals.

The Midwives Act, 1902.—At a Meeting of the Public Health Committee, on October 24th, 1902, the Clerk called the attention of the Committee to this Act, and the powers conferred upon County Councils thereunder, and it was

> Resolved—That the Clerk furnish each Member of Committee with a copy of such Act, and that the County Medical Officer of Health report to the next Meeting of the Committee the action he recommends the County Council should take thereon.

Accordingly, at the next Meeting of the Committee, on January 23rd, 1903, the County Medical Officer submitted a Report as instructed. This Report was printed in full in the County Medical Officer's Annual Report for the year 1902.

After this report was presented, it was referred to a Committee which the Council were recommended to appoint, delegating to them the powers of the Council to take such action as they may think fit for putting the Act into operation on April 1st, 1903, and to report thereon to the Quarterly Meeting of the Council in May.

At the first Meeting of the Midwives Act, 1902, Committee, on May 1st, 1903, the Clerk laid before the Committee a Memorandum from the Local Government Board, on the Midwives Act, 1902; together with a letter to the County Medical Officer relating to the same. It was thereupon

> Resolved—That the consideration of the action to be taken by the Council for making known the provisions of the Act, and putting the same into operation, be adjourned until the Regulations of the Central Midwives' Board have been passed and issued.

At the next Meeting of the Midwives Act, 1902, Committee, on October 16th, 1903, the Clerk laid before the Committee the Rules framed by the Central Midwives Board and forms for giving effect thereto, and also the following suggestions to County and County Borough Councils, issued by the Central Midwives Board in reference to the duties assigned to them under the Midwives Act, 1902.

SUGGESTIONS TO COUNTY AND COUNTY BOROUGH COUNCILS IN REFERENCE TO THE DUTIES ASSIGNED TO THEM UNDER THE MIDWIVES ACT, 1902.

1. The Central Midwives Board suggests to the County Councils the advisability of retaining the administrative duties assigned to them, under the Midwives Act, 1902, as far as possible in the hands of a Committee directly appointed by themselves. This will not only secure for the County Council more adequate control over the expenditure, but will tend also to prevent the possibility of local rivalries and jealousies interfering with the carrying out of the provisions of the Act.

2. The Board suggests further that the Health Committee of the County Council would form a suitable Committee to act as the Local Supervising Authority, with power to add to its number from outside the Council or otherwise.

In Counties where there is no County Medical Officer it is suggested that a Special Medical Officer be appointed to advise the Committee.

3. It is further suggested that supervision should be regarded as at least in part a medical duty, and that the Medical Officer of Health, or the Medical Adviser specially appointed, should be empowered to act as the Executive Officer of the Committee.

4. The Board suggests to County and County Borough Councils that, this being a matter almost solely affecting women, the Local Supervising Authority should, as sanctioned by the Act, include in any Committee it may appoint one or more women conversant with the needs of the poor in the district.

The Committee considered the Rules and suggestions of the Central Midwives' Board, and the following Resolutions were passed :—

RESOLVED—That the Clerk to the Council point out to the Central Midwives' Board that there appears to this Committee to be a defect in the Rules, inasmuch as no provision is made therein for payment of the Medical Practitioner called in by the Midwife, and enquire how the difficulty as to payment can be met where the Medical Practitioner declines to attend unless payment of his fee is guaranteed, and further enquire whether the County Council can pay such fee, not exceeding the scale allowed by the Poor Law Authority.

RESOLVED—That the Clerk ascertain from the Central Midwives' Board whether the item "Date of engagement to attend" in paragraph 19 of the Rules means the date the Midwife is engaged, or the expected date of confinement, and also with respect to paragraph 20 enquire who the Board suggest should make the inspection of the articles mentioned therein.

The County Medical Officer of Health reported that he had obtained Returns of the names and addresses of the Midwives practising in all but two of the Boroughs and Districts in the Administrative County. According to these Returns the number of Midwives practising in the 52 Boroughs and Districts was 506. When the two Returns to come in were received, this number would probably be increased to 530.

The Committee then considered the desirability of recommending the County Council to exercise the powers conferred upon them by Section 9 of the Act, by delegating, with or without any restrictions or conditions as they may think fit, any power or duties conferred or imposed upon them, to any District Council within the County; and also communications on the subject from certain of the Boroughs in the County, and it was, thereupon

RESOLVED—That the Committee are of opinion that the Act can be most efficiently administered by the County Council delegating its powers on certain terms and conditions to the Municipal Boroughs and Urban and Rural District Councils in the County, and that the County Medical Officer of Health report to a future Meeting of the Committee the terms and conditions upon which he recommends such delegation should be made to those District Councils willing to accept the same.

At a Meeting of the Midwives Act, 1902, Committee, on January 22nd, 1904, the County Medical Officer of Health reported upon the terms and conditions on which he recommended the powers and duties of the Council, under the Act, to be delegated to the Borough and District Councils willing to accept the same. This Report was to the following effect :—

The County Medical Officer of Health considered the matter referred to him in the last quoted resolution, without being able to devise a satisfactory system of delegation, and then, having occasion to be in London on November 20th, he availed himself of the opportunity of calling on the Secretary of the Central Midwives' Board, at his office, 6 Suffolk Street, Pall Mall. The Secretary was briefly informed that the Cheshire County Council had formed a Midwives' Act Committee, and that the Committee were of opinion that the Act can be most efficiently administered by the County Council delegating its powers on certain terms and conditions to the Municipal Boroughs and Urban and Rural District Councils in the County and that the County Medical Officer had been instructed to report on the terms and conditions upon which he would recommend such delegation. Finally, the Secretary was asked if he could give any indications as to what terms and conditions would be approved by his Board. He said that powers which were delegated to Town Councils and District Councils would be theirs until they were withdrawn, and if powers were delegated to the Borough and District Councils in a County, they would be the Local Supervising Authorities over Midwives within their respective areas, they would investigate charges of mal-practice, negligence or misconduct, suspend any midwife from practice if such suspension appears necessary, report at once to the Central Midwives' Board the name of any midwife practising in their area convicted of an offence, keep the local register of midwives, supply information therefrom to the Central Midwives' Board, report the death of any midwife or change of name or address, and give due notice of the effect of the Act as far as practicable to persons using the title of midwife, &c. As Local Supervising Authorities the Town Councils and District Councils would be in direct communication with the Central Midwives' Board, and there would be ordinarily little left for the County Council to do, except perhaps to withdraw powers misused or neglected. The Secretary added that the Central Midwives' Board were in favour of County Councils retaining the administrative duties assigned to them in the Midwives' Act, as far as possible in the hands of a Committee directly appointed by themselves; he asked what objection there was to this course. It was explained to the Secretary that the County Council could not very readily make arrangements to secure a proper inspection of every midwife's case book, bag of appliances, &c., and, when thought necessary, an inspection of her place of residence, and an investigation of her mode of practice. In reply, the Secretary said it had not been suggested by the Central Midwives' Board that these inspections and investigations should be made by the County Medical Officer of Health, but by the District Medical Officers of Health. The County Council could make suitable terms with such Medical Officers of Health for the carrying out of the required inspections and investigations, who, in this respect would be, so to speak, assistants to the County Medical Officer.

TERMS AND CONDITIONS UPON WHICH POWERS AND DUTIES MAY BE DELEGATED.

The County Medical Officer of Health, as instructed, submits the following as the terms and conditions upon which he recommends that the duties assigned under the Midwives' Act may be delegated to Town Councils and District Councils.

1. That the Town Council or District Council is willing to accept the powers and duties conferred or imposed under the Midwives' Act, which it is proposed to delegate.

2. That the Town Council or District Council undertake to make use of the powers and discharge the duties delegated, in the manner set forth in the Midwives' Act and Rules made thereunder.

3. That during the month of January of each year, the Town Council or District Council supplies to the Clerk (or Medical Officer of Health) to the County Council the following information in respect of the year immediately preceding, viz. :—

(a) The name and address of every practising midwife residing in the Borough or District, who has been admitted to the roll of midwives under Section 6 (1) and (2) of the Midwives' Act.

(b) The name and address of every midwife practising in the Borough or District, but residing elsewhere, who has been admitted to the roll of midwives under Section 6 (1) and (2) of the Midwives' Act.

(c) The number of charges of malpractice, negligence, or misconduct on the part of any midwife practising within the Borough or District, investigated.

(d) The number of such charges in which a *prima facie* case was established.

(e) The number of cases in which a midwife has been suspended from practice, in order to prevent the spread of infection.

(f) The number of cases in which a midwife practising in a Borough or District has been convicted of an offence, the nature of the offences committed, and the number of midwives convicted of each offence.

(g) The name and address of any practising midwife who died during the year in the Borough or District ; and any change in the name or address of any midwife residing in the Borough or District which has taken place during the year.

(h) The number of inspections made of midwives' case books, bag of appliances, &c., and the number of

inspections made of midwives' places of residence, and the number of investigations made as to mode of practice.

(i) The number of deaths of mothers and of infants occurring in the practice of midwives in the Borough or District, and the number of these occurring before the attendance of a registered medical practitioner.

(j) The number of still births occurring in the practice of midwives in the Borough or District, and the number of these occurring before the attendance of a registered medical practitioner.

(k) The number of cases of puerperal fever occurring in the practice of midwives in the Borough or District, and the number of these occurring before the attendance of a registered medical practitioner.

(l) The number of cases attended solely by Midwives in the Borough or District.

(m) A brief general report on the working of the Midwifes' Act in the Borough or District.

4. That the Town Council or District Council agree that the expenses they will be entitled to charge for putting the Midwives' Act into operation shall not exceed a maximum to be determined.

AN ALTERNATIVE SUGGESTION.

Should the Midwives' Act Committee be disposed to reconsider the question of the expediency of delegation, the County Medical Officer suggests that it would probably be possible for the County Council to retain the administrative duties in the hands of a Committee directly appointed by themselves, and to make arrangements with the Borough or District Medical Officers of Health to inspect the Midwives' case books, bags of appliances, places of residence, and mode of practice by paying each of the said Medical Officers of Health an annual sum of (say) 21/- for every practising Midwife resident in his Borough or District, on the Medical Officer of Health agreeing to furnish an Annual Report to the County Council on the lines indicated above.

The Committee considered this Report, and the following Resolution was passed : —

Resolved—That the Councils of the several Municipal Boroughs and Urban and Rural Districts in the Administrative County be invited to appoint the Chairman or some other member of their respective Health or Sanitary Committees and their respective Medical Officers of Health to attend a Conference with the members of this Committee to generally discuss the administration of the Act within the County,

and in particular the terms upon which they would be prepared to recommend their respective Authorities to assist in carrying out the Act within the Areas under their respective jurisdictions.

Representations of the Councils of the Municipal Boroughs and Urban and Rural Districts were accordingly appointed, and these were received in Conference by the Committee on April 21st, 1904. After the County Medical Officer of Health had explained the provisions of the Act, and the Clerk to the Council had given information as to the steps which the County Council had taken in connection therewith, the Committee proceeded to discuss with the Representatives present the best means to be adopted in working the Act, *i.e.*, whether by the County Council delegating its powers to the Borough and District Councils, or by the County Council administering the Act with the co-operation of the Borough and District Councils and with the assistance of their Medical Officers of Health, and there being a general concensus of opinion that the latter course was the preferable one to adopt, the following resolution was passed (*nem con*) by the Representatives present :—

"That the Representatives of the Municipal Urban "and Rural District Councils present at this Conference "are prepared to recommend their respective Councils to "assist the County Council in carrying out the Midwives "Act, 1902, within their respective jurisdictions by per-"mitting their respective Medical Officers of Health to "perform the following duties, viz :—

"(a) Inspection of Midwives' case books.
"(b) Inspection of bags of appliances.
"(c) Inspection of places of residence.
"(d) Inspection of mode of practice.
"(e) Such other analagous duties as the County "Medical Officer of Health may prescribe,

"and on such terms as may be agreed between the County "Council and each District Medical Officer of Health."

Resolved—That the County Medical Officer of Health consider and report to a Meeting of this Committee, to be held on the 29th inst, the remuneration which should, in his opinion, be paid to the District Medical Officers for carrying out the duties referred to in the foregoing resolution, and to what extent such duties should be performed in the case of those Midwives who practice in but are not resident within the Administrative County.

At a Meeting of the Midwives Act, 1902, Committee, on April 29th, 1904, the County Medical Officer of Health reported as to the remuneration which should, in his opinion, be paid to the District Medical Officers of Health for carrying out the duties

enumerated in the resolution passed at the Conference, and as to other matters. This Report was to the following effect :—

As to the amount of remuneration which, in the opinion of the County Medical Officer, it would be proper for the County Council to pay Borough and District Medical Officers of Health for services it is intended that they should perform in assisting the County Council to carry out the Midwives Act, 1902, within their respective Areas.

The proper amount of remuneration to be paid to each Medical Officer of Health may be tentatively fixed at the annual sum of one guinea and a half, in respect of each woman residing in the Borough or District of the Medical Officer of Health, whose name is on the official roll of Midwives on 31st day of January in each year.

Provided that, as there may be some District Medical Officers of Health in whose District or Districts only one Midwife resides, or in which there is no Resident Midwife, it seems proper that the minimum annual sum to be paid to each Medical Officer of Health in the Administrative County should be in no case less than five guineas.

The County Medical Officer of Health recommends that each Borough or District Medical Officer of Health be requested to send in his claim for fees during January in each year, together with his report relating to the provisions of the Midwives Act, 1902, and his action thereunder, on the lines laid down in the County Medical Officer's Second Report on the Midwives Act, and the action he recommends the County Council to take thereon. On receipt of the Report the account would be examined and certified.

As the duties to be undertaken by Borough and District Medical Officers of Health in carrying out the provisions of the Midwives Act will, in many respects, be similar to their other duties as Medical Officers of Health, it seems proper that the above fees should ordinarily include office expenses and travelling, but if (especially in Rural Districts) journeys have to be made in preliminary investigations as to malpractice, negligence, or misconduct of a midwife, &c., it seems fair that the expense of such journeys should be charged to the County Council.

As to how it is proposed to deal with Midwives practising but not residing in the Administrative County.

As the provisions of the Midwives Act are being carried out, or will shortly be carried out, in all Boroughs and Districts bordering on as well as within the Administrative County, dealing with Midwives practising but not residing in the County, will presumably be largely effected by means of

inter-communication between Medical Officers of Health. For example:—A Medical Officer of Health within this County has a case of puerperal fever in his District reported to him, the patient having been attended in her confinement by a Midwife residing in a District outside the County. He at once furnishes particulars to the Medical Officer of Health for the District in which the Midwife resides, and all necessary action to prevent the Midwife spreading infection will be promptly taken by the Medical Officer of Health for that District in which the Midwife resides.

It might be urged that a Medical Officer of Health was at a disadvantage because he was not in a position to inspect the case book, bag of appliances, and place of residence of a Midwife who occasionally practised in his District. However, the case book, bag of appliances, and place of residence would not escape inspection; it would be all properly done in the District in which the Midwife resided. Inspection would be not less thorough and complete because done by the Medical Officer of Health for the Borough of Stockport instead of the Medical Officer of Health for Bredbury. Action taken after the occurrence of puerperal fever would not be less efficient because taken by the Medical Officer of Health for Birkenhead instead of the Medical Officer of Health for Higher Bebington.

As to the duties the Borough and District Medical Officers of Health within the Administrative County should be asked to perform, as regards Midwives residing within their respective Areas, and as regards the practice of Midwives, when within their respective Areas, who reside elsewhere.

These may be prescribed as follows:—

1.—To exercise general supervision over all Midwives residing within their area, and over the practice of Midwives, when within their area, who reside elsewhere.

2.—To make a preliminary investigation as regards charges of malpractice, negligence, or misconduct, on the part of any Midwife residing or practising within their area, and to report the result of such preliminary investigation to the County Medical Officer.

3.—To suspend any Midwife from practice, in accordance with the rules under the Midwives Act, if such suspension appears necessary, in order to prevent the spread of Infection.

4.—To report at once to the County Medical Officer the name of any Midwife practising in their area who, to their knowledge, is convicted of an offence.

5.—To report to the County Medical Officer the death of any Midwife, or any change in the name or address of any Midwife residing in their area as soon as they are aware of the same.

6.—To furnish a list (if this has not been already furnished) to the County Medical Officer of all persons at present using the title of Midwife within their area.

7.—To inspect from time to time the case books, bags of appliances, and places of residence of Midwives residing within their area.

8.—To investigate the mode of practice of all Midwives practising within their area.

9.—To report forthwith to the County Medical Officer any suspension of a Midwife from practice, and the reasons for such suspension.

10.—To communicate with the County Medical Officer in any matter of doubt or difficulty arising in connection with the Midwives Act, or the Rules framed thereunder.

As to the duties which the County Council, as the Local Supervising Authority over Midwives within the County (acting through their Midwives Act, 1902, Committee), and the County Medical Officer will perform.

The County Medical Officer suggests that the County Council will do well to investigate, by means of a Member or Members of the Midwives Act Committee, appointed for the purpose, charges of malpractice, negligence, or misconduct on the part of any Midwife within the County, and should a *prima facie* case be established, report the same to the Central Midwives' Board.

The County Medical Officer will undertake to report at once to the said Board the name of any Midwife residing or practising in the County, who, to his knowledge, has been convicted of an offence.

The County Medical Officer will undertake, during the month of January in each year, to supply the Secretary of the Central Midwives' Board with the names and addresses of all Midwives who, during the preceding year, have notified their intention to practice within any Borough or District in the County, and to keep a current copy of the Roll of Midwives accessible at all reasonable times for public inspection.

The County Medical Officer will undertake to report at once to the Central Midwives' Board the death of any Midwife

or any change in the name or address of any Midwife, within the County, so that the necessary alterations may be made in the Roll of Midwives.

Finally, the County Medical Officer suggests that the County Council will do well to give due notice of the effect of the Midwives Act, so far as practicable, by means of posters posted in public places, in every Borough or District within the County, and undertakes himself to give due notice of the effect of the said Act by circular letter (according to a form supplied by direction of the Central Midwives' Board) to all persons, within the County whose names and addresses are supplied to him as at present using the title of Midwife.

The Committee considered this Report, and it was—

RESOLVED—That such Report be received and the recommendations and suggestions contained therein be adopted with the exception of the following paragraph, viz. :—

> The County Medical Officer suggests that the County Council will do well to investigate by means of a Member or Members of the Midwives Act Committee, appointed for the purpose, charges of malpractice, negligence, or misconduct on the part of any Midwife within the County, and should a *prima facie* case be established, report the same to the Central Midwives' Board.

And that in lieu of such suggestion the investigation of the charges referred to be made by the County Medical Officer of Health, who shall report the result thereof to the Committee and furnish a copy of his Report to the Midwife concerned, and at the same time intimate to her the date and time and place of the Meeting of the Committee before which the Report will be laid, so that she may attend such meeting if she desires to do so.

At a meeting of the Midwives Act, 1902, Committee on July 15th, 1904, the Clerk to the Council reported that, with the exception of the Northwich Urban District Council, the whole of the District Councils in the County had passed Resolutions approving of the Resolution passed at the Conference held on the 21st April last.

The County Medical Officer stated that he had issued the following documents to all the Midwives in the County whose names had been supplied to him by the District Medical Officer of Health, and generally reported the action taken by him under the Act since the last Meeting, viz. :—

OFFICE OF COUNTY MEDICAL OFFICER OF HEALTH,
7, SHREWSBURY ROAD,
BIRKENHEAD,
July 14*th*, 1904.

Mrs.....

MADAM,

Your name has been given to me as a reputed Midwife practising or desiring to practice within the Administrative County of Chester, and I have been instructed by the County Council to send you the enclosed notice, drawing attention to the chief provisions of the Midwives' Act, 1902, which materially affects the legal position of all Midwives.

I am also sending you two forms, viz., Form VI. and Form VIII. If you desire to be certified under the Midwives Act, on the ground of holding a Certificate in Midwifery from one of the bodies specified in the Act, or a Certificate approved by the Board, will you fill in Application Form VI., and send it to the Secretary of the Central Midwives' Board, 6, Suffolk Street, London, S.W.? If you desire to be certified under the Midwives Act on the ground of having been in bona fide practice as a Midwife, for at least one year prior to July 31st, 1902, will you fill in Application Form VIII., and send it to the Secretary of the Central Midwives' Board, 6, Suffolk Street, London, S.W.?

Should the Central Midwives' Board grant your application, and enter your name on the Midwives' Roll, you will receive a Certificate to this effect in due course. On obtaining this Certificate I have to request that you will notify me that you have received it, and furnish me with your Christian name and surname, your present address in full, and the number of your Certificate and date thereof, in order that I may enter your name on the County Register of Midwives.

On sending either of the Application Forms to the Secretary of the Central Midwives' Board, the necessary Certificate or Certificates must be enclosed, together with a postal order for ten shillings.

On notifying to me that you have received your Certificate you are not required to enclose any Certificate, and you will have your name and address entered on the County Register of Midwives, without any fee or charge whatever.

I am, Madam,
Yours faithfully,
FRANCIS VACHER.

CHESHIRE COUNTY COUNCIL.

MIDWIVES ACT, 1902.

(2 Edw. 7, c. 17).

The Cheshire County Council desires to draw attention to the chief provisions of the Midwives Act, 1902, which materially affects the legal position of all Midwives.

1. After the 1st April, 1905, no woman may call herself a midwife unless certified as the Act provides.

2. After the 1st April, 1910, no woman may practice (*i.e.*, habitually and for gain attend women in childbirth otherwise than under the direction of a qualified medical practitioner) unless certified as the Act provides.

3. Any woman who before the 31st March, 1905, claims to be certified under the Act may be so certified if

(*a*) She holds a Certificate in Midwifery from the Royal College of Physicians of Ireland, or from the Obstetrical Society of London, or the Coombe Lying-in Hospital and Guinness's Dispensary, or the Rotunda Hospital for the Relief of the Poor Lying-in Women of Dublin.

Or,

(*b*) She holds such other Certificate in Midwifery as the Central Midwives' Board may approve.

Or,

(*c*) She satisfies the Central Midwives' Board that she has been in *bonâ fide* practice as a midwife for at least one year prior to the 31st July, 1902, and that she bears a good character.

4. A woman not included within one of these three classes will be required to pass the examination of the Central Midwives' Board before obtaining a Certificate.

5. Applications to be certified must be made to the Central Midwives' Board in accordance with the rules and regulations to be prescribed by the Board, and such fees will be payable for the examination and the Certificate as the Privy Council may sanction.

6. The names of all certified midwives will be entered on the Midwives' Roll.

7. Every certified midwife must before commencing to practise, or holding herself out as practising, give notice in writing, on the prescribed form, to the local supervising authority, and must give a similar notice in the month of January in every year during which she continues to practise.

8. No certified midwife may employ an uncertified substitute.

9. A midwife may be suspended from practise in order to prevent the spread of infectious disease, or may be removed from the roll for disobeying the rules and regulations of the Central Midwives' Board, or for other misconduct.

10. Penalties are prescribed for any infringement of the foregoing provisions (1) (2) and (7); also for obtaining a certificate by false representation, or for wilful falsification of the Midwives' Roll.

11. An appeal lies to the High Court of Justice from any decision of the Central Midwives' Board removing a midwife's name from the Roll, and to the Court of Quarter Sessions from any Summary Conviction for an offence under the Act.

REGINALD POTTS,
Clerk of the County Council of Cheshire, being the Local Supervising Authority under the Act.

RESOLVED—That the action taken by the County Medical Officer of Health to give notice of the provisions of the effect of the Act to persons at present using the title of Midwife be approved, and which the Committee deem to be sufficient.

At a Meeting of the Midwives Act, 1902, Committee, on October 21st, 1904, the County Medical Officer of Health reported on the progress of the Registration of Midwives within the County, for the Quarter ending September 30th. Though he had originally sent out 533 circulars (accompanied by forms of application to be registered) to reputed Midwives, whose names and addresses had been given him, and since then had issued 47 more circulars (accompanied by forms) to other reputed Midwives, whose names and addresses had been more recently supplied, only 41 women had applied to be registered and been entered in the County Register.

After considering this Report, the Committee

RESOLVED—That the County Medical Officer of Health call the attention of the District Medical Officers of Health to the small number of Midwives registered up to the present time, and request them to explain to those Midwives in their respective districts who have not already been registered that they will be precluded by the Act from calling themselves Midwives after April 1st, 1905, unless they are in the meantime duly registered.

A circular letter was accordingly addressed to Medical Officers of Health for Boroughs and Districts in the County, and

steps were taken by many of them to urge the Midwives, within their respective areas to be registered. At the end of the year 1904, there were 152 women entered on the County Register of Midwives.

Erysipelas is notified, but not as thoroughly as most notifiable diseases. Certainly, cases which it would be difficult to maintain were true erysipelas are occasionally reported as erysipelas. However, as the disease is a specific infectious one, characterised by spreading inflammation of the skin, due to the presence of a micro-organism, and especially liable to attack debilitated persons, puerperal patients, and those suffering from wounds, it is expedient and necessary that it should be notified. Provided all the actual cases of the disease are reported, it is of little moment if an occasional case of simple inflammation of the skin is notified in error. Erysipelas is undoubtedly associated with insanitary conditions, and this is witnessed to in two or three Reports. Cases notified should therefore be investigated as carefully as cases of diphtheria ordinarily are; premises where the disease arises should be examined, defects remedied and disinfection undertaken. At present in many districts very little is done to combat erysipelas or prevent its spread, and in some districts nothing is done.

During 1904 there were 175 cases notified, and 14 deaths in the Municipal Boroughs, there were 219 cases notified, and 6 deaths in the other Urban Districts, and there were 98 cases notified, and 6 deaths in the Rural Districts. Of these 492 cases only 7 were removed to Hospital. In 1903 the number of cases notified was 363, and the number of deaths was 26. In 1902 the number of cases notified was 383, and the number of deaths was 14. In 1901 the number of cases notified was 376, and the number of deaths was 23. In 1900 the number of cases notified was 393, and the number of deaths was 14. In 1899 the number of cases notified was 435, and the number of deaths was 10. In 1898 the number of cases notified was 348, and the number of deaths was 15. In 1897 the number of cases notified was 383, and the number of deaths was 22. In 1896 the number of cases notified was 355, and the number of deaths was 18. In 1895 the number of cases notified was 309, and the number of deaths was 20. In 1894 the number of cases notified was 397, and the number of deaths was 23. In 1893 the number of cases notified was 538, and the number of deaths was 27. In 1892 the number of cases notified was 247, and the number of deaths was 36. Thus the number of cases notified in 1904 was 115 above the average in 1892—1903, and the number of deaths in 1904 was 5 above the average in 1892—1903.

Other Septic Diseases.—This is a term which appeared for the first time in the new forms issued for 1900 by the Local Government Board; there being no term corresponding to it

previously in use. During 1904 the deaths of 26 persons came under this heading. During 1903 there were 39 deaths under this heading, during 1902 there were 37 deaths under this heading. During 1901 there were 30 deaths, and during 1900 there were 31 deaths under this heading.

Phthisis.—In the Municipal Boroughs, phthisis was certified as the cause of 171 deaths, in the other Urban Districts it was certified as the cause of 257 deaths, and in the Rural Districts it was certified as the cause of 114 deaths. There were thus 542 deaths in Cheshire during 1904. In the Municipal Boroughs the death-rate was 0.99 per 1000 living, in the other Urban Districts it was 0.96, and in the Rural Districts it was 0.68. The phthisis death-rate for Cheshire in 1904 was 0.89. This death-rate for the whole County in 1903 was 0·86, it was 0.97 in 1902, it was 1.02 in 1901, it was 0.95 in 1900, it was 1.06 in 1899, it was 1.14 in 1898, it was 1.09 in 1897, it was 1.14 in 1896, it was 1.22 in 1895, it was 1.12 in 1894, it was 1.25 in 1893, and it was 1.31 in 1892. The phthisis death-rate for the County in 1904 was therefore below 0.20 the average in the twelve years, 1892-1903. However, quite high phthisis death-rates were recorded in 1904 from Altrincham (1.65), Ashton-upon-Mersey (1.59), Marple (1.41), the Borough of Macclesfield (1.3), Nantwich Urban District (1.27), Hoylake and West Kirby (1.2), the Borough of Congleton (1·2), and the Borough of Stalybridge (1.12).

In many Districts handbills, giving general rules to be observed with reference to sufferers from this disease, have been issued and are distributed as occasion requires. The bills are drafted on the lines of the "Memorandum on Precautions against the Infection of Phthisis or Consumption," issued by direction of the County Council in February, 1894. These handbills are all calculated to impress upon those who receive them that phthisis is a distinctly infectious disease, and that active measures should be taken to prevent its spread. The Medical Officer of Health for Crewe notes that disinfection of houses, bedding, etc., is carried out in all fatal cases of phthisis or tuberculosis, free of charge. The Corporation also enable Medical Practitioners to obtain the bacteriological examination of specimens of sputum from suspected cases of phthisis. It is also mentioned that the following bye-law came in force in the Borough towards the close of 1902: "No person shall spit on the floor, side, or wall of any public carriage, or of any public hall, public waiting-room, or place of public entertainment, whether admission thereto be obtained upon payment or not, within the Borough. Any person offending against this bye-law shall be liable to a fine not exceeding £5." Copies of this bye-law are posted up in public places, and doubtless will be effective in diminishing a source of danger.

The Medical Officer of Health for the Borough of Hyde has induced his Authority to adopt a scheme for the voluntary notifi-

cation of phthisis. After a notification is received, the Inspector visits the house, and leaves there a printed leaflet of instructions.

In the Borough of Macclesfield houses infected owing to phthisis are disinfected without any charge being made. The Authority in this Borough has issued a printed placard warning people not to spit on the walls or floors, which has been hung up in the common lodging-houses. It is hoped that publicans will hang these placards in their bar-parlours, and that manufacturers will see their way to having the placards hung in their mills, workshops, etc.

The Medical Officer of Health for the Urban Districts of Knutsford, Middlewich, and Winsford, and the Rural District of Bucklow, reports that by direction of these Authorities he sent out a circular in May, 1901, to medical men practising wholly or partially in these Districts, offering a half-crown fee for each voluntary notification of a case of phthisis, but very few notifications were received. However, in these Districts, disinfection where cases of phthisis exist, and especially after death therefrom, is offered. Accordingly, in several instances in these Districts, disinfection has followed a fatal case of phthisis or tuberculosis. The Ashton-upon-Mersey District Council also disinfect premises in which death from phthisis has occurred, and so do the Bredbury and Romiley District Council.

In January, 1902, the District Council of Hoylake and West Kirby resolved to carry out the disinfection of premises infected from all cases of phthisis. Accordingly, circulars were sent to all practitioners in the District, intimating that this work would be done free of cost, on request. Seven houses were disinfected in 1902, six houses were disinfected in 1903, and five houses were disinfected in 1904, after deaths from phthisis.

The Provision of Sanatoria for Consumptive Patients.—Early in the year 1902 a communication was received from the Clerk to the Guardians of the Wirral Poor Law Union, intimating that the Workhouse Committee had under consideration the desirability of separating consumptive patients from other sick inmates in their Infirmary, but that they had no convenient wards on the Workhouse premises available for the purpose. There seemed no prospect of obtaining any accommodation at the Liverpool Sanatorium, Delamere Forest, or at the Sanatorium being erected at Heswall, so a circular letter was sent to all the Unions in the County, inviting them to send delegates to a Conference, to consider if it might not be practicable to unite, with the view of providing a Sanatorium for pauper cases in the County. This Conference was held, being attended by representatives from most of the large Unions in the County, and the following Resolution was passed unanimously:—

"That this Conference requests the County Council to

consider the advisability of providing Sanatoria for the treatment of Consumptive cases.

In response to this communication, the Sanitary Authorities and Boards of Guardians in the County were invited to send delegates to a Conference, which was in due course held at Crewe, on July 10th, 1902. This Conference was well attended, and after a full discussion on the subject of the provision of a Sanatorium or Sanatoria for the County, for the treatment of consumptives, the following resolution was passed :—

"That in the opinion of this Conference—but without in any way committing the several Authorities represented—it is desirable that a Sanatorium or Sanatoria should be established in the County for the treatment of Consumption, and that the County Council should take the necessary steps, under the Isolation Hospital Acts, with a view to an order being made including all the Sanitary Districts in the County a Hospital District, for the establishment of such Sanatorium or Sanatoria, and at the same time obtain the consent of the Local Government Board to include "Phthisis" as an infectious disease within the meaning of the Infectious Disease (Notification) Act."

A copy of this Resolution was sent to the Sanitary Authorities and Boards of Guardians in the County, with a request for an expression of opinion thereon. A large number of replies were before the Public Health Committee, on October 31st, 1902. when (as other replies had yet to come in) their consideration was adjourned.

During 1903 replies came in slowly. At a meeting of the Public Health Committee on October 23rd, 1903, a statement was made showing the results of enquiries, and the consideration of the matter was again adjourned till further replies had been received.

At a meeting of the Isolation Hospitals Acts Sub-Committee, held at Crewe, on October 6th, 1904, the above Resolution was further considered, and the Clerk reported that the Local Government Board had approved the Order made by the Council at its Meeting on February 12th, 1903, ordering that "Pulmonary Tuberculosis" should be considered an infectious disease, for the purposes of the Isolation Hospitals Acts, 1893 and 1901.

The Clerk also reported that of the Sanitary Authorities, 2 Boroughs, 22 other Urban Districts, and 7 Rural Districts approved of the above Resolution passed at the Conference ; 2 Boroughs, 4 other Urban Districts, and 4 Rural Districts objected to the same Resolution ; and 2 Boroughs, 9 other Urban Districts, and 2 Rural Districts were neutral, or had not definitely replied. The summary was as follows :—

	Sanitary Authorities.	Population, Census, 1901.	Assessable Value. £
Approve ...	31 ...	276,142 ...	1,544,839
Object ..	10 ...	130,984 ...	652,919
Neutral, or no reply ...	13 ...	184,479 ...	1,106,119
Total Assessable value of County ...			£3,303,877

As to the Boards of Guardians, the following were their observations on the Resolution passed at the Conference:—

Ashton-under-Lyne ...	Approve.
Birkenhead	Approve.
Bucklow	Approve.
Chester	In sympathy with all efforts made by the Council to mitigate the scourge of Consumption, but cannot see its way to support the resolution.
Congleton	Object.
Hayfield	Decided to do nothing.
Macclesfield ...	Decided to await particulars before committing themselves.
Nantwich	Unable to express any opinion until they receive more definite information.
Northwich	Will give favourable consideration to Resolution, but require further information.
Runcorn	Consider some provision should be made for the establishment of a Sanatorium as an experiment.
Stockport	Approve.
Tarvin	Object.
Whitchurch	Approve, provided that financial arrangements satisfactory to the Board are made.
Wirral	Approve, but submit to the Council the necessity of providing in such Institution for cases looked upon as incurable and urge the Council to take the earliest opportunity of dealing with this important subject.

After the whole question had been discussed at some length, it was

Resolved—That the County Medical Officer of Health report as to what, in his opinion, is the most suitable form of Sanatorium for Cheshire, if the Council should

hereafter determine to provide a Sanatorium or Sanatoria for the County, or any part thereof, together with an estimate of the cost thereof, and also to report the results which experience has shown to ensue from the treatment of pulmonary tuberculosis in Sanatoria in this and other Counties, and generally on the subject.

At a Meeting of the Public Health Committee held at Crewe on October 21st, the portion of the Sub-Committee's Report referred to was adopted, and at the Quarterly Meeting of the Council, held at Chester Castle on November 10th, the same was adopted.

In due course the County Medical Officer submitted a Report as directed. This Report was dated December 15th, 1904.

Other Tubercular Diseases is a heading which appeared in the new forms which were issued by the Local Government Board for the mortality returns of 1900, 1901, 1902, 1903, and 1904. There was nothing corresponding to it previously in use During 1904 the deaths of 342 persons were ascribed to other tubercular diseases, viz. :—117 in the Municipal Boroughs, 165 in the other Urban Districts, and 60 in the Rural Districts.

Of the 342 who died 134 were infants in their first year, 92 were children a year old and under 5 years, 36 were between 5 years and 15, 20 were between 15 and 25 years, 53 were between 25 and 65 years, and 7 were 65 years and upwards.

The death-rate in the County from phthisis being 0.89, and the death-rate from other tubercular diseases being 0.56, the whole tubercular disease death-rate, per 1000 living, was 1.45 in 1904. In 1903 the death-rate from tubercular diseases other than phthisis was 0.42, and the death-rate from all tubercular diseases was 1.39. In 1901 the death-rate from tubercular diseases other than phthisis was 0.52, and the death-rate from all tubercular diseases, including phthisis, was 1.54. In 1900 the death-rate from tubercular diseases, other than phthisis, was also 0.52, and the death-rate from all tubercular diseases was 1.47.

Tuberculosis in Cattle.—The cities of Liverpool and Manchester, and other towns a little to the north of Cheshire, have now the right to send Veterinary Surgeons to inspect cattle belonging to dairy-farms supplying the said cities and towns with milk. As a consequence, letters are received, from time to time, intimating to the County Authority that cows with tuberculous udders have been found on certain farms, and steps are taken to see that the infected cows are removed from dairy stock and "dried off," and that they are not sold or slaughtered without previous notice. Indeed, all practicable steps are taken to see that

tuberculous meat or milk is not sold or offered for sale in the County.

Cancer.—The term "Cancer, malignant disease," appears in the new forms issued by the Local Government Board for use in 1900, 1901, 1902, 1903 and 1904. There was no term corresponding to this in previous use. During 1904 the deaths of 484 persons came under this heading, viz.: 127 in the Municipal Boroughs, 220 in the other Urban Districts, and 137 in the Rural Districts. The cancer death-rate in 1904 was therefore 0.79 per 1000 living. In the Municipal Boroughs this death-rate was 0.73, in the other Urban Districts it was 0.82, and in the Rural Districts it was 0·81. It is interesting to note that only 6 of the deaths from cancer were of persons under 15 years of age, 5 were of persons between 15 and 25 years, 307 were of persons between 25 and 65 years, and 166 were of old people 65 years of age and upwards.

In the Borough of Congleton the cancer death-rate has been exceptionally high for years. In 1900 it was 1.39, in 1901 it was 1.48, in 1902 it was 1.49, in 1903 it was 1.21, and in 1904 it was 1.3. In the Borough of Macclesfield the cancer death-rate was rather high; in 1903 it was (1.04), and in 1904 (1.07). In 1904 this death-rate was exceptionally high in Bredbury and Romiley (1.67), and in Wilmslow (1.68), and high in Bollington (1.14), Hoylake and West Kirby (1.14), and Sale (1.04).

Any contribution to the better understanding of so terrible a disease should be welcomed, and most Medical Officers of Health could contribute some facts and observations. There are many points as regards cancer which require elucidating. Among the questions pressing to be answered are the following:—Is cancer a parasitic disease? Is it infective? Does it haunt houses and places? Is it communicated by domestic animals? Is it associated with the ingestion of any food, animal, or vegetable? Is the disease increasing?

Bronchitis, Pneumonia, &c—In the old mortality-forms, made use of by Medical Officers of Health, there used to be a column headed "Bronchitis, Pneumonia, and Pleurisy." In the new forms issued by the Local Government Board, deaths from bronchitis, pneumonia, pleurisy, and other diseases of the respiratory organs, have to be entered in four separate places. Grouping them together, it appears that in 1904 there were 1,539 deaths due to these diseases, viz.:—541 in the Municipal Boroughs, 670 in other Urban Districts, and 328 in the Rural Districts. The death-rate for the whole County was therefore 2.52 per 1,000 living. In the Municipal Boroughs this death-rate was 3.12, in the other Urban Districts it was 2.49, and in the Rural Districts it was 1.95. This shows that the mortality was relatively higher in the Municipal Boroughs than in the other Urban Districts, and relative-

ly higher in the towns than in the Rural Districts. During 1903 this death-rate was 2.22 for the County, being 2.81 in the Municipal Boroughs, 2.13 in the other Urban Districts, and 1.75 in the Rural Districts. During 1902 this death-rate was 2.58 for the County, being 3.14 in the Municipal Boroughs, 2.53 in the other Urban Districts, and 2.08 in the Rural Districts. During 1901 this death-rate was 2.54 for the County, being 3.57 in the Municipal Boroughs, 2.30 in the other Urban Districts, and 1.91 in the Rural Districts. During 1900 this death-rate was 2.74 for the County, being 3.16 in the Municipal Boroughs, 2.77 in the other Urban Districts, and 2.33 in the Rural Districts. The figures for 1900 and more recent years, as they include deaths from "other diseases of the respiratory organs," are not quite comparable with those of previous years.

Alcoholism.—The term "Alcoholism, Cirrhosis of Liver" appears in the new forms issued by the Local Government Board, for use in 1900, 1901, 1902, 1903, and 1904, and there was nothing corresponding to it in previous years. During 1904 the deaths of 105 persons came under this heading, viz.: 26 in the Municipal Boroughs, 44 in the other Urban Districts, and 35 in the Rural Districts. Thus the alcoholism death-rate was 0.17 per 1000 living. During 1903, the deaths of 113 persons came under this heading, viz.: 37 in the Municipal Boroughs, 38 in the other Urban Districts, and 38 in the Rural Districts. Thus the alcoholism death-rate was 0.18 per 1000 living. During 1902 the deaths of 135 persons came under this heading, viz.: 38 in the Municipal Boroughs, 73 in the other Urban Districts, and 24 in the Rural Districts. Thus, the alcoholism death-rate was 0.22 per 1000 living. In 1901 the deaths of 107 persons came under this heading, and in 1900 the deaths of 124 persons came under this heading. This is certainly a bad record. Unfortunately, alcoholism is so largely concerned in causing disease and premature death, directly or indirectly, that the number of times in which it is certified THE cause of death is of little significance.

Venereal Diseases.—This is also a term which appears in the new forms issued by the Local Government Board for use in 1900, 1901, 1902, 1903, and 1904. No term corresponding thereto was in use in forms issued in previous years. During 1904 the deaths of 27 persons came under this heading, that is 0.04 per 1,000 living. During 1903 the deaths of 23 persons came under this heading; in 1902 the deaths of 23 persons came under this heading; in 1901 the deaths of 26 persons came under this heading, and in 1900 the deaths of 24 persons came under this heading. It is significant that out of the 27 who died from venereal diseases in 1904, 21 were under one year old—77.7 per cent.

Premature Birth is another term which appears in the new forms issued by the Local Government Board for use in 1900, 1901, 1902, 1903, and 1904. During 1904 the deaths of 323 infants were ascribed to premature birth—0.53 per 1,000 living. During 1903 the deaths of 293 infants were ascribed to premature birth. During 1902 the deaths of 300 infants were ascribed to premature birth. During 1901 the deaths of 306 infants were ascribed to premature birth, and during 1900 the deaths of 273 infants were ascribed to premature birth.

Diseases and Accidents of Parturition.—This is another term which appears in the new forms issued for use in 1900, 1901, 1902, 1903, and 1904. During 1904 the deaths of 55 persons came under this heading. As the number of births during the year was 16,049 in 1904, it would appear that 3.42 in each 1,000 child-births were fatal to the mothers in addition to those fatal from puerperal fever. Calculated in the same way, 3.74 in each 1,000 child-births in 1903 were fatal to the mothers, 4.22 in each 1,000 child-births in 1902 were fatal to the mothers, 4.31 in each 1,000 child-births in 1901 were fatal to the mothers, and 3.73 in each 1,000 child-births in 1900 were fatal to the mothers. Doubtless the proportion is actually larger than this.

Heart Diseases.—In the Municipal Boroughs 267 deaths were due to heart diseases (equal to a death-rate of 1.54), and in the other Urban Districts 392 deaths were due to heart diseases (equal to a death-rate of 1.46.) In the Rural Districts 275 deaths were due to heart diseases (equal to a death-rate of 1.63). The death-rate from heart diseases in the whole County was 1.53 in 1904. This death-rate was 1.34 in 1903, it was 1.37 in 1902, 1.44 in 1901, 1.45 in 1900, 1.36 in 1899, 1.37 in 1898, 1.41 in 1897, 1.39 in 1896, 1.45 in 1895, 1.32 in 1894, 1.37 in 1893, and 1.50 in 1892.

Accidents.—This is yet another term which appears in the new forms issued by the Local Government Board for use in 1900, 1901, 1902, 1903, and 1904. During 1904 the deaths of 258 persons came under this heading. Thus the death-rate from accident was equal to 0.42 per 1,000 living. In 1903 there were 214 deaths ascribed to accidents (0.35 per 1,000 living), in 1902 there were 283 deaths ascribed to accidents (0.47 per 1,000 living), in 1901 there were 273 deaths ascribed to accidents (0.45 per 1,000 living), and in 1900 there were 270 deaths ascribed to accidents (0.43 per 1,000 living).

Suicides.—This term also appears in the new forms issued by the Local Government Board, for use in 1900, 1901,

1902, 1903, and 1904. During 1904 the deaths of 85 persons came under this heading—0.14 per 1,000 living. During 1903 the deaths of 58 persons came under this heading, that is 0.09 per 1,000 living. During 1902 the deaths of 73 persons came under this heading: that is, 0.12 per 1,000 living. During 1901 the deaths of 54 persons came under this heading: that is 0.09 per 1,000 living. During 1900 the deaths of 62 persons came under this heading: that is 0.10 per 1,000 living.

Unsatisfactory Certificates of Deaths.—Many Medical Officers of Health find difficulty in classifying the causes of death in the Registrar's returns, owing to the number of causes certified in some instances. Many examples of this might be given, but two will suffice; a death of a child which took place in Runcorn Rural District was certified as due to measles, scarlatina, diphtheria, and pneumonia; and a death of an adult which took place in Bucklow Rural District was certified as due to Bright's disease, influenza, pneumonia, and heart failure. Occasionally, also, the cause of death assigned is too vague, e.g., "tumour," "coma," "apnœa."

Rabies.—There was no outbreak of canine rabies during 1904. This exemption was, no doubt, in part due to the activity of the police, who during the year seized 2,316 stray dogs, of which 2,081 were killed.

Anthrax.—In the first quarter of 1904 there were 27 outbreaks of this disease. Twenty cattle, 8 sheep, 6 pigs, and 1 horse died. One cow was killed by order of the owner. In the second quarter there were 15 outbreaks of this disease. Eleven cattle, 1 sheep and 8 pigs died. Two pigs were killed by order of the owner.

One cow was killed by order of the owner and sold to a butcher, who sent it for sale at the Abattoir, Manchester, where the carcase was found to be diseased, and was destroyed. The butcher was afterwards affected with anthrax, and died.

In the third quarter there were 21 outbreaks of this disease. Eighteen cattle, 5 sheep, 5 pigs, and 1 pony died. Eight pigs were killed by order of the Local Authority, under the Cheshire (Anthrax) Order, 1904, and compensation for the same (£9 10s. 0d.) given.

In the fourth quarter there were 24 outbreaks of this disease. Twenty-four cattle, 1 sheep and 1 horse died.

The infected carcases are promptly cremated, and the premises are cleansed and disinfected as far as practicable, under the direction of the police.

Glanders and Farcy.—No outbreak of glanders or farcy occurred during 1904.

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

Measles was added to the list of notifiable diseases by the Alderley Edge Urban District Council in 1893.

In October, 1897, the Urban District Council of Ashton-upon-Mersey, by resolution, ordered that measles, German measles, and whooping-cough, be added to the list of notifiable diseases for that District. This order has been in force since November 6th, 1897. Towards the close of 1899 Lymm Urban District Council decided to make measles and German measles notifiable.

Wilmslow Urban District Council has since ordered that measles should be added to the list of notifiable diseases for that District.

Chicken-pox was made notifiable in Lymm early in 1902, and remains notifiable.

In February, 1903, the Town Council of Hyde, by resolution, ordered that chicken-pox be added to the list of notifiable diseases for that Borough.

Chicken-pox has been notifiable in Runcorn Rural District since 1902.

The Infectious Disease (Notification) Extension Act.—This short Act extends to the whole of England and Wales, as from January 1st, 1900, and without previous adoption by those Local Authorities that have not already adopted compulsory notification, the provisions of the Infectious

* Plague has lately been added to this list.

Disease (Notification) Act, 1889. Prior to the passing of this Act it was found that, either by the adoption of the Act of 1889, or under separate Local Acts, the notification of infectious diseases was compulsory in districts having an aggregate population of upwards of 28,000,000 out of 30,000,000 inhabitants of England and Wales, and that the system had been of the greatest assistance to Sanitary Authorities and their Officers in dealing with outbreaks of infectious disease. In those towns where notification is compulsory under Local Acts, the provisions of these Local Acts (with the single exception of that at Huddersfield) will be superseded by those of the general Act of 1889.

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

Altrincham Urban District—Lloyd's Fever Hospital, and a temporary Hospital for small-pox.

Bucklow Rural District and Alderley Edge, Ashton-upon-Mersey, Hale, Knutsford, Sale and Wilmslow Urban Districts—35 beds in the Withington Hospital at Baguley. and a temporary Hospital for small-pox.

Congleton Rural District, Congleton Municipal Borough, and Alsager, Buglawton, and Sandbach Urban Districts—A temporary Hospital for small-pox at Arclid.

Crewe Municipal Borough—Crewe Isolation Hospital, to which a pavilion for diphtheria has lately been added, and a small farm house and corrugated iron building for small-pox cases.

Hyde Municipal Borough—Hyde Isolation Hospital, and a temporary hospital for small-pox. A fine new Hospital is in course of erection.

Hollingworth and Mottram Urban Districts and Tintwistle Rural District—A temporary Hospital for small-pox.

Lymm Urban District—A new Hospital was erected in 1904.

Macclesfield Municipal Borough—A temporary Hospital and another for small-pox. Two cottages were purchased in 1904 for isolating small-pox "contacts" and "suspects.

Macclesfield Rural District—A temporary Hospital for small-pox.

Nantwich Rural District and Nantwich Urban District —A temporary Hospital for small-pox.

Northwich Rural District and Northwich, Winsford, and Middlewich Urban Districts—A fine new Hospital is in course of erection. Northwich Rural and Urban Districts have provided temporary Hospitals, and Winsford Urban District has provided a small temporary Hospital.

Runcorn Rural District—A temporary Hospital for small-pox at Moore.

Runcorn Urban District—Runcorn Isolation Hospital.

Wallasey Urban District—Wallasey Isolation Hospital, lately enlarged, and temporary Hospital for small-pox.

Wirral Rural District and Higher Bebington, Lower Bebington, Bromborough, Ellesmere Port and Whitby, Neston and Parkgate, Hoylake and West Kirby Urban Districts—Spital Isolation Hospital to which a new pavilion has lately been added, and a hospital at Greasby used for small-pox.

Some few Districts have also made arrangements to have infectious cases admitted to the Isolation Hospital at Baguley or elsewhere.

The only District which provided a new permanent Isolation Hospital in 1904 was Lymm. However, the Corporation of Hyde, and the Northwich Rural and Northwich, Winsford, and Middlewich Urban Districts Joint Isolation Hospital Board, made good progress with their fine new Isolation Hospitals in 1904.

The Borough of Congleton is still entirely without any accommodation for infectious patients other than small-pox; the Corporation are endeavouring to make provision jointly with neighbouring Authorities, but in endeavouring to carry out the scheme causes of delay have arisen. Some delay has been occasioned owing to one of the combining Authorities belonging to another County.

At Crewe, during 1904, there were admitted into Hospital 285 cases of scarlet fever, and 13 cases of diphtheria or membranous croup. At the beginning of 1904 there were 34 scarlet fever patients in Hospital, and at the end of the year there remained 28 patients. Seven deaths took place in Hospital. In all, 81 per cent. of the notified scarlet fever cases were removed to Hospital—a larger proportion than in any previous year. The accommodation arranged for by the Corporation of Dukinfield is still only two beds at Hyde

Hospital, for which a sum of £22 per annum is paid. In addition, there is a charge of £2 2s. 0d. per case for medical attendance in Hospital, and 1s. 3d. a day for food. Where more than two beds are occupied, the additional charge is at the rate of £3 3s. 0d. per case for medical attendance in Hospital. Further accommodation should be arranged for. At Hyde there were 113 cases belonging to the Borough isolated in Hospital. Of these, 46 were cases of small-pox, and the remainder were cases of scarlet fever. Only 2 of the cases (both small-pox) proved fatal. There were also 104 cases admitted to Hospital from districts outside the Borough, of which 5 proved fatal. Hyde also received into Hospital 13 cases of small-pox and 1 case of scarlet fever from districts in other counties. The building of the new Hospital, which was commenced early in 1903, was nearing completion at the close of 1904. In the new Hospital accommodation will be provided for 32 scarlet fever cases, 10 enteric fever cases, 10 diphtheria cases. There will also be an Observation Block to accommodate 2 cases, the nature of which is uncertain. At Macclesfield Borough, in 1904, there were 85 patients admitted to Hospital—52 (3 of which were from Bollington), were suffering from small-pox, 29 were suffering from scarlet fever, and 3 from diphtheria, together with a doubtful case. Six of the patients died, viz., 4 (including 1 Bollington patient) from small-pox, 1 from scarlet fever, and 1 from diphtheria.

Stalybridge has now a small-pox Hospital, situated at Hartshead, and managed by the Ashton-under-Lyne and District Joint Small-pox Hospital Board, on which Stalybridge is represented by two members. The 13 cases notified in the Borough in 1904, were thus isolated, and no other cases of infectious disease were isolated. Alsager is without accommodation for the isolation of infectious disease other than small-pox, but during 1903 it joined the Rural District of Congleton, the Borough of Congleton, and the Urban Districts of Sandbach, Buglawton, and Biddulph, in applying to the Local Government Board to issue a Provisional Order forming these Districts into a Joint Hospital District. The Inquiry with reference to this application was held at Congleton Town Hall on January 22nd, 1904. Lloyd's Fever Hospital was, as usual, of great use to Altrincham in 1904. Sixty cases of scarlet fever, 3 of diphtheria, and 1 case of enteric fever were admitted in 1904. This Hospital is not adapted for treating two diseases simultaneously. It has already been reported that the County Council consider this Hospital inadequate, and the scheme for its replacement by a new Hospital is under consideration. Architects have been instructed to prepare plans for a Hospital (to contain 30 beds) so arranged as to enable the Authority to deal simultaneously with two or three distinct diseases.

Bollington Urban District Council have now no prospect of getting a Hospital for nothing, and will have to make such provision as seems practicable. They have come to an arrangement with the Corporation of Macclesfield under which on payment of an annual fee of £30 they have the right to use two beds in the Macclesfield Small-pox Hospital. They are also charged for the maintenance of patients and for Medical Attendance on the patients. No provision has been made for the isolation in Hospital of cases other than small-pox. The District Medical Officer points out that such provision is needed, as he finds it almost impossible to isolate infectious cases at home. Bowdon Urban District Council, which used to make use of Lloyd's Fever Hospital, have arranged to send their infectious cases to the Sanatorium at Baguley, but no cases were sent there in 1904. Infectious cases which occur at Bredbury and Romiley are still sent to Hyde Hospital. Two beds are reserved for the use of the District at present and 4 beds will be reserved for their use as soon as the new Hyde Hospital is opened. The Urban District Council for Cheadle and Gatley have arranged for 3 beds to be reserved for the use of their District at Baguley Sanatorium, and have joined Heaton Norris Urban District in building an Iron Hospital for small-pox (to contain 8 beds), on a site near the Cheadle Outfall Works. Compstall Urban District Council have arranged with the High Peak Hospital Committee to receive into their Hospital infectious cases which require isolation. No arrangement has been made for the the isolation in hospital of any infectious case which may arise in Handforth. The Urban District of Hazel Grove and Bramhall isolate small-pox cases at Whitehill Hospital, Stockport, or Hyde Hospital. Other cases do not appear to be isolated. At Hollingworth, Mottram, and Tintwistle there is still no accommodation for cases other than small-pox. Cases belonging to Hoole are treated, by arrangement, in Chester Isolation Hospital. At Marple all cases of infectious disease (including small-pox) which need isolating, are dealt with by the Hyde Corporation.

Some progress has been made towards providing Isolation Hospital accommodation for Nantwich. In the Annual Report for 1902 it was stated that a Joint Hospital Board has been constituted for the Nantwich Urban and Rural Districts, under Section 279 of the Public Health Act, 1875. It was suggested that a Hospital for 16 beds (about half the number proposed by the County Medical Officer) might be sufficient for a time, provided the administrative portions of the Hospital were large enough to permit of the Hospital being extended by building another pavilion. It was also stated that a site had been approved by the Local Government Board and purchased. During 1903 plans for a Hospital were prepared and sent to the Local Government Board, together with an application of the Nantwich Joint Hospital Board, for sanction to borrow £6,800 for building the Hospital. The Official Inquiry was held on December 3rd, 1903, and the plans were approved,

subject to a few slight alterations in matters of detail, and the provision of an Observation Block to contain not less than 4 beds. The Inspector said that, if the Joint Hospital Board agreed to provide an Observation Block, an application should be sent in forthwith for sanction to borrow an increased sum of money, and the matter could go forward without a second Inquiry.

This was done, and a loan for the whole amount required was in due course sanctioned. Shortly afterwards contracts for the erection of the Hospital were entered into, and building operations have been going on since. No doubt the Hospital will be ready for occupation in 1905.

Isolation Hospital accommodation is also being provided for Northwich Urban and Rural Districts. In the Annual Report for 1902 it was mentioned that six acres of land in the Parish of Davenham had been purchased for the proposed Joint Hospital. The necessary plans for buildings were prepared and approved in 1903, and building operations were well advanced in 1904.

Runcorn Hospital was only used for the isolation of 4 cases in 1904. This Hospital consists of an Administrative Block and one pavilion. As originally planned there were to be two pavilions, but the second has never been erected.

At Wallasey there was again great pressure on the space available. The new pavilion, which was building in 1902, was opened on January 13th, 1903. It is one of the best and most completely equipped fever-pavilions in the County, and gives accommodation for 12 female patients and 12 male patients (with cots for children in addition) and 2 convalescent-wards, while the kitchen, bath-room, sanitary appliances and heating arrangements are as satisfactory as they could be made. The additions to the Administrative Block, also completed in 1903, enable all the nurses to be accommodated there, and the house where some of them used to lodge has been given up. A new Discharging Block was also finished and opened in 1903, and forms a much needed addition to the Hospital. It may be mentioned, too, that the laundry has been enlarged and brought up to date, and that a porter's lodge has been built, and an ambulance-shed. Thus all the additions and alterations at Mill Lane Hospital were completed in 1903. North Mead House, which was never a convenient auxiliary hospital, was given up in the latter part of 1903. The new pavilion proved of the greatest advantage in the treatment of scarlet fever during 1904, but as the year advanced the pressure on its space was great, and it was resolved to erect a fourth pavilion, which will also probably be used for scarlet fever. This was in course of erection during 1904 and is now rapidly approaching completion. It will contain 20 beds exclusive of cots. The new pavilion was rendered necessary when it was determined to use the site of North Mead House for Public Offices.

In the absence of epidemics the little Hospital at Winsford is said to have been equal to requirements. It cannot be used for more than one disease at a time, but it served for the isolation of 5 cases of scarlet fever in 1904.

When cases need isolating at Yeardsley-cum-Whaley they are sent to Hyde Hospital, but there were none isolated in 1904.

The Medical Officer for Bucklow Joint Hospital Board issued an Annual Report for 1903 and 1904. The 35 beds the Board are entitled to use at the new Baguley Hospital have been fairly well occupied since December 8th, 1902, when the Baguley Hospital was opened. Two patients were admitted in December, 1902, and were remaining in Hospital at the beginning of 1903. Altogether 124 cases were dealt with in 1903, the largest number of patients at one time being 32, thus the limit was never reached. During 1904 there were 116 cases admitted, viz.:—96 cases of scarlet fever, 16 cases of diphtheria, and 4 cases of enteric fever. There were 13 patients remaining in Hospital at the end of 1903, and 17 remaining in Hospital at the end of 1904. The largest number of patients at one time under treatment in 1904 was 30. As regards accommodation for small-pox the position is as follows: in 1900 a partnership was arranged between Knutsford Urban District Council and Bucklow Rural District Council, and the Hospital, belonging to Knutsford, was removed from Tabley Hill to Mobberley, and placed under the management of a Joint Committee. It was re-erected on brick foundations, each of the three wards was provided with a fire-place and chimney, and a nurse's bedroom was added. At the end of 1902 this building was sold, as it stood, to the Joint Hospital Board, who then tried to find a site for it. The Withington Urban District Council had meanwhile bought a plot of land, 14 acres in extent, at Newhall Green, Baguley, and proceeded to erect thereon a small-pox Hospital of corrugated iron, etc., for their own use. The Board obtained 7 acres of this land, as tenants of the Withington Council, and early in 1903 brought the Hospital from Mobberley and re-erected it at Newhall Green. The work was completed in February, 1903. Shortly afterwards another iron building to contain 3 bedrooms, and an iron pavilion (30 feet by 20 feet) were erected. This small-pox Hospital will accommodate 9 patients at one time (allowing the full amount of air space per patient) and the necessary staff. The whole number of patients treated in this Hospital during 1903 was 9, and the whole number treated in 1904 was 7.

The Hospital, belonging to Northwich Urban District Council, at Wade Brook, has beds available for 5 patients. Eight patients were treated here during 1904. The Hospital erected by Northwich Rural District, at Marbury, is available for patients from the Urban District suffering from small-pox. Four cases were in Hospital at the beginning of the year, and 49 fresh cases were admitted in 1904.

Macclesfield Rural District is served by the temporary Small-pox Hospital which was erected at Greenway, Sutton, in 1902. It was used in 1904 for the isolation of a case from Langley. This District has no accommodation for the isolation of infectious cases other than small-pox.

At Runcorn Rural District steps are being taken for the erection of an Isolation Hospital on the site at Dutton, recently purchased. The Hospital will be for cases of infectious disease other than small-pox. Plans have been prepared and submitted to the Local Government Board, together with an application for sanction to borrow £8,000 for the erection of the Hospital. The official Inquiry was held on August 28th, 1903. The exact price paid for the land was £1,050, and on it are to be erected an Administrative Block and offices, a scarlet fever pavilion to contain 12 beds, an enteric fever pavilion to contain 8 beds, and an Observation Ward to contain 4 beds. The cost of this Hospital (exclusive of site) would be £9,850, but the Rural District Council asked to be allowed to defer building the scarlet fever pavilion for the present, and as this was estimated to cost £1,850, they only sought to borrow £8,000. The temporary Small-pox Hospital at Moore was in use for the isolation of 3 cases in 1904.

Early in 1903, a Joint Hospital District was formed for Tarvin and Malpas Rural Districts, and Tarporley Urban District. There is nothing in the Reports from these Districts to indicate that the Joint Board have as yet put into operation the powers conferred upon them by the Order creating the District.

The Isolation Hospitals in the Administrative County, which do not belong to District Councils, Urban or Rural, are the Liverpool Port Hospital, the Bromborough Pool Hospital, the Macclesfield Guardians' Infectious Hospital, and the two Hospitals provided at the County Asylums at Upton and Parkside. The Port Hospital is for cholera, and occasionally other cases occurring on shipboard. The Bromborough Pool Hospital belongs to Price's Patent Candle Company, and is solely for the use of employees at the works. The Macclesfield Guardians' Hospital is for cases of infectious disease arising in the Workhouse; and the Asylums Hospitals are, of course, exclusively for cases occurring among the inmates of the Asylums. Thus not one of these Hospitals is generally available.

The new Chester Isolation Hospital is used by the Hoole Urban District, and the Chester Rural District. Stockport Borough Hospital, which like the Chester Hospital is outside the Administrative County, is used to some extent by Hazel Grove and Bramhall Urban District The Hospital at Ashton-under-Lyne has been used by Stalybridge for small-pox cases. The Hospital at Biddulph has been used by the Borough of Congleton to isolate 7 cases of diphtheria. Monsall Hospital, near Manchester, is used for cases of infectious disease which may occur at the Barnes Convalescent Hospital.

How singularly inadequate the existing hospital accommodation is, to meet the requirements of an area having a population of 609,316, must be obvious. The provision made is even more inadequate than it looks on paper, not infrequently infectious cases have to be treated in Workhouses, and many who cannot be properly housed and isolated at home are not removed, but remain as possible sources of infection to members of their families and neighbours. Notification of infectious diseases should be of great service to an Authority, but if when a case of infectious disease is notified—it may be the initial case in an epidemic—there are no means of isolating the patient, the Authority cannot do all that is practicable to prevent the spread of infectious disease. Of the 4,215 cases of infectious disease notified (which do not include notified cases of chicken-pox, measles, whooping-cough, etc.) in 1904, only 1,471 (34.89 per cent.) were isolated in hospital. However, the proportion compares very favourably with that recorded in all years previous to 1903. The proportion of notified cases isolated in 1903 was 42.07 per cent. The proportion of cases isolated in 1902 was 27.62 per cent. The proportion of notified cases in 1901 was 30.54 per cent. The proportion isolated in 1900 was 31.62 per cent. The proportion of notified cases isolated in the eight years 1892-99 was 16.12 per cent.

In many of the Reports are references to the need of Isolation Hospital accommodation. In particular, many of the most important Rural Districts are entirely without Isolation Hospital accommodation, except a few beds for small-pox, as in Macclesfield Rural District and Congleton Rural District.

It is thus apparent that some of the Isolation Hospitals, markedly those at Crewe and Wallasey, have done excellent work during the year, and there is abundant evidence, as there has been in past years, that when a well-built permanent building is provided, and properly equipped, there is no unwillingness on the part of the public to make use of it.

The opprobrium of Isolation Hospitals is what takes place at small temporary hospitals. There is accommodation for one disease, and yet from time to time two diseases are treated simultaneously. The building is unbearably hot in summer, and cold and draughty in the winter; it is very noisy in stormy weather, and soon gets out of repair, while the risk of fire is imminent. Then, there is imperfect supervision, no proper nursing staff, no suitable disinfecting apparatus, and the washing arrangements are unsatisfactory.

The Isolation Hospitals Act, 1893.—This Act, which was passed on December 21st, gives most important powers to County Councils, and enables them to take an active

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

All the steps taken by the Cheshire County Council from January, 1894, to the close of 1901, with the view of giving effect to this Act, are set forth in detail in the County Medical Officer's Annual Reports for 1896-1901.

The Isolation Hospitals Act, 1901.—This Act has for its object the amendment, in various particulars, of the Isolation Hospitals Act, 1893. It enables Local Authorities (including Joint Boards) within the meaning of the Public Health Act, 1875, with the sanction of the Local Government Board, to transfer Hospitals erected by them to

County Councils. It also enables County Councils to make contributions to Hospitals provided by Local Authorities (including Joint Boards) under the Public Health Act, 1875, and to borrow money for such purpose; and also to borrow in respect of contributions towards the erection of Hospitals, erected under the Isolation Hospitals Act, 1893. This Act contains many other amendments of the Isolation Hospitals Act, 1893, but the two mentioned were specially desired by the County Council; and, now that they are obtained, the County Council will be able (a) to contribute towards the structural expenses of new Isolation Hospitals to be erected, and (b) where Isolation Hospitals have been provided sufficient for the districts in which they are situated, to contribute an annual sum, towards the establishment expenses of such hospitals, or the repayment of the capital cost of such hospitals.

This Act enabled the County Council to offer assistance to all Sanitary Authorities and Joint Hospital Boards in the County, by contributing towards the cost of a site, or towards the erection of an Isolation Hospital, or towards the annual repayments made in respect of a loan (principal and interest) raised to provide an Isolation Hospital, or towards the cost of providing an Isolation Hospital, the debt on which had been paid off, or toward the cost of hospital accommodation arranged for by agreement. Such assistance was accordingly offered. The terms of the offer, and the response thereto, made by the several Sanitary Authorities and Joint Hospital Boards, are set forth in the Reports of the Meetings of the Isolation Hospitals Acts Sub-Committee, printed in the Minutes of Proceedings at the Quarterly Meetings of the County Council.

As regards the Isolation Hospital provided for Altrincham and Bowdon Urban Districts, and the Isolation Hospital provided for Runcorn Urban District, the County Medical Officer having reported that in his opinion, these hospitals were not adequate for the Districts for which they were provided, no contribution was made towards them.

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, etc. 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 workroom; and the removal of the body of any person dying of infectious disease in hospital, except for being buried

forthwith. It empowers a Justice to order an infectious patient in a hospital for Infectious Diseases to be detained therein, until free from infection, if it can be shown that he is without proper means of isolation and lodging elsewhere. It requires the Authority to provide free temporary shelter, with the necessary attendance, to the members of any families who have been compelled to leave their houses, to enable them to be disinfected by the Authority.

This Act has been adopted by a few of the Local Authorities in the County, but there is no reference in any of the Reports as to its being made use of.

In the Boroughs of Crewe and Stalybridge the Act has been in force since 1891.

The Report from Dukinfield states that this Act was adopted in 1897, except Sections 9, 10, and 12.

The Report from the Middlewich Urban District states that this Act was adopted in May, 1898.

The Report from Bollington Urban District states that this Act was adopted in 1899, except Sections 6, 8, 9, 10, and 12.

The Report from Nantwich Urban District states that this Act was adopted in 1900.

The Report from Hale Urban District states that this Act was adopted in November, 1900.

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, etc; as to times for removal through the streets of offensive matter, and as to vessels and carts employed being properly constructed and covered. It forbids rooms over privies, middens, or ashpits being used as living or sleeping rooms; and the erection of new buildings on foul sites. It permits all articles of unsound food, even those already sold, to be seized and condemned 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.

In the Report from Bredbury and Romiley it is stated that the District Council adopted this Act in 1896, and that it came in force on January 1st, 1897. The Marple District Council adopted the Act in 1895. During 1893, the Act was adopted by the Runcorn Rural Authority so far as it relates to Rural Districts; and in 1892 it was adopted by the Chester Rural Authority. Early in 1891 the Act was adopted by the Borough of Hyde. It has also been adopted by the Borough of Crewe, and by the Winsford Urban Authority. The Bollington Urban District Council adopted Part 3 in 1899, and the Mottram Urban District Council adopted Part 3 in 1901. However, neither this Act nor the Infectious Disease (Prevention) Act have been generally adopted, and where they have been adopted there is little evidence that the increased powers acquired have been used.

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 of 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, etc., 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, etc., to the satisfaction of the Authority, then, on 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 Dukinfield Urban District adopted this Act in October, 1896. It was also adopted in 1896 for the portion of Appleton (including Stockton Heath) in the Runcorn Rural District. The Northwich Urban District adopted the Act some time since. In the Report from Hoylake and West Kirby are notes of streets constructed under the Act.

In the Report from Bucklow Rural District it is stated that certain streets were put in good order under the Act. The Bollington Urban District adopted this Act in 1899, and it came into force on September 1st. Why so singularly useful an Act as this has not been more generally adopted and used, is inexplicable.

Disinfection by Steam.—An efficient apparatus for disinfecting by steam the clothing, bedding, etc., 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, conveniently near the Isolation Hospital. The Runcorn Rural Authority also have a good apparatus, but where placed (near the Small-pox Hospital at Moore) it is not very accessible. The excellent apparatus provided at Crewe in 1894 has since been much used. This is available for some Districts contiguous, but they rarely make use of it. A similar apparatus erected at Altrincham in the same year works satisfactorily.

The Medical Officer of Health for the Wirral Rural District reports that a good disinfecting apparatus, for disinfecting bedding and clothing by steam, was erected in 1902, contiguous to the Spital Isolation Hospital, and that in 1903 two covered vans were built to convey bedding, etc., to and from this disinfecting apparatus.

The Medical Officer of Health for the Borough of Macclesfield reports that a Thresh (current steam) Disinfector was purchased for his Borough in 1902, and that it is efficient and easy to work.

In the Reports from twelve districts the need of an apparatus for efficient disinfection of bedding, etc., is mentioned. At Dukinfield during 1896 a deputation from the Sanitary Committee visited Oldham to see the steam disinfector in use there. It seemed to give great satisfaction, and it was recommended that a similar apparatus be provided for Dukinfield; however, at the close of 1904 the Town Council had not decided to obtain a disinfector. The Cheadle and Gatley District Council in November, 1897, instructed their Medical Officer of Health to report on the various steam disinfectors in use. He accordingly made investigations and presented a very complete Report which is dated February 12th, 1898. However, no steam disinfector has yet been provided for the District. The Medical Officers of Health for Alderley Edge, Compstall, Knutsford, Marple, Hale, Wilmslow, and Winsford Urban Districts and for Nantwich Urban and Rural Districts, in the Reports for 1903 or 1904 drew attention to the need of a proper disinfecting apparatus.

The Medical Officer of Health for Stalybridge reports that his Sanitary Committee have decided to erect a Disinfecting House, and to provide therein a steam disinfector and bath-room, thus affording facilities for disinfecting persons and clothing exposed to infection.

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.

Disinfection of Premises.—In several Districts carbolic fluid, and packets of carbolic powder are given to those who apply for disinfectants at the Inspector's Office. However, the disinfection of rooms, which have been occupied by infectious persons, appears ordinarily to be done or supervised by the Authority's officers; and what these officers mainly trust to is fumigation, by means of burning sulphur. Now it is worth while asking—Does this "stoving" leave the room much as it was before? If the ceiling be limewashed, if the floor and woodwork be properly washed with carbolic acid and soap and water, and if the walls be stripped and cleaned, the room will be efficiently disinfected. Whether the room has or has not been fumigated with burning sulphur makes very little difference. Indeed, the fumigation may be mischievous, by giving a false sense of security, and leading to the neglect of really efficient disinfection.

Disinfection by burning sulphur having had a long trial (it has been more or less in use since the days of Homer) and been found wanting, it is gratifying to see that it has been abandoned at Crewe. During 1896, the method of disinfection employed in this Borough was that which had been practised in Paris for some years—applying a solution (1 in 1,000) of corrosive sublimate to the ceilings, walls, &c., by means of a sprayer. In the Report for 1897, it was stated that the method in use was "sponging or washing the room surfaces with solution of perchloride of mercury." At the beginning of 1899 the equifex sprayer was again in use, but it was found that one of the operators was frequently ill after work, and shewed unmistakable signs of mercurial poisoning (salivation, sore gums, muscular tremors, diarrhœa, etc.). Spraying with corrosive sublimate solution was therefore stopped, and a solution of sodium hypochlorite (1 in 100) was substituted. The spray is still used in many cases, but latterly rooms have been commonly disinfected by formaldehyde lamps.

In the Borough of Macclesfield also formic aldehyde (both as a spray and vapour) has been substituted for sulphurous acid; and instead of carbolic powder and carbolic acid, "chloros" (containing 10 per cent. of chlorine) and chloride of lime are being used. The Medical Officer of Health for Hale has also been trying formic aldehyde for the disinfection of infected rooms. In his opinion a strong point in its favour is that it does not act injuriously on household effects. The Medical Officer of Health for Bred-
Health for Hale has also been trying formic aldehyde, for and believes this to be a surer way of disinfecting than trusting to the fumes of sulphur.

At Wallasey both sulphurous acid and formic aldehyde are made use of. It is noted that when the latter is used there is no objectionable odour such as is left after fumigating with sulphur. In this District an apparatus was provided, in 1900, for disinfecting library books with formic aldehyde. In Bucklow Rural District premises are being disinfected by formic-sulphugators supplied by the Sanitas Company. It is claimed that they generate formic aldehyde, sulphurous acid gas, and steam. They are portable and easily lighted. This Authority have also a spraying apparatus, but it is too heavy to carry about for any distance. Householders are recommended to use chlorinated lime. In Nantwich Rural District the disinfection of rooms is largely effected by means of formic aldehyde.

Memorandum on Disinfection.—Towards the close of the year 1897, the County Medical Officer of Health was instructed to prepare a short Memorandum on the best means of disinfecting clothing, premises, etc. A Memorandum (dated December 27th, 1897) was accordingly prepared and printed. This was laid before the Public Health Committee on January 21st, 1898, when the Clerk was authorised to forward copies of it to the Boards of Guardians, and Urban and Rural District Councils in the County, with an intimation that the Committee recommended its general adoption, and hoped that the Boards of Guardians and District Councils would take steps to circulate it among the residents in their several Districts. Prints of the Memorandum were sent out accordingly, and in some parts of the County widely distributed. This Memorandum was re-printed in the Annual Report for 1897; thus all Medical Officers of Health for Districts in the County have had ample opportunity of studying the text. However, as disinfecting by sulphur fumigation is still the routine practice in so many Districts, it may be useful to insert here the following paragraph from the Memorandum:—

"THE DISINFECTION OF ROOMS can be simply, rapidly, and economically effected by brushing over the ceiling, walls (including woodwork) and floors with a mixture of chlorinated lime and water

(one part of good chlorinated lime to a hundred parts of water by weight), or a clear filtrate of the same. Afterwards, the room should be thoroughly aired, and the floor and all woodwork well washed with soap and water."

Systematic Inspection.—Probably it is the Inspector's first duty to give prompt attention to nuisances complained of by tenants or others, or discovered on infected premises. Searcely 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. In some Reports the need of an Assistant Inspector is referred to. It is certainly true that by systematic inspection many defects are brought to light and remedied, which would never be complained of.

Extra Work to Inspectors.—All those who have any acqaintance with Public Health matters know that it is a common practice to appoint the same man District Surveyor, and Inspector of Nuisances. The result not infrequently is, that the pressing duties connected with the Surveyor's Department take up most of the man's time, and only a small remnant of each day or week is left for inspection. Unsatisfactory as this practice is, in some instances the public is used to it. There is, however, a growing tendency to thrust upon Inspectors various miscellaneous duties which might properly be left in the hands of the Police. In some Districts the Nuisance Inspector is also the Inspector of Hackney Carriages; in some he has to attend yearly to the renewal of Game Licenses, and in two Districts the Inspector appears to undertake prosecutions for firing chimneys. At least one Sanitary Inspector issues licenses to deal in petroleum, under the Petroleum Acts; another has thrown upon him duties under the Dogs Act, and two or three are Inspectors under the Contagious Diseases (Animals) Act. Under conditions such as these, it need be no surprise that house-to-house inspection is not going on continuously and regularly in every District.

Abatement of Nuisances.—The word "nuisance," as defined by the Public Health Act, 1875, includes so many things and conditions that it may be said almost every form of pollution of air, ground, or water constitutes a nuisance. Some of these are made the subject of complaint to the Medical Officer of Health or Inspector; some they discover for themselves. In either case, each nuisance is entered in a book, and an attempt made to obtain its abatement.

The nuisances are due to various causes, among others insufficient drains and sewers, defective drains and sewers, obstructed drains and sewers, ditches carrying sewage, defective traps, waste-pipes untrapped or badly arranged, waste pipes directly connected, broken water-fittings, no supply or an insufficient supply, soil-pipes unventilated or ill-ventilated, rain-pipes directly connected, defective rain-conductors or roofs, damp walls, dead rats and mice under floors, offensive accumulations of refuse, defective ashpits, privies or w.c.'s, yards lodging foul water, offensive ponds, dirty or overcrowded 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. In some Districts the abatement of a large number of nuisances entered on the books is effected without formal notice, in others a formal notice is served in nearly every case. Further proceedings were rarely necessary in any of the Districts.

The work of obtaining the abatement of nuisances certainly seems to have full attention from Medical Officers of Health, while it very properly occupies a large share of the time of Sanitary Inspectors. As regards 28 Districts, Reports are submitted by the Inspectors, giving particulars of the nature of the nuisance 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.

Very little seems to be attempted, and still less accomplished, as regards the abatement of smoke nuisances. In some Districts where many hundreds of other nuisances are reported, there is but one smoke nuisance or none. However, it is not always the Inspector who is to blame. Creating a smoke nuisance seems to be regarded as quite a venial offence by some District Councils and Magistrates. Yet the presence of smoke implies the presence of noxious vapours (sulphurous acid mainly), and smoke-polluted air exercises a very distinct influence on the death-rate.

Examining Houses on Request.—It may be remembered that in November, 1893, public notice was given in the Borough of Crewe that anyone might have his house examined to ascertain its sanitary condition, free of charge, on making application to the Sanitary Department. The object was principally to enable new comers to the town to ascertain the condition of any house they might contemplate occupying. Several householders have availed themselves of this offer. There can be no reason why this should not be attempted in other Urban Districts.

Examination of New Houses.—It might be thought that requiring new houses to be certified, as fit for human habitation, before occupation, would be usual, at least in Urban Districts, but it is not. In some few Districts new houses are

examined and certified by the Surveyor, but probably the best plan is to arrange for its being done jointly, by the Medical Officer's and Surveyor's Departments, as is now done at Wallasey. A bye-law requiring new houses to be certified as fit for habitation was brought into force in Crewe in 1897.

If the examining of new houses before their occupation were efficiently done, it would in many instances PREVENT nuisances, which is wiser and more economical than allowing nuisances to be caused, and then endeavouring to ABATE them.

Rateable Value of Houses.—In the Crewe Report is a note of the value of houses on the rate-books. It shows that on September 30th, 1904, over 71 per cent. of the houses in the Borough were rated under £10 per annum, and over 95 per cent. under £20 per annum. If similar information were furnished by other Districts it might throw some light on the incidence of disease and mortality, and aid in the solution of some health problems.

Ashpits, Middens, &c.—The storing of refuse in receptacles in close proximity to inhabited houses is an insanitary practice. The system adopted in many towns where each house is provided with a dust-box or dust-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 same receptacle, its proximity to a dwelling-house is even more objectionable. Yet these "compound middens" (they go by various names) are very common throughout Cheshire, and in Rural Districts, and some Urban Districts, represent the sanitary arrangements 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, or (what is better) a receptacle to contain a movable ash-bin. Not so many conversions were effected in 1904 as in some recent years; still in the Borough of Crewe there were 521 more clean-water closets at the end of the year 1904, than at the end of the year 1903. In the Borough of Hyde 95 privies were converted into water-closets in 1904. In the Borough of Macclesfield 182 privies were converted into water closets, and 68 new water-closets were built during 1904. Generally, it may be said that slop-water closets are not in favour. The slop-closet is flushed with waste water by means of a tumbler, and in some Districts, where many are in use, they are said to work satisfactorily. They may be adapted to localities where the supply of water is deficient, and where it would be difficult or impossible to procure water for the service-cisterns of ordinary water-closets.

In any case the slop closet is a poor substitute for a closet flushed with clean water. It also needs to be regularly inspected, as when one is out of order a serious nuisance is created.

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 will probably be done more regularly and systematically, if movable 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. Occasionally the middens are so large, and bad in form, that it seems impossible to improve them. Such middens have been seen at Dukinfield, Hyde, and Stalybridge. Such structures also exist in Macclesfield Borough. "In some cases," writes the Medical Officer of Health, "the midden is old and dilapidated, resembling a huge cavern with many recesses."

Constructing cesspools which admit the rain-water, and furnishing them with overflow pipes to the sewer, seems to have been not uncommon, at one time, in Middlewich and Winsford, and many of these cesspools still exist. They are referred to with reprobation by the Medical Officer of Health for these Districts, and there is no doubt that they are wholly bad. As regards Winsford, the Medical Officer of Health estimated in a previous Report that there are upwards of 2,000 houses there having privies, mostly old and faulty. "The subsoil of the site upon which the town is built must be thoroughly saturated with organic matter, owing to the use (from time immemorial) of these cesspools, which conjoin leakiness of construction with a size commensurate with the needs of a period of four months."

At Lymm it has been found that many persons "from ignorance, carelessness, or obstinancy, persist in regarding an ashpit as a receptacle for all the waste refuse" in the house: so the Inspector was asked to draw up a notice intimating what articles of refuse should not be placed in ashpits, and appealing to householders to assist the Authority in their efforts to prevent nuisances, etc. Such a notice was accordingly drawn up and printed, and the District Council have had copies pasted on the doors of all ashpits. This was a very simple thing to do, and cost little, yet it is almost certain to do some good. Other Districts may see their way to imitating the example Lymm has set, and thus mitigate in some measure the ashpit nuisance.

Refuse Removal.—Quite as important as the proper construction of ashpits, etc., 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 water-closets 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 on 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. The pails should be supplied in duplicate, and each pail should be cleansed after emptying, and charged with a disinfectant. Cesspools and privy-middens 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 until 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 once or twice a week, but as regards middens a monthly emptying will satisfy most Authorities. 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.

In the Wallasey Urban District a great improvement has taken place. On July 1st, 1897, the Health Committee began to undertake the collection of nightsoil, &c., with their own staff of men, horses, and carts. The work has since been carried on smoothly and efficiently, in marked contrast to the lax methods followed by contractors in late years, which gave rise to numerous well-founded complaints. In many houses, old as well as new, covered dust-bins have been substituted for ashpits, and as these are fitted with handles, dust is removed from them easily, and with little noise. They are emptied regularly once a week. These are found to be a great improvement. The bins cost but a few shillings a-piece, and any householder, by buying one and giving notice to the Authority, can do away with the ashpit nuisance on his premises. The substitution of covered dust-bins for ash-pits is thus continually going on, and a revolution in the old system of refuse removal is being quietly effected. At Hoylake and West Kirby also the majority of the new houses are provided with movable dust-bins.

At Mottram the refuse removal used to be very badly

attended to. After the District had been inspected by an Inspector of the Local Government Board, he reported unfavourably upon it, and advised the Local Government Board to issue an order under Section 42 of the Public Health Act, 1875, requiring the District Council to undertake or contract for the emptying of privies, ashpits, &c. This order was issued in September, 1897, and came into force in the District on October 1st. The Council subsequently provided a proper covered cart for removing refuse, &c., and contracted for its regular removal.

At Wilmslow, where there has been no regular system of emptying ashpits, the house-tenant having to pay for each emptying, the Authority had decided to undertake the work in 1900; but the Report states that the District Council have not carried out their Resolution to do this work. The ashpits are still emptied badly and irregularly, and the result is more or less a nuisance.

As regards the cost of this work, though the total sum paid is given by many Medical Officers of Health, it is difficult to compare the out-lay in one District with the out-lay in another, without full particulars of the work done, and of the way it is done. In one District (Sandbach) £76 16s. 6d. was received for the saleable portion of the stuff collected in one year; but this must be an unusual experience outside Sandbach. At Crewe, where there are receptacles of all kinds, the cost of emptying was 3/8½ per load in 1897 and 1898; but in 1899, owing to the Corporation having to abandon all tips and send practically all the refuse (whether gathered in the day or night) to the farm, the cost of emptying went up to 3/11 per load, in 1900 the cost was 4/- per load, in 1901 the cost was 4/1¼ per load, in 1902 the cost was 4/0½ per load, in 1903 the cost was 3/11 per load, and in 1904 the cost was 3/11 per load.

In Macclesfield (a Borough less populous than Crewe) the cost of emptying was 3/1$\frac{1}{12}$ per load in 1898, 3/3$\frac{9}{10}$ per load in 1899, 3/5$\frac{7}{10}$ per load in 1900, 4/3$\frac{9}{10}$ per load in 1901, 3/8$\frac{7}{10}$ per load in 1902, 3/7¼ per load in 1903, and 3/10¼ per load in 1904.

However, it is hardly fair to compare the cost of removal in different towns; so much depends on the distance the material has to be carted before it is tipped. Paying a little more for removal is wiser than depositing the refuse on land which may soon be used for building sites. As showing that this work may be better and more economically done without employing a contractor, it was stated in the Bucklow Report for 1900 that the scavenging contract for Northenden was allowed to lapse as the price showed an upward tendency. The work has since been undertaken by the District Council, and very efficiently carried out, manual and team labour being engaged direct, thereby saving £100 per annum. Special arrangements should be made for collecting and destroying trade refuse from poulterers, fishmongers, greengrocers, etc.; if this is not done nuisances are almost certain

to arise, especially during warm weather. At Crewe the carts for carrying the dry ashes, as well as the nightsoil carts, are covered.

Another duty of the Authority, in reference to refuse removal, is to arrange tips in suitable situations, sufficiently remote from inhabited houses, and providing such tips is often a difficult task. Privy-refuse should, of course, be used promptly on the land.

The use of Pails containing Acidulated Peat, a full account of which was given in the Annual Report for 1894, is still in practice in the Borough of Congleton. During 1904 there were 1615 pails in use, and 5282 loads of nightsoil removed. All this nightsoil was manufactured with manure—forming a marly dry powder, almost free from smell. At Knutsford a number of large cesspools have been abolished, and the "Congleton system" has been introduced. The number of pails in use is now 131. They are reported on favourably, and are to be increased yearly. At Middlewich 200 peat pails are in use. They give satisfaction. At Winsford the "peat pail system" was introduced during 1900. An explanatory circular was drawn up, describing the system, and distributed to property owners. During 1900, 28 pails were installed, and since then 258 pails have been installed. The general adoption of the system is advocated.

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, which, when cool, is either thrown into a mortal-mill and ground (taking the place in the mortar of clean sharp sand) or used for path making or some similar purpose. Any iron-waste drawn with the slag is sorted out, and finds a ready market.

During 1902, the only District in which a destructor was provided was Wirral. A steam-disinfector was being provided, and a destructor was built contiguous thereto. Yet there is great need of destructors, especially in the larger Urban Districts. It is getting more and more difficult every year to find land on which refuse may be tipped without creating a nuisance or fouling the foundations of future houses. If the stuff is tipped in the near neighbourhood of dwelling houses the tenants very naturally complain, and the great cost of cartage prevents the Authority from taking it right out into the country. The Medical Officers of Health for the Borough of Dukinfield, and the Urban Districts of Northwich, Marple, and Neston and Parkgate, refer to the need of destructors. In some towns, where the tip is a long way off, the

annual saving in cartage would almost pay for providing and working a destructor. Some time since, a deputation from Dukinfield inspected certain destructors and reported favourably on them, and particularly on the apparatus at Darwen Electric Supply Station. A Sub-Committee from Northwich has also inspected several destructors in use.

At Stalybridge, the Sanitary Committee, in 1903, recommended the provision of a destructor, and in October, a tender to erect one was accepted. When the plans were completed the Local Government Board was approached. The Board raised objections to the proposed site and the provision of a destructor in this Borough has thus been delayed.

If any District Council wish to inspect a destructor in working they can do so at Hyde or Wallasey. In the last named District an apparatus containing six cells began work in June, 1895, and it proved so useful in dealing with refuse that six additional cells were obtained in 1897. The power developed by the heat generated in this large destructor, is used for the production of electricity to light the premises, and also for turning a mill to grind the clinkers and make mortar, which is sold to builders. The stabling and other buildings for the plant used in the collection of nightsoil, etc., were completed satisfactorily in 1897.

Sewering and Sewage Treatment.—The work of draining, sewering, and providing for sewage-treatment, has been carried forward in almost every part of the county in 1904. At the Borough of Congleton sanction to borrow £16,953, for the purposes of sewerage and sewage-disposal was obtained in 1901. This sum includes the amount required for the purchase of suitable freehold land for sewage disposal. The work of laying sewers was begun in 1901, and good progress was made in 1902-04. During 1904 there were nineteen streets efficiently sewered. At the outfall works the septic tanks were completed, as were also two of the large bacteria-beds. These are working satisfactorily and treating about one-sixteenth of the sewage of the Borough. The beds are circular in plan and the sewage from the tanks is delivered on them by revolving sprinklers. At Crewe, where broad irrigation failed to produce a good effluent, the Corporation, some few years since, completed their arrangement for dealing with the northern outfall sewage on the lines indicated by Dibdin. Accordingly a large open septic tank has been constructed, of sufficient capacity to hold one day's sewage, and five primary and five secondary bacteria-beds. During 1902 the septic tank was fitted with scum-boards, the fifth pair of bacteria-beds were finished, and increased aeration provided, and the discharge pipes of all the beds were lowered, so as to drain each bed to the bottom. About four-fifths of the sewage of Crewe is still dealt with by using it for the irrigation of the farm. Forty samples of sewage-effluent

from the bacteria-beds have been submitted to the Borough Medical Officer of Health for analysis during 1904. He reported that, on the whole, these have proved very satisfactory. The construction of nine large circular bacteria-beds is under consideration, and plans and sections have been prepared. Dukinfield, with Stalybridge and Audenshaw, takes its sewage to Bradley Hurst Farm, and for carrying out this scheme the Local Government Board sanctioned the borrowing of £58,300. The works were completed and opened in 1900, and during 1901 were generally in use. The sewage is treated by precipitation (without the use of chemicals) and filtration, and then passed on land. The works do not appear to be acting quite satisfactorily. At Hyde, where there are 18½ miles of main sewers and 10 miles of private street sewers, complaints of effluvia are occasionally received, and the Medical Officer of Health has suggested further ventilation of the sewers. At the Borough of Macclesfield main drainage was completed in 1896, but the connecting of many streets and houses, which previously could not be drained, yet remains to be done. A certain number of these connections are effected yearly.

The sewage farm at Butley has not given satisfactory results, and pressure has been put upon the Corporation to take steps to insure a better effluent. The provision of bacteria beds is under consideration. A Sub-Committee, appointed in February, 1903, after visiting many sewage disposal works, resolved that Mr. R. E. Berrington be appointed engineer, to prepare a scheme for the improvement of the works at Butley. Mr. Berrington proposes to enable the works to deal with 1,038,720 gallons in 24 hours, the capacity of the existing tanks being only 482,962 gallons. He will then arrange for the tank effluent to be delivered by revolving sprinklers, or filters circular in plan. The construction of the additional tanks and the new filters, and re-arranging the existing works, is estimated to cost £14,000. The repayment of principal and interest on this sum will amount to £770 a year. This sum, with the yearly cost of the maintenance of the new works will come to £1,388, the sum actually spent in 1902 on the treatment of sewage at Butley. During 1904 an Inspector of the Local Government Board held an inquiry with regard to an application of the Town Council for sanction to borrow £14,000 for alterations and extensions at the sewage disposal works. Sanction was obtained and the work was commenced in August, 1904. A contract to carry out the work as outlined was let for £9,849.

At Alderley Edge the new filter-beds appear to be acting satisfactorily. Much of the eight acres of outfall-land will be available for irrigation. A contract for the further improvement of the filter-beds was let in 1904, and the work has been begun. At Alsager the filtration area is only an acre and three-quarters in extent, and has become sodden and water-logged. The Medical

Officer of Health is of opinion that additional land (2 acres) is much needed. The sewers have but slight fall and require more frequent flushing. At Altrincham, during 1901, the new works in connection with the extension of the sewage farm were begun, and during 1902 much progress was made. At a portion of the new works sewage is being received and dealt with. At Ashton-upon-Mersey the willow-beds, where the sewage is treated, continue to act effectively. However, the land is now taking all the sewage it can, and in the near future additional land will be needed, or a new system of treatment will have to be adopted.

In the Annual Report for 1901 it was stated that the scheme for the drainage of Lower Bebington had been satisfactorily carried ou', and was in operation. This has done much to improve the condition of Bromborough Pool, which was previously much polluted. Higher Bebington, except in the case of a few outlying houses, is well sewered to Lower Bebington sewers. The Higher Bebington District Council pay a small sum for wayleave on sewer, and half the cost of repairs. Main drainage is still much needed at Bollington. After the amalgamation of Bollington and Kerridge an Engineer was appointed to prepare a scheme for the consideration of the District Council. With some alterations, directed toward the reduction of cost, the scheme has received the provisional sanction of the Local Government Board. As the borrowing powers of the Council are nearly exhausted, the scheme had to be cut down, thus the means of ventilating the sewers will be no so efficient as originally planned, and the size of the filter beds as planned has been reduced. At Bowdon the sewage farm continues to be kept in fair working order. At Bredbury and Romiley the main drainage system has been considerably extended in several parts of the District. During 1904 there were 74 houses newly connected to the sewers in Bredbury, and 17 houses newly connected to the sewers in Romiley. Bromborough is on the whole well sewered. The Medical Officer of Health for Buglawton, in his Report for 1901, stated that a scheme for dealing with the sewage had been decided upon. It is now stated that giving effect to this scheme has been delayed from various causes, especially owing to the difficulty experienced in obtaining a suitable site for outfall works. This scheme has recently been abandoned, and an arrangement has been all but completed with the Borough of Congleton for Buglawton to be drained to the Congleton outfall-works, when the sewage will be treated bacteriologically. At Cheadle and Gatley the main drainage scheme was completed during 1901, and some extensions were effected in 1903. The effluent from the filter beds has been reported "good" each time a sample has been taken and analysed. There are still 14½ acres which can be used for land filtration when occasion arises. At present, this land is not wanted owing to a portion of the District having been incorporated with Stockport. In the new Urban District of Compstall, the sewers, which carry slop-water only have their outlet in a reservoir which stores water for a turbine. It is

hardly necessary to point out that this is not an ideal arrangement. Ellesmere Port and Whitby Urban District is mainly sewered where built on, but no extensions were made in 1902.

The Medical Officer of Health for Hale reports that the completion of the new sewer through Halebarns has enabled the Authority to deal effectively with the insanitary privies at Halebarns Schools. The treatment of the sewage at the outfall works is (a) by septic tank, followed by bacteria beds, and this by broad irrigation, and (b) by chemical precipitation, followed by broad irrigation. Both methods, as now working, appear to be fairly satisfactory, the effluents therefrom having been reported on favourably. At Handforth a system of main drainage is still needed, and should be provided. The drainage into open ditches constitutes a danger to public health. The Medical Officer of Health trusts that definite steps will be taken in 1905 to provide proper drainage for the Urban District. The sewage of Hazel Grove drainage-area continues to be dealt with by precipitation, at the Offerton Sewage Works, which are in fairly good condition. The Bramhall drainage area system and outfall works were completed in 1902, and are in operation. At these works the sewage is dealt with bacteriologically. There are, however, many houses not yet connected, and the Medical Officer of Health suggests that the Authority should insist upon this being done as soon as possible, so that sewage matter may be taken out of the brooks and watercourses. An important addition to the sewerage of the Hazel Grove drainage area has been the construction of a main sewer at Torkington. It was completed in 1903, but not taken over till 1904. The whole drainage system in now in good working order. The sewers are periodically flushed. The outfall-works belonging to Hollingworth and Mottram are stated to be acting satisfactorily. At Hoole the sewers are reported to be in good order. Hoylake and West Kirby are well sewered, and the sewers are extended from time to time as required. The new sewer outfall-works at Great Meols are in order. Several new sewers have been laid during the year to provide for houses newly erected. The sewer outfall at Sandy Lane has been re-constructed and enlarged at a cost of about £12,000, and is reported to be working satisfactorily. The deep level sewer has been constructed and continued to the full extent of Fornall's Green. The houses there are now being connected to the sewer. The outfall-works consist of three retaining tanks, built on 3 levels, to suit the levels of the 3 new outfall-sewers. Flushing-tanks have been made, which collect tidal waters to flush out the retaining-tanks. The new sewer at Dee Lane (completed in 1903) is working satisfactorily. At Knutsford additional filters seem still needed, and also increased tank-accommodation. The sewage-disposal land for Lymm is kept under supervision, and continues to act well. Samples of effluent analysed during 1904 were reported on as "good." New sewers have been laid in Sandy Lane, at the Nook, Oughtrington, and off Dane Bank Road. At Marple the sewers

and outfall-works are in order. A further scheme for new outfall-works has been prepared for Middlewich, and is under consideration. The report from Nantwich Urban District states that Mr. Baldwin Latham, C.E., has been retained to advise the District Council as to sewage-disposal. He has submitted a scheme, requiring the acquisition of additional land, which is under consideration.

Neston and Parkgate are sewered, and the extension needed is being provided. In the Report for 1903 it was mentioned that the contracts (amounting to £6,233) for the extension of sewers and construction of outfall-works, had been let. Good progress was made with this work in 1903 and 1904. In the latter year 1718 yards of new sewers were laid. The septic tanks and newly constructed (double contact) bacteria beds are in working order. There is also a filter for storm water. There is little to report from Northwich Urban District. The scheme for sewering and dealing with the sewage of the Castle Ward of the Urban District at Winnington, in Northwich Rural District, may now be said to be complete, and is working well. The bulk of the Castle Ward sewage is being treated at the outfall. The scheme for sewering the lower part of the town has taken longer to develop than was anticipated. It was not till 1903 that the scheme was ready.

At Runcorn Urban District, prior to the making of the Manchester Ship Canal, seven sewers conveyed the sewage of the town into the river Mersey direct. After the construction of the canal, six of these sewers were diverted into an intercepting sewer of large capacity, which runs parallel to the canal and is syphoned under it to discharge into tidal waters. The seventh sewer was culverted under the canal. The sewers are ventilated, and arrangements are provided for cleansing them. The work of improving the drainage of the town is carried on from time to time. At Sale the sewage-disposal works are reported to be in good order. At Sandbach the sewage-disposal works are still not working, and pollution of the local stream continues. The scheme referred to in the last Annual Report was not approved. In response to strong pressure from the County Council and the Local Government Board, an Engineer of experience, Mr. W. Wyatt, of Leamington, was consulted, and he prepared a scheme. Plans and sections were in due course sent in to the Local Government Board, with an application for sanction to borrow the sum required to carry out the work. An Inquiry by an Inspector was not held till 1905. At Tarporley the extension of the sewers and the construction of the outfall-works were completed in 1904, and are in full working order. Many house-connections are being, or have been, made.

The Wallasey District Council's large scheme for reconstructing the main sewers, at the cost of about £30,000, was sanctioned in 1897, and the work was commenced at Leasowe Road

in January, 1898. The work has been going forward ever since. In 1901 and 1902 parts of the town, where there was special need of sewer-construction, appear to have been dealt with. During 1903, the outfall-sewer north of Egremont Ferry, the outfall-sewer in Maddock Road, and the outfall-sewer in Magazine Lane, were constructed of cast-iron pipes of various diameters, and now discharge at extreme low-water level. The whole of the very defective sewers in Grosvenor Street, Westminster Road, Wilton Street, Eaton Street, and Belgrave Street, were removed, and new sewers laid in place thereof. In 1904 the most important work put in hand was the sewering of a portion of the Leasowe Road section of the low-lying area of Wallasey, on Shone's system. Another important work was the removal of the defective sewer in Falkland Road and the construction of a new sewer. The work of repairing and re-inverting the main brick-sewer along King Street has also been commenced and in part completed. A number of new manholes, flushing chamber, and ventilator have been put in. At Wilmslow the northern and southern portions of the main drainage scheme are in good working order, and the portion passing through Fulshaw Park was completed in 1902. The filtration beds at Winsford are said to work efficiently and economically. Though schemes for sewering Yeardsley-cum-Whaley have been under consideration since 1895, the District is not yet sewered. The Medical Officer of Health draws the attention of the District Council to the need of a proper system of sewerage and sewage-disposal.

In the Rural Districts also sewering and sewage works seem to have attention, but much remains to be done. In the Bucklow Rural District the scheme for draining Dunham Massey is being proceeded with. The new outfall was ready three years ago, and the main sewer is nearly finished. The total cost of the scheme will be £16,150 Defective work was found in May, 1904, which was attributed to the contractors. A dispute arose, and all work was stopped. The contractor is now taking legal proceedings against the Council. At Timperley the main sewer is a long one, with a faulty gradient, causing silting. It was lately cleaned out from the Dark Lane outfall to the Railway Station (about 2¾ miles), and the cost of this was nearly £200. The Northenden outfall seems to be fairly efficient, and a scheme is under consideration for its enlargement.

In Chester Rural District the Authority are desirous of having Christleton, Great Boughton, Upton, Newton and Bache properly sewered, and plans for sewering these Townships to the City of Chester sewers have been prepared. Sanction to borrow the money required has been obtained. The sewage will eventually be dealt with at the City outfall. The works for Christleton and Great Boughton were commenced in June, 1903. The scheme for the sewerage of Newton, Upton, and Bache has not been begun. It has undergone so much revision that another Inquiry by an

Inspector of the Local Government Board has become necessary, and is being prepared for. Part of Newton and part of Great Boughton are sewered to the City sewer, and are being extensively built upon. Eaton and Eccleston are sewered, and have outfall-works for the purification of the sewage by the Amines process; and works for the purification of the sewage of Pulford, by septic tank and bacteria beds, were provided during 1901. The works were constructed and have been maintained by the owner of the estate. The Report from Congleton Rural District states that the sewers at Elworth and Rode Heath, constructed in 1901, have proved very beneficial to the districts they serve. The improvement effected in the drainage of Holmes Chapel for some time worked well; but latterly they have not been well maintained, and as a result a nuisance has been created. Complaint was made, and the nuisance has since been abated. There is still great need of drainage at Thurlwood and Kent Green. The irrigation grounds at Mow Cop, Mount Pleasant, and Lawton are worked most satisfactorily. The sewerage of the Village of Disley, completed in midsummer, 1898, is working satisfactorily, but not all connections of house-drains have been made. Furness Vale, in the Disley District, is reported to be still without a proper system of sewerage and sewage-disposal. Attention is also drawn to the necessity of dealing with the sewage of Newtown, in the same District.

In Macclesfield Rural District 15 new houses have been drained into the sewers at Poynton, the number of houses now draining into these sewers being 460. As regards Malpas, the town is sewered to three outfalls, and at two of them the sewerage is treated at bacteria beds in two tiers. In Nantwich Rural District, during 1904, the only matter reported is that a scheme has been prepared and submitted to the Local Government Board for the sewerage of Broad Lane, Stapeley. Main drainage is much needed at some of the larger villages, especially at Willaston, Haslington, Shavington, Church Coppenhall, and part of Audlem. The Report from Northwich Rural District states that the sewage of Winnington is now being efficiently treated. New outfall-works have been designed for Barnton, as the tanks there are not equal to requirements. The plans are now before the Local Government Board. Considerable improvements have been made in the outfall-works at Lostock Gralam. New sewerage works have been completed at Hartford. At Runcorn Rural District the Helsby Sewerage Scheme was completed in 1903, and the disposal-arrangements are being worked. They appear to be doing well. Plans and estimates for the sewerage of Halton and for sewage-disposal works have been approved. Negotiations have been opened with Runcorn Urban District Council with a view to connecting Halton with the town system of sewerage.

In Tarvin Rural District plans have been prepared for the purification of sewage at Tattenhall, Tarvin, and Barrow,

but the District Council have not yet received sufficient support to enable them to proceed with these. At Barrow there have been serious complaints of pecuniary damage from the want of proper outfall-works, and it is very desirable that these works should be proceeded with. The land required seems to have been arranged for.

The works for the purification of sewerage at Aldford by the "international" process, which commenced working in 1899, were reconstructed in 1903. At the sewage works at Eccleston Ferry the Scott-Moncrieff process is in use. In Wirral Rural District the works for the sewerage of Little Sutton were completed in 1902. During the same year the Local Government Board sanctioned a loan of £27,500 for the purpose of carrying out the Fender Valley Sewerage Scheme, which provides for the construction of an outfall sewer from Barnton to the culvert within the Borough of Birkenhead, and affords an outfall for the sewage of the townships of Arrowe, Barnton, Bidston-cum-Ford, Landican, Moreton, Noctorum, Pensby, Prenton, Storeton, Thingwall, Upton, and Woodchurch. This important sewerage work was commenced in the early summer of 1903, and is now completed. It will be ready to convey sewage from the contributory parishes as soon as the sewers of these parishes are finished. Contracts have been let for the contributory sewers in the Parishes of Arrowe, Bidston, Noctorum, Upton, and Prenton. All are intended to be ready in 1905. Application has been made for sanction to borrow money for a scheme to connect Moreton with the outfall sewer. To meet the views of the Local Government Board a fresh scheme has been prepared for the sewerage of Childer Thornton, Eastham, and Hooton, and application for sanction to borrow the sum required to carry out the work was made in 1903. The Official Inquiry was held early in 1904, and sanction to carry out the scheme was given shortly afterwards. A scheme for the sewerage of Eastham village has also been sanctioned. The Local Government Board's sanction to the scheme for the drainage of Willaston is expected shortly. The scheme for the drainage of Great Sutton still awaits final settlement. On the application of the owner of the estate which covers the townships of Gayton, plans have been prepared for the sewerage of Gayton, the owner virtually guaranteeing the cost. An application with reference to this has been made to the Local Government Board. Owing to the opposition of the River Authority this scheme has been blocked, but the District Council are still endeavouring to obtain the sanction needed to enable them to proceed. Sewerage schemes for Thornton Hough and Grange are under consideration.

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 Dukinfield the sewers are said to be regularly flushed, especially in dry weather, and where there is not much fall. At Alsager the flushing is less well done than it would be if the water supply were more abundant. At Higher Bebington and Marple the flushing is done as required; at Lower Bebington it is done fortnightly. At Bromborough and Hoole the flushing is done regularly. At Hoylake and West Kirby the sewers are flushed fortnightly; while at Bredbury and Romiley they are flushed but six times a year. At Nantwich and Northwich the flushing is stated to be regularly attended to. At Neston and Parkgate the sewers are flushed every week. At Lymm the sewers have been flushed every fortnight for the last four years, and since this has been done no complaints of ill-odours in the streets have been received. A special flushing connection has been made from the water-mains. The Report from Sandbach states that the sewers and drains are flushed. At Wallasey the flushing of the public sewers is in the hands of the Engineer's Staff, and is regularly done. An enormous flushing tank has been procured for the purpose (with a 12in. outlet), holding 1,800 gallons, and systematic flushings with this was begun early in 1898. Three separate gangs are employed for flushing the sewers and back passages. A tank holding 500 gallons is used for the branch sewers, and where the tanks are inapplicable (as in a back passage, etc.) hose piping is used. The flushing of house drains was, during 1897, transferred to the Sanitary Department. The men entrusted with this work have been formed into three gangs. Two of these gangs are occupied in systematic house-to-house flushing, and go over the whole district at least twice a year. The third gang attend to the flushing of drains at houses at which cases of infectious disease are reported, especially cases of typhoid fever, diphtheria, and scarlatina. Each gang has been provided with a set of Cooper's Patent Suction Pumps, and thus many drains found choked are cleared without the ground having to be opened.

In Wirral Rural District, the flushing of the sewerage systems at Eastham, Childer Thornton, Heswall, and Upton, is regularly attended to.

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. At Hyde where there have been complaints of effluvia from sewers in a certain district, the Medical Officer of Health recommended the erection of ventilating shafts. At Northwich Urban District, ventilating shafts

have been fixed on the main sewers from time to time, as they have been in many other towns. At Alsager tall ventilating pipes have been attached to trees, and generally act very well; but during the summer, when the trees are in leaf, these ventilators are not as efficient as others.

At Wallasey there used to be complaints of effluvia from the man-holes. Of late these have not been numerous; however, the District Surveyor continues to erect ventilating shafts in suitable places, and also gas-lamps which by a special arrangement are connected to the sewer and so act as ventilators.

Pollution of Rivers and Streams.—A few notes in some of the Reports refer to this, and are not unimportant. At Crewe the pollution of the North and South Brooks by crude sewage and imperfectly purified effluents has been taken in hand, and a special Committee has been appointed to deal with it. Bacterial purification works have been constructed for dealing with about one-fifth of the sewage, and further works are under consideration. The pollution of the River Weaver next in importance to that which take place at Crewe, is the pollution from the sewage at Nantwich, but a scheme for treating the sewage of this town was prepared and submitted to the Local Government Board in December, 1902, and when this scheme was not approved (the Board insisting on the provision of land for treating the effluent) various plots of land were reported on. Recently, Mr. Baldwin Latham, C.E., has prepared a scheme, now under consideration, involving the acquisition of additional land.

Pollution of the River Weaver also takes place in many parts of the Nantwich Rural District.

The River Tame, which has again and again been referred to as very little better than an open sewer, is improved now that the joint sewerage scheme for Dukinfield and Stalybridge has been completed, and the sewage of these two Boroughs is being treated. At Bollington there are frequent complaints of river pollution, but a scheme for the drainage of this District is ready, and this scheme with some alterations (directed towards the reduction of cost) has received the provisional sanction of the Local Government Board.

The River Bollin continues to be much polluted, but measures are being taken to reduce this pollution. As regards the sewage purification works at Butley, where considerable pollution has been taking place, the Macclesfield Corporation have taken the matter in hand, and got out a scheme for the improvement and re-arrangement of the works at a cost of £14,000.

The Medical Officer of Health for Nantwich Rural District reports that the streams entering this District from Staffordshire are generally polluted with refuse from mining operations.

In Northwich Rural District there has been some pollution, in 1904 from some of the District Council's outfall works. In Runcorn Rural District the pollution of the Halton Brook still continues, but steps are being taken to remove the pollution. As regards the pollution of the Iron Dish Brook, the Helsby sewage-disposal works (now in operation) should deal with this.

On October 21st, 1898, the County Medical Officer of Health presented a Supplementary Report on the state and condition with reference to their pollution, or otherwise, of all the Rivers and Streams in the Administrative County outside the area under the jurisdiction of the Mersey and Irwell Joint Watershed Committee; and a series of resolutions were passed relating to all the Sanitary Authorities referred to therein; in many instances the Clerk being instructed to write to District Councils, informing them that pollution of rivers and streams in their Districts was taking place, and requesting that Councils would forthwith take such steps as may be necessary for stopping such pollution, etc. The notes in some of the District Medical Officers' Reports relate to statements made in this Report, or to investigations undertaken in connection therewith. Some of them have just been referred to; other notes, which gave particulars of arrangements made for preventing further pollution, by the construction of sewers and sewage-disposal works, were referred to under the heading "sewering and sewage treatment."

The Rivers Pollution Prevention Act, 1893.—It may be well here to draw attention to an Act passed in 1893, with the object of strengthening the Rivers Pollution Prevention Act, 1876. It enacts that "where any sewage matter falls or flows, or is carried into any stream after passing through or along a channel which is vested in a Sanitary Authority and the Sanitary Authority shall, for the purposes of Section 3 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 1904 in closing houses unfit for habitation or rendering them habitable. At Dukinfield Borough a list was presented some years ago of 176 back-to-back houses, with full particulars thereon. This list, which includes all the back-to-back houses in the Borough still has attention. The Report from Hyde

states that most of the insanitary property mentioned in the Annual Report for 1903 has been put into sanitary condition, but that there is other insanitary property requiring attention, and particulars of this are given. At Macclesfield Borough the Medical Officer of Health made a representation to his Health Committee, in 1904, that certain dwelling-houses were unfit for human habitation. The Committee inspected the property, and subsequently resolved that notice be given to the owners in the form prescribed to make such buildings fit for habitation within two months. All the houses were afterwards closed. At Alderley Edge a few houses reported as unfit for habitation have been put into good condition. At Altrincham a requisition as to certain properties in the town having been presented to the Council, the Medical Officer of Health was instructed to report thereon. He reported that the properties in Chapel Street, Hope Street, and Albert Place could be so altered as to be rendered habitable, and these alterations are now being carried out. In the case of a property in Police Street (containing some of the oldest and worst dwelling-houses in the town) he reported that it could only be adequately treated under a special improvement scheme. The form this scheme should take was considered in 1904, and suitable plans have been prepared for eleven pairs of small houses and two larger ones. These are for the very poor, and the rents will be low. In Northwich Urban District there appear to be a number of houses unfit for habitation. A Committee of Inspection is engaged in making a comprehensive survey of these houses Owing to subsidence, general dilapidation is very common. At Sandbach a number of old houses which, owing to dilapidation, have become unfit for human habitation, have been taken down.

Considering so little is done it is important to draw attention to the following passage in a circular issued by the Local Government Board in June, 1900—"Parliament has made it the duty of the Local Authority entrusted with the Laws relating to Public Health and Local Government to put in force from time to time, as occasion may arise, the powers with which they are entrusted so as to secure the proper sanitary condition of all premises within the area under their control, and the Board would point out that a heavy responsibility rests with the Local Authorities if they fail to give effect to the intentions of Parliament in this matter."

Overcrowding.—Judging by the Reports, there is no great prevalence of overcrowding. In most of the West Cheshire Districts it is noted that cases are occasionally reported, but they are infrequent In Altrincham it is found that the overcrowding noted in 1902 was much less in 1903 and scarcely noticed in 1904. There have not been as many workpeople employed at Broad-

bottom, and the demand for house accommodation has much diminished. At Knutsford the house accommodation is insufficient and some overcrowding seems unavoidable. However, plans for 18 houses were passed in 1904.

The Housing of the Working Classes Act, 1890.—Houses unfit for human habitation can be generally more satisfactorily dealt with under this Act than under 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 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 the land and building materials need be paid.

Part 2—Unhealthy Dwelling-Houses.—It is made the duty of the Medical Officer of Health of every District to officially inform his authority of any dwelling house which appears to him in a state so dangerous or injurious to health as to be unfit for human habitation; and he may be called upon, on complaint of householders, to report on the condition of any house. The Authority are required to cause inspections to be made from time to time of their District, to ascertain whether any dwelling-house is unfit for human habitation, and they must forthwith take the necessary proceedings, before a Justice, to obtain a closing order on receiving a report of a house unfit from their Officer. When a closing order has been made, and the Authority are of opinion that

the dwelling-house has not been rendered fit for human habitation, they may order the demolition of the building, time being given the owner to attend and state his objections. It is also made the duty of the Medical Officer of Health to officially inform his Authority of "obstructive" buildings. If any building in his District, though not in itself unfit for human habitation, stops ventilation, or otherwise conduces to make other buildings unfit for human habitation, or prevents proper measures being taken to abate nuisances, it is his duty to report the facts to his Authority, who shall order the demolition of the buildings, after compensating the owner.

Part 3—Working Class Lodging-houses.—By this part of this Act, which is "adoptive," power is given to Local Authorities to build Lodging-houses, dwelling-houses, or cottages for the working classes, or to purchase or lease those existing, and make bye-laws for their regulation and manage them. Power is also given to Local Authorities to acquire land for the purpose of this part of this Act.

The Housing of the Working Classes Act, 1894.—This explains the provisions of part 2 of the Housing of the Working Classes Act, 1890, with respect to borrowing under a scheme for reconstruction.

The Housing of the Working Classes Act, 1900—This Act was passed to amend Part 3 of the Housing of the Working Classes Act, 1890, i.e., the Part which deals with the provision of Working Class Lodging-houses. Previous to the passing of the new Act, a Local Authority, in the exercise of their powers under Part 3 of the Act of 1890, were not, as it was considered, enabled to provide lodging houses for the working classes outside their District. This difficulty has been removed by Section 1 of the present measure, which provides that where any Council, other than a Rural District Council, have adopted Part 3, they may, for supplying the needs of their District, establish or acquire lodging-houses for the working classes under that Part outside their District. As regards Rural Districts, hitherto Part 3 of the Act of 1890 could only be adopted after the complicated procedure described by the proviso to Section 54, and by Section 55 of that Act, had been complied with. These enactments are repealed by the present measure, which (in lieu of the requirements prescribed by them) provides by Section 2 that the Council of every Rural District may, with the consent of the County Council, adopt Part 3 of the Act of 1890, either for the whole of their District or for any contributory place or places therein. The new Act also repeals certain portions of Section 65 of the Act of 1890, which deals with the mode of defraying expenses incurred in the execution of Part 3 of the Act. The expenses will continue to be borne as special expenses, unless on the application of the Rural

District Council, the County Council declare them to be general expenses. The area of charge will be that for which the part has been adopted. Sub-Section 1 of Section 5 of the new Act enables an Urban Council, with the consent of the Local Government Board, and a Rural Council, with the consent of the County Council, to lease any land acquired by them under and for the purposes of Part 3 of the Act of 1890 to any lessee for the purpose, and under the condition that the lessee will carry that Act into execution by building and maintaining on the land lodging-houses within the meaning of the Act. The Council must insert in every lease all necessary provisions for insuring the using of the land and buildings for such lodging-houses. In particular, provisions are to be inserted binding the lessee to build on the land as in the lease prescribed, and to maintain and repair the buildings. securing the use of the buildings exclusively as lodging-houses, and prohibiting any additions to or alteration of the character of the buildings without the consent of the Council. There must also be inserted in every lease a provision for the re-entry of the Council on the land on the breach of any of the terms of the lease. Sections 61 and 62 of the Act of 1890, which contain certain provisions vesting in the Local Authority the management of lodging-houses established or acquired by them under Part 3 of the Act, and enabling them to make charges for the tenancy of the lodging-houses and bye-laws for their regulation, are not to extend to lodging-houses thus built and maintained.

If the Rural District Council make default in properly exercising their power of adopting and acting under Part 3 of the Act of 1890, they will be liable to have their powers transferred to the County Council, under Section 6 of the new Act. This Section provides that if a Parish Council resolve that a Rural District Council ought to have taken steps for the adoption of Part 3 of the Act of 1890, or to have exercised their powers under that Part, and have failed to do so, the County Council may, if satisfied after due inquiry that the District Council have so failed, resolve that the powers of the District Council for the purposes of that Part shall be transferred to the County Council with respect to the parish, and they shall be transferred accordingly.

Section 7 deals with the determining of the compensation to be paid for taking land compulsorily for the purposes of Part 3. The compensation to be paid in such cases has, hitherto, been settled by a jury or by arbitrators, or an umpire appointed in the manner provided by the Lands Clauses Acts. It is now enacted that where land is acquired under Part 3, otherwise than by agreement, any question as to the amount of compensation that may arise is to be determined, in default of agreement, by a single arbitrator, to be appointed and removable by the Local Government Board.

The Act does not extend to Scotland or Ireland.

It is a little surprising that not more action is taken under the Act of 1890. In some instances in which insanitary dwelling-houses were closed in the County in 1901, they were closed by means of an order under Section 97 of the Public Health Act, 1875. In some instances, apparently, houses unfit for habitation are not closed owing to the refusal of the Authority to put the Housing of the Working Classes Act into operation. For example, at Middlewich many houses have been reported to the District Council more than once, as unfit for habitation, and action has not been taken thereon. In the Report from the Borough of Macclesfield, it is stated that although there are still a large number of grossly insanitary houses in the Borough, the attempt to deal with them at one time by wholesale closing orders would only result in terrible overcrowding of other dwellings. Perhaps more might be effected if property owners would assist the Sanitary Authority in carrying out their reasonable requirements. The very moderate wages paid those belonging to the staple industry of this town prevents the Corporation undertaking any scheme for building workpeople's dwellings. It would be much more feasible for the Corporation to convert some of the existing insanitary dwellings into healthy ones. Where the property owner refuses to act on the suggestion of the Sanitary Authority or professes himself unable to carry out the reasonable and moderate requirements of the Authority, the Medical Officer of Health thinks it would be well for the Authority to purchase such houses at a moderate sum and put them into sanitary condition. He thinks this might be done without loss to the ratepayers. In the Report from Hale it is stated that the supply of houses for the working classes does not equal the demand. At Knutsford there is great need of considerable additions to the workmen's dwellings. A hope has been expressed that private enterprise would come to the aid of local workpeople. Failing such enterprise, it remains for the District Council to adopt the Housing of the Working Classes Act.

It is remarkable that, while in several Districts the common lodging-house accommodation is recognised to be unsatisfactory; no Authority in the county has built a lodging-house for the working classes, acting under powers which could be obtained by adopting Part 3 of the Housing of the Working Classes Act, 1890.

Possibly the new Act passed in 1903 may make it simpler for Town Councils and District Councils to provide better housing for the working classes.

The Housing of the Working Classes Act, 1903.—This Act amends in several very important respects the law relating to the housing of the working classes, and facilitates very considerably the adoption and enforcement of the Housing Acts by local authorities.

Section 1 (1) provides that the maximum period which may in future be sanctioned as the period for which money may be borrowed by a local authority for the purposes of the "Housing Acts" shall be 80 years, and as regards money so borrowed, 80 years are substituted for 60 years in Section 234 of the Public Health Act, 1875. Further, Section 1 (2) provides that money borrowed under the Housing Acts shall not, as at present, be reckoned as part of the debt of the local authority for the purposes of the limitation or borrowing under Sub-sections 2 and 3 of Section 234 of the Public Health Act, 1875.

[In this connection the Local Government Board have already made it known that they proposed in future as a general rule, to allow the full term of 80 years for the repayment of money borrowed for the purchase of freehold land, and 60 years for the repayment of money borrowed for the erection of buildings. Where money has been borrowed in recent years for these purposes, the Board will be ready to consider applications for sanction to the re-borrowing of the outstanding balances for 80 or 60 years, as the case may be, from the date of the original borrowing.]

In London a borough council may at present borrow, with the consent of the London County Council, under the Metropolis Management Act, 1855, but under Section 190 they are required, in order to form a sinking fund for paying off mortgages created under the Act, to set aside in every year a sum not less than 2 per cent. on the amount of the principal moneys secured thereby, which sum is to accumulate at compound interest. It is now provided, by Section 15 of the new Act, that for the purpose of carrying into effect the provisions of the Act as to the maximum period for which money may be borrowed, 80 years shall be substituted for 60 years in Section 27 of the Metropolitan Board of Works (Loans) Act, 1869, and such sum as will be sufficient, with compound interest, to repay the money borrowed within such periods, not exceeding 80 years, as may be sanctioned by the London County Council, shall be substituted for 2 per cent. in Section 190 of the Metropolis Management Act, 1855.

Under the existing Housing Acts, some of the functions of the Central Authority in regard to London are at present exercised by the Secretary of State, and some by the Local Government Board. Section 2 of the new Act makes provision for an Order in Council being made assigning to the Local Government Board any powers and duties of the Secretary of State under the Housing Acts, or under any scheme made in pursuance of those Acts, and the powers of the Secretary of State under any local Act, so far as they relate to the housing of the working classes. Any such powers and duties so assigned will then become powers and duties of the Local Government Board.

The Standing Orders of the Houses of Parliament require

that in all Bills for local Acts (including Bills to confirm Provisional Orders) WHICH GIVE POWER TO TAKE LAND COMPULSORILY OR BY AGREEMENT, clauses shall be inserted providing that the promoters of the Bill shall not in the exercise of such power acquire more than a prescribed number of houses occupied by persons belonging to the labouring class, unless they have obtained the necessary approval to a scheme for providing certain housing accomodation.

A Joint Committee of both Houses recommended last year that provision on the subject should be embodied in a general Act of Parliament. This was done by SECTION 3 OF THE NEW ACT, which will apply to all cases where, under the powers given by any future local Act or Provisional Order, or Order having the effect of an Act, land is acquired, whether compulsorily or by agreement, by any authority, company, or person, or where land is so acquired compulsorily under any general Act other than the Housing Acts. The Housing Acts are excepted because they contain special provisions on the subject.

Particulars of the requirements imposed on any such authority, company, or person are contained in the SCHEDULE TO THE ACT, which provides that if in any Borough, Urban District, or Rural Parish, the authority, company, or person have power to take, under the Act or Order under which the land is acquired, working men's dwellings occupied by thirty or more persons belonging to the working class, they shall not enter on any such dwellings until the Local Government Board have either approved of the housing scheme, or decided that a scheme is not necessary. The schedule sets out generally the requirements of a housing scheme, and contains various provisions in relation to the making, enforcement, and modification of such schemes.

By Section 10 of the Act of 1890, where outside London an official representation is made to the Council of a Borough or Urban District, with a view to their passing a resolution in favour of an improvement scheme under Part 1. of the Act, and the council fail to pass any resolution in relation to such representation or pass a resolution to the effect that they will not proceed with such scheme, the Local Government Board are empowered to direct a local inquiry to be held, and a report to be made to them as to the correctness of the official representation, and any matters connected therewith on which they may desire to be informed.

The powers thus given to the Board are supplemented by SECTION 4 (1) of the new Act. This enactment enables them, if, on the report made to them on an inquiry directed as above-mentioned, they are satisfied that a scheme ought to have been made for the IMPROVEMENT OF THE AREA to which the inquiry relates, or some part thereof, TO ORDER THE COUNCIL TO MAKE SUCH A SCHEME. The scheme may be ordered to be made under either Part I., or Part II., of the principal Act, and the council

may be ordered to do all things necessary under the Housing Acts for carrying the scheme so made into execution.

Where an Order of this nature is made, it will be the duty of the council to make a scheme under part I., or to direct a scheme to be prepared under part II., of the prsncipal Act, as if they had passed the resolution required under Section 4, or Section 39 (as the case may be) of that Act, and to do all things necessary under the Housing Acts for carrying the scheme into effect.

The Order of the Board will be ENFORCEABLE BY MANDAMUS.

It has hitherto been requisite under Section 7 of the Act of 1890, that, upon the completion of an improvement scheme under Part I. of that Act, the local authority should publish an advertisement stating certain prescribed particulars in a local newspaper during three consecutive weeks in the month of September, or October, or November, and should, during the month next following the month in which the advertisement was published, serve certain prescribed notices. Moreover, any Provisional Order made by virtue of Section 8 (4) of the Act of 1890 confirming an improvement scheme has, under Section 8 (6), required for its validity confirmation by Parliament.

SECTION 5 (1) of the new Act will enable the advertisements to be published for three consecutive weeks at any period of the year, and will allow the prescribed notices to be served during the thirty days next following the date of the last publication of the advertisement. Moreover, by SECTION 5 (2) an Order of the Local Government Board confirming an improvement scheme will be effective without confirmation by Parliament in certain circumstances.

SECTION 6 provides power to modify in certain cases schemes made under Parts I. and II. of the Act of 1890.

Cases sometimes occur where it will be found beneficial TO INCLUDE in a reconstruction scheme, under Part II. of the principal Act, some NEIGHBOURING LANDS, although not comprising buildings in themselves dangerous or prejudical to health. SECTION 7 of the new Act will enable this to be done if the council under whose direction the scheme is made are of opinion that the inclusion is necessary for making their scheme efficient. But where this course is adopted, the prohibition contained in Section 41 (2) of the Act of 1890 against giving any additional allowance in respect of compulsory purchase, in settling the amount of compensation, is excluded from application in the case of any land which may be thus included. The effect of the amendment of the law made by SECTION 7 is virtually to make the provisions of Part II. of the principal Act uniform with those of Part I. in this matter.

Where a Council desired TO OBTAIN A CLOSING ORDER in regard to a dwelling-house in a state so dangerous or injurious to health as to be unfit for human habitation, it has hitherto been necessary for them, under the procedure prescribed by Section 32 of the Act of 1890, before they could obtain the order, to give notice to the owner or occupier of the house to abate the nuisance. The PROCEDURE IS NOW SIMPLIFIED as regards any dwelling-house which, in the opinion of the Council, is either (a) not reasonably capable of being made fit for human habitation, or (b) is in such a state that its occupation should be immediately discontinued. In these cases the necessity for serving such a notice as above mentioned before obtaining a closing order is dispensed with, by SECTION 8 (1) of the new Act, which further enables a justice to issue a summons for a closing order, and a closing order to be granted, though such a notice has not been served.

Section 34 of the Act of 1890 empowers the Council to demolish a house in respect of which an order for demolition has been made if the owner himself fails to comply with the order, and requires them to sell the materials, and after deducting the expenses of the demolition to pay the balance of money (if any) to the owner. There is, however, no provision to meet the case when the sale of materials does not cover the COST OF DEMOLITION. This is remedied by SECTION 9 of the new Act, which enacts that, where the amount realised by the sale of materials under Section 34 of the principal Act is not sufficient to cover the expenses incident to the taking down and removal of a building, the Council may recover the deficiency from the owner of the building as a civil debt, in manner provided by the Summary Jurisdiction Acts, or under the provisions of the Public Health Acts relating to private improvement expenses.

A more speedy and efficacious way of OBTAINING POSSESSION OF A HOUSE in respect of which A CLOSING ORDER HAS BEEN MADE, than that provided by Section 32 (3) of the principal Act is afforded by SECTION 10 of the new Act. Under its provisions the local authority may have recourse, whatever may be the value or rent of the house, either to the procedure prescribed by Sections 138 to 145 of the County Courts Act, 1888, or to that under the Small Tenements Recovery Act, 1838. The expenses incurred by the local authority in taking these proceedings can be recovered from the owner as a civil debt under the Summary Jurisdiction Acts. The power of enforcing the penalty provided for in Section 32 (3) of the principal Act will still remain.

The effect of SECTION 11 (1) of the new Act is to empower the council if they PROVIDE LODGING-HOUSES for the working classes under Part III. of the principal Act, or if they SUPPLY HOUSING ACCOMMODATION under Part II. of the principal Act, or under any scheme made in pursuance of any of the Housing Acts, to provide and maintain, in connection with the lodging-

house or dwelling accommodation, any building, adapted for use as a shop, any recreation grounds, or other buildings or land which, in the opinion of the Board, will serve a beneficial purpose in connection with the requirements of the persons for whom the lodging houses or dwelling accommodation are provided.

Under Section 75 of the Act of 1890, a condition is implied in any contract made after August 14th, 1885, for the letting of a house or part of a house for habitation by persons of the working classes (as such letting is therein defined), to the effect that the house is at the commencement of the holding fit for human habitation.

As this enactment stood prior to the passing of the Act of last session, it would seem that there is nothing to prevent an agreement being made between the landlord and the tenant contracting themselves out of its provisions. Any such agreement made after the date of the passing of the new Act (August 14th, 1903), is made void by SECTION 12 of the new Act.

The service of notices and other documents is facilitated by SECTION 13 of the new Act.

SECTION 14 removes another difficulty which has been experienced in the administration of the Housing Acts in London. In cases where the London County Council carry out reconstruction schemes under the provisions of Sub-section (5) of Section 46 of the principal Act, the Secretary of State is empowered by Sub-section (6) of that section, in certain circumstances, to order a payment or CONTRIBUTION towards the expenses of the London County Council to be made BY THE COUNCIL OF A METROPOLITAN BOROUGH, but hitherto, in the absence of such an Order, the metropolitan borough council have had no power to make any such payment or contribution.

The new Act, by Section 14, enables a metropolitan borough council, if they think fit, to pay or contribute to the payment of any expenses of the London County Council under Section 46 (5) of the principal Act in connection with a scheme of reconstruction, and to borrow any money required for the purpose under Section 46 (2), and provides that an Order of the Secretary of State, as above mentioned, shall not be necessary except in cases of disagreement between the county council and the council of the borough.

This Act does not extend to Scotland or Ireland. It came into force on August 14th, 1903.

The Employment of Children Act, 1903.—This Act, which may be noticed here, as the only other Act passed last session which is of importance from a public health point of view, is intended to make better provision for regulating the employment of children. It provides (Section 1) that any Local

Authority—that is, the Corporation of the City of London, the town councils of boroughs of over ten thousand inhabitants, the district councils of urban districts of twenty thousand inhabitants, and elsewhere the county councils—may make bye-laws—

(i) Prescribing for all children, or for boys and girls separately, and with respect to all occupations or to any specified occupation—

(a) The age below which employment is illegal; and

(b) The hours between which employment is illegal; and

(c) The number of daily and weekly hours beyond which employment is illegal.

(ii) Prohibiting absolutely or permitting, subject to conditions, the employment of children in any specified occupation.

Section 2 provides that any local authority may make bye-laws with respect to street trading by persons under the age of sixteen, and may by such bye laws

(a) Prohibit such street trading, except subject to such conditions as to age, sex or otherwise, as may be specified by the bye-law, or subject to the holding of a licence to trade to be granted by the local authority;

(b) Regulate the conditions on which such licences may be granted, suspended, and revoked;

(c) Determine the days and hours during which, and the places at which, such street trading may be carried on;

(d) Require such street traders to wear badges;

(e) Regulate generally the conduct of such street traders;

Provided as follows:—

(1) The grant of a licence or the right to trade shall not be made subject to any conditions having reference to the poverty or general bad character of the person applying for a licence or claiming to trade.

(2) The local authority, in making bye-laws under this section, shall have special regard to the desirability of preventing the employment of girls under sixteen in streets or public places.

Section 3 contains general restrictions on the employment of children, as to the hours within which children shall not be employed, prohibiting the employment of children under eleven in street trading, etc.

Section 4 has some general provisions as to bye-laws, as to their submission to the Home Secretary for confirmation, as to their being made applicable either to the whole or part of the area of the local authority in each case, etc.

Section 5 prescribes the penalities for offences under the Act.

Section 6 deals with the liabilities of agents or workmen for offences under the Act; and Section 7 requires that proceedings for an offence must be instituted within 3 months after the commission of the offence.

Section 8 gives power to officers of local authorities to obtain justices' orders to enter places of employment; Section 9 deals with employment in factories; Section 10 has a saving for industrial and other schools; Section 11 deals with the granting of licences to children under ten years; and Section 12 provides for the payment of expenses out of the County rate in the case of counties, out of the borough fund or borough rate in the case of boroughs, and out of any rate or fund applicable for defraying expenses under the Public Health Acts in the case of other urban districts.

The Act is made applicable to Scotland and Ireland, with the necessary modifications. It came into operation on January 1st, 1904.*

At a meeting of the Public Health Committee held on October 23rd, 1903, the County Medical Officer of Health was instructed to report upon this Act, together with his recommendations (if any) thereon, and a brief Report was accordingly submitted in July, 1904. At a meeting of the Public Health Committee held on October 21st, 1904, the County Medical Officer of Health stated the steps he had taken to obtain information with reference to the employment of children from the Councils of Boroughs and Districts in Cheshire, and from County Councils in England and Wales, and said that he could not recommend the framing of any bye-laws under this Act at present.

Public Health Act, 1904.—This is an Act, as its title states, "to enable regulations to be made for carrying into effect conventions with respect to the prevention of danger arising to public health from vessels, and the prevention of the conveyance of infection by means of vessels." The existing law contained ample provision for making regulations for the protection of this country against the introduction of infection from abroad by shipping, and already, with that object, the Local Government Board have from time to time made regulations, those at present in force being the Cholera, Plague, and Yellow Fever Regulations of 9th November, 1896. But it was found that the Board had no precise statutory power to make regulations of the same nature for enforcement in the case of vessels leaving this country, and seeing the freedom of this country from the diseases referred to

* By the Prevention of Cruelty to Children Act, which came into operation on October 1st, 1904. Sections 4 (6) and 11 of the Employment of Children Act, 1903, are repealed.

and the high state of efficiency of the sanitary supervision at all our chief ports, foreign countries ran little risk from the absence of definite regulations on the subject. But the Paris International Convention of 1903 assumed that such regulations would be made and enforced, and consequently it became necessary to obtain from Parliament the definite power to make them before the Convention could properly be signed for England.

The Act consists of one section (apart from the short title), which it may be desirable to quote verbatim :—

> "(1) The power of making regulations under the Public Health Act, 1896, and the enactments mentioned in that Act, shall include the power of making regulations authorising measures to be taken for the prevention of danger arising to public health from vessels arriving at any port, and for the prevention of the conveyance of infection by means of any vessel sailing from any port, so far as may be necessary or expedient for the purpose of carrying out any treaty, convention, arrangement, or engagement with any foreign country, and the regulations may in particular provide for the recovery of any expenses incurred in disinfection and of any charges authorised to be made by the regulations for the purpose of those regulations or any services performed thereunder, and also for any powers and duties under the regulations being executed and performed by Local Authorities :
>
> " Provided that the regulations shall not be made except after consultation with the Board of Trade.
>
> "(2) In the application of this Act to Scotland, Part IV. of the Public Health (Scotland) Act, 1897, shall be substituted for the Public Health Act, 1896.
>
> "(3) This Act shall extend to the Isle of Man with the substitution of section eight of the Local Government Amendment Act (Isle of Man), 1897, for the Public Health Act, 1896."

The Act came into force on its receiving the Royal Assent on 15th August, 1904, and adds one more to the already numerous " Public Health Acts."

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 way of removing the only reasonable excuse for overcrowding ; and if thoroughly good building bye-laws are in force in the District, and the houses are well built and drained, and fitted with proper sanitary appliances, the Local Authority is thereby placed in a better position for dealing with insanitary property. On the other hand, if there are no good building bye-laws in force, and each builder is suffered to do what is right in his own eyes, new

buildings, instead of being a source of strength, are a source of weakness in a District.

At Crewe the number of new houses (181) for which habitation certificates were given in 1904 compares unfavourably with the average in the six years, 1898—1903, which was 265. In the Borough of Macclesfield building operations have been a little more active during 1904. Sets of plans were deposited for 43 houses in 1904, for 34 houses in 1903, and for only 13 in 1902.

Model bye-laws are in force in the Borough, and it has been suggested that a Building Surveyor should be appointed to see that they are properly carried out. At Ashton-upon Mersey new building bye-laws came into force in 1899. Plans were passed for 53 new houses in 1904. At Lower Bebington building went on vigorously during 1904, especially at Port Sunlight, where workmen's dwellings are excellent, and occupied under favourable conditions. There were 61 new houses built in the course of the year. At Bollington the new building bye-laws, which have for some time been under discussion, were passed on December 19th, 1903. Only three new houses were completed during the year. At Bredbury and Romiley the new building bye-laws were approved on February 8th, 1901. There were 67 houses erected at Bredbury and 10 houses erected in Romiley in 1904. At Cheadle and Gatley 31 new houses were built and occupied during 1904, nearly all small detached houses at Cheadle Hulme. At Ellesmere Port the model bye-laws are in force. Fifteen houses were built and certified in 1904. At Hale building operations are very active. There were 93 more houses in midsummer, 1904 than in midsummer, 1903. At Hazel Grove and Bramhall plans for 59 new houses were approved in 1904. At Hoole only one new house was erected during 1904. At Hoylake and West Kirby, 65 dwelling houses were completed in 1904. At Lymm 11 new houses were completed and certified. At Marple, in 1904, there were 33 houses completed and tenanted, and 21 houses were in course of erection at the end of the year, or finished and untenanted. At Middlewich 10 houses were built in 1904. At Nantwich 29 houses were built in 1904. At Neston and Parkgate 16 new houses were built in 1904. At Northwich 29 new houses were built in 1904, but as 18 old houses were demolished, the houses in the town were only increased by 11. At Sandbach there are about 50 empty cottages, and building is at a standstill. At Tarporley no new houses were built during the year.

Bucklow Rural District Council have a Building Committee to examine and report upon all plans for new buildings. During 1904 there were 152 sets of plans submitted, and of these 109 were approved as drawn, and 43 were referred for amendment. The plans included those for 163 new dwelling-houses. The new building bye-laws came into operation on March 8th, 1900. In Chester Rural District the model bye-laws of the Local Government Board

have been in force for some years ; 19 new houses were completed in 1904. At Disley there is need for more modern bye-laws. In this little District 13 new houses were erected in 1904. Macclesfield Rural District has good bye-laws. Plans for 47 new dwelling-houses were approved in 1904. All houses are inspected frequently during erection to see that the requirements of the bye-laws are carried out. In Nantwich Rural District plans for 53 new houses were passed in 1904. The Council of this district has Urban powers in respect of new buildings. In Northwich Rural District plans for 53 new houses were passed in 1904. Buildings are carefully inspected during erection. Bye-laws, which were carefully revised in 1894, are in force throughout the Wirral Rural District, and Mr. Webb-Shenman examines plans and acts as Building Surveyor. He reports that, during 1904, plans for 127 new houses were passed, and 67 houses were completed.

Generally speaking, building operations do not appear to have been exceptionally active in Cheshire in 1904.

New Streets.—The work of making new streets proceeds but slowly. In Ashton-upon-Mersey, Cheadle and Gatley, Hale, Hazel Grove, Lower Bebington, Hoylake and West Kirby, in some of the populous parts of Bucklow Rural District, and a few other "residential" Districts, fair progress is made, but, generally, little seems to have been done.

In several Districts street improvements have been effected, footways have been flagged, and back passages have been paved. In some streets also additional lighting has been provided.

School Accommodation is a subject that may well come within the observation of the Medical Officer of Health, yet it is referred to in very few Reports. In the Borough of Crewe the Schools are inspected, and the teachers notify on forms supplied by the Authority any scholar suffering from measles, mumps, whooping-cough, chicken-pox, "fever," influenza, eczema, and ringworm. The Medical Officer of Health for Bredbury and Romiley inspects the schools in his District and finds them in order. The Medical Officer of Health for Cheadle and Gatley reports that he inspects the elementary schools from time to time. The sanitary arrangements are satisfactory, and the playgrounds dry and well drained. The Medical Officer for Marple finds the local schools clean and well ventilated. The Medical Officer of Health for Hale regularly inspects the schools in his District. In Bucklow Rural District the sanitary condition of the various schools and playgrounds is generally satisfactory. Many of the teachers report cases which may occur of non-notifiable diseases.

The Factory and Workshop Act, 1901, which came into force on January 1st, 1902, repeals all the existing Factory

and Workshop Acts, and consolidates, with numerous amendments, the provisions they contain. The changes introduced into the law by the new Act have rendered necessary a complete revision of the Abstracts used under the Act, and on and after January 1st, 1902, it became necessary to substitute the new Workshop Abstract for that in use in 1901. A Circular-letter has been issued by Dr. Whitelegge, Chief Inspector of Factories and Workshops, calling attention to the principal changes affecting workshops, which have been made by the Act, and which are embodied in the Abstract. This Circular-letter and new Abstract have doubtless been received and studied by all Medical Officers of Health.

The Act comprises 163 sections and several schedules grouped under 10 parts. The provisions which impose duties and powers on District Councils and their Officers may be summarized as follows:—

Section 1 amends section 91 of the Public Health Act, 1875, so far as factories, workshops, or workplaces, are concerned. It provides that:—

"(1) The following provisions shall apply to every factory as defined by this Act, except a domestic factory:—

"(a) It must be kept in a cleanly state;

"(b) It must be kept free from effluvia arising from any drain, water-closet, earth-closet, privy, urinal, or other nuisance;

"(c) It must not be so overcrowded while work is carried on therein as to be dangerous or injurious to the health of the persons employed therein;

"(d) It must be ventilated in such a manner as to render harmless, so far as is practicable, all the gases, vapours, dust, or other impurities generated in the course of the manufacturing process or handicraft carried on therein that may be injurious to health.

"(2) The provisions of section 91 of the Public Health Act, 1875, with respect to a factory, workshop, or workplace, not kept in a cleanly state, or not ventilated, or overcrowded, shall not apply to any factory to which this section applies."

The section further requires the periodical cleansing of all inside walls of factories, etc., except where a special exemption has been granted by the Secretary of State.

Section 2 deals with the sanitary condition of workshops and workplaces not included in the term "factory" as defined by the Act. To such places section 91 of the

Public Health Act, 1875, is to apply, and the District Council, acting on the certificate of their Medical Officer of Health or Inspector of Nuisances, are given more definite and stringent powers than they have hitherto possessed of enforcing proper sanitary conditions.

Section 3 deals with overcowding and section 4 empowers the Secretary of State, if he is satisfied that the provisions of the Act, or of the law relating to public health in so far as it affects factories, workshops, and workplaces, have not been carried out by any District Council, to authorise an Inspector to take such steps as may be necessary for enforcing those provisions and recover the cost from the District Council.

Section 5 gives the Factory Inspector powers to enfo ce the amendment of defects in factories or workshops remediable by the Sanitary Authority when the District Council have neglected to take the necessary steps on their own initiative, and sections 6, 7, 8, and 9 contain provisions as to the temperature in factories and workshops, their ventilation, the drainage of their floors, and the provision in them of sufficient and suitable sanitary conveniences.

Sections 10-18 relate to precautions for the safety of workers, such as the fencing of machinery, the provision of means of escape in case of fire, etc. In connection with this matter section 15 provides that "every District Council shall, in addition to any powers which they possess with reference to the prevention of fire, have power to make bye-laws providing for means of escape from fire in the case of any factory or workshop, and sections 182 to 186 of the Public Health Act, 1875, shall apply to any bye-laws so made." In London, this matter is to be dealt with by the London County Council instead of by the local Sanitary Authority (see section 153).

In connection with dangerous and unhealthy industries, it may be noted that section 73 requires that every medical practitioner attending on or called in to visit a patient whom he believes to be suffering from lead, phosphorous, arsenical or mercurial poisoning, or anthrax, contracted in any factory or workshop, shall send to the Chief Inspector of Factories at the Home Office, London, a notice, stating the name and full postal address of the patient, and the disease from which, in the opinion of the medical practitioner, the patient is suffering, and shall be entitled for each notice to a fee of two shillings and sixpence.

Bakehouses are specially dealt with in sections 97-102. Section 97 prescribes the sanitary regulations for bakehouses; section 98 imposes a penalty for a bakehouse being unfit for the purpose on sanitary grounds; sections 99 and 100 provide for the periodical limewashing, painting, etc., of bakehouses, and require proper regulation of sleeping places near bakehouses; section 101 prohibits underground bakehouses, except where they were so used at the passing of the Act; and section 102 imposes on District Councils the duty of enforcing these provisions as to bakehouses.

Laundries are dealt with under Section 103, which applies certain provisions to "every laundry carried on by way of trade, or for purposes of gain," but exempts (sub-section 4) any laundry in which the only persons employed are (a) inmates of any prison, reformatory, or industrial school, or other institution, for the time being subject to inspection under any Act other than this Act; or (b) inmates of an institution conducted in good faith for religious or charitable purposes; or (c) members of the same family dwelling there; or, in which not more than two persons dwelling elsewhere are employed.

"Home-work" is dealt with in Part 6 of the Act (sections 107-115). Section 108 enables a District Council to prohibit, under penalty, the giving out of work to be done on particular unwholesome premises, and section 109 imposes a penalty on the occupier of a factory if he gives out "wearing apparel to be made, cleaned, or repaired in any house or building occupied therewith, whilst any inmate of the dwelling-house is suffering from scarlet fever or small-pox." Under section 110, if any inmate of a house is suffering from an infectious disease, the District Council of the District may make an order forbidding any work to which the section applies to be given out to any person living or working in that house.

Section 125 provides that "for the purpose of their duties with respect to workshops and workplaces under this Act, and under the law relating to public health, the District Council, and their officers shall, without prejudice to their other powers, have all such powers of entry, inspection, taking legal proceedings, or otherwise, as an Inspector under this Act."

Under section 131 every District Council shall keep a register of all workshops situate within their District, and under section 132 the Medical Officer of Health of every District Council shall, in his Annual Report to them, report specifically on the administration of this Act

in workshops and workplaces, and he shall send a copy of his annual report, or so much of it as deals with this subject, to the Secretary of State.

Section 133 provides that "where any woman, young person or child, is employed in a workshop in which no abstract of this Act is affixed as by this Act required, and the Medical Officer of the District Council becomes aware thereof, he shall forthwith give written notice thereof to the Inspector for the District."

By section 154 references in this Act to a District Council, and the District thereof, shall be construed as including references to the Council of a County Borough, and the County Borough; and section 155 provides that the powers conferred by this Act on District Councils shall be in addition to, and not in substitution for, any other powers which they may possess.

The Act applies to Scotland and Ireland as well as to England and Wales.

In nearly all the Annual Reports are references to the new Factory and Workshop Act, and in many are statements as to factories and workshops inspected during 1904. The Reports are nearly all according to a form supplied, and deal with many details as required. As this Act has now been in force for three years Medical Officers of Health have become familiar with the new duties imposed upon them, and these seem generally to be carried out efficiently in the Boroughs and Districts in the County.

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 the number of common lodging-houses on the Register is 7. Two situated in Whitegates were removed when the property was taken down to provide a railway siding to the new town depôt. These were probably the worst premises of the sort in the town. Another house in Oak Street has been registered during the year. The total accommodation provided by common lodging-houses is 129 beds. There are, however, very many private houses where labourers and other working men in steady employment lodge. The character of the housing provided by these common lodging-houses is of the most inferior description; none of the premises comply with the requirements of a lodging-house, while structurally several are very defective. Prosecutions for over-

crowding and for using unregistered premises as common lodging-houses were undertaken in four instances. The defendants in each case were dismissed on payment of costs.

At Hyde there are 3 common lodging-houses, which, together, provide accommodation for 85 lodgers. A house, which provided accommodation for 23 lodgers, was closed during 1904. The remaining ones are unfitted for the purpose. They are difficult to keep clean and ill ventilated, and the structural arrangements are bad. The record for the Borough of Macclesfield is no better. The common lodging-houses there, during 1904, accommodate an average of upwards of 94 nightly lodgers; and most of the houses are structurally unsuitable for the purpose. Small-pox invaded two of these houses in 1903, and the outbreak of small-pox in June, 1904, began in a common lodging-house. The Sanitary Inspector paid 399 visits to those premises in 1904, but it does not seem possible to keep them in order. Medical Officers of Health for the Boroughs point out that the remedy for this extremely unsatisfactory state of things is the erection of a Municipally-owned lodging-house. Such a house, if well conducted, might prove profitable instead of adding to the local rates. No steps have been taken to provide such a lodging-house, though one is much needed. Three years ago some efforts were made to find a suitable site, but the matter was soon allowed to drop, and nothing further done. The Medical Officer of Health for Stalybridge has visited the registered lodging-houses in his Borough every week during the year, and found them fairly sanitary. At Altrincham the lodging-houses were specially visited in 1903-4, lest they should harbour small-pox. They were found clean and in good order. At Lower Bebington the number of common lodging-houses on the Register was reduced from 16 to 5 in 1903. The houses are regularly inspected. New bye-laws have been in force since 1899. At Hollingworth there is but one common lodging-house, and at Mottram but one; these are kept clean and in order. In the town of Nantwich there are five houses on the Register. During the year they were visited almost daily, and found in a clean and orderly condition. The town of Northwich has seven common lodging-houses on the Register. These have been periodically visited by the Inspector, who notes that one house was reported for the filthy state of the bedding, but on a notice being served the house was cleaned and clean bedding was substituted. A case of small-pox was found in another lodging house. In Runcorn Urban District the common lodging-houses have been visited 372 times by the Inspector, and he found cause of complaint on one occasion only. At Sale, the lodging-houses have been inspected as usual. At Sandbach are two large lodging-houses, duly inspected and kept in order. At Wilmslow the lodging-houses have been inspected and found in good order.

At Winsford are three lodging-houses, all inspected and found satisfactory. At Malpas also there are three lodging-houses, all inspected. In Congleton Rural District are six common lodging houses, which have been inspected and found in good order. The lodging-houses in Runcorn Rural District, are reported to be visited from time to time. At Dukinfield, Higher Bebington, Cheadle and Gatley, Hale, Knutsford, Lymm, and in the Nantwich Rural District, and Tintwistle Rural District, there are no common lodging-houses.

The Cleansing of Persons Act, 1897.—As a want of personal cleanliness is not unusual amongst those who frequent common lodging-houses, a note on this Act may be appropriately introduced here. Its object is to "permit Local Authorities to provide cleansing and disinfection for persons infected with vermin." By Section 1 it is enacted that any Local Authority shall have the power, when in their discretion they shall see fit, to permit any person who shall apply to them on the ground that he is invested with vermin, to have the use, free of charge, of the apparatus (if any) which the Authority possesses for cleansing the person and his clothing from vermin. The use of such apparatus is not to be considered to be parochial relief or charitable allowance to the person using the same, or the parents of such person, and no such person or parent shall by reason thereof be deprived of any right or privilege, or be subject to any disqualification or disability. Local appliances, and attendants that may be required for carrying out the Act, and any expenses for these purposes may be defrayed out of any rate or fund applicable by the Authority for general sanitary purposes or for the relief of the poor. The term "Local Authority" means in England the Council of any County Borough, the District Council of any District, any Board of Guardians, and in the County of London any Sanitary Authority as defined in the Public Health (London) Act, 1891.

There is no mention of any action under this Act, except a statement that the Board of Guardians for the Bucklow Union have provided a steam disinfector for cleansing the garments of all vagrants received into Union premises.

Conference on the Spread of Infectious Disease by Vagrants.—On October 21st, 1904, the County Medical Officer of Health was appointed a Delegate of the Cheshire County Council to take part in a Conference of Representatives of the County Councils of England and Wales, the Corporation of the City of London, and the Councils of County Boroughs and Metropolitan Boroughs, and of the Metropolitan Asylums Board. This Conference was held in the County Hall of the London County Council on November 10th. The Corporation of Newcastle-upon-Tyne had drawn the attention of the London County Council to the spread of small-pox in England and Wales through

the agency of vagrants, and had suggested that the Council should convene a Conference of the Sanitary Authorities of England and Wales to consider the question, which the Corporation of Newcastle stated had assumed such dimensions as seriously to threaten public health and morals. The London County Council therefore convened a Conference to consider the question of the agency of vagrants in the spread of infectious diseases, and the preventive or remedial measure which might be adopted. There were present at the Conference 209 delegates, representing 29 County Councils, 56 County Borough Councils, and 26 Metropolitan Boroughs, the Corporation of the City of London, and the Metropolitan Asylums Board. Mr. Henry Jephson, Chairman of the Public Health Committee of the London County Council, occupied the chair.

At this Conference the subjects discussed and the Resolutions passed thereon were as follows :—

GENERAL MEASURES FOR PREVENTING THE SPREAD OF INFECTIOUS DISEASES BY VAGRANTS.

Under this heading the following Resolutions were passed :—

"That this Conference of Urban and Sanitary Authorities of England and Wales recognises the increasing amount of habitual vagrancy as the cause of widespread and disastrous consequences to the public health, and is of opinion that much more effective measures than are at present adopted should be taken for preventing the spread of infectious disease by vagrants, and for effectually dealing with this great and growing danger."

"That the evil can only be met by conferring further powers upon the Local Authorities, viz., the Sanitary Authority, the Board of Guardians, and the Magistracy."

"That means should be provided for the detention and isolation of any vagrant found wandering in a public place, if reasonably suspected of being liable to convey infectious disease."

DANGERS OF COMMON LODGING HOUSES.

Evidence was given from many districts as to the spread of smallpox by means of Common Lodging Houses frequented by tramps.

After some discussion, the following two Resolutions were passed :—

"That this Conference is of opinion that Parliamentary powers should be sought for the compulsorily vacccination and re-vaccination of vagrants in

Common Lodging Houses or Casual Wards who have been exposed to the infection of smallpox, and that it should be an offence to withhold information, or make false statements to the Sanitary Authority in carrying out its powers with respect to the disease, and that the Authority should have power to compensate persons so vaccinated for loss of time."

"That in epidemic times the Local Authority should have increased control over Common Lodging Houses, their keepers, and occupants. Thus the Sanitary Authority should have power to medically examine the inmates, to detain and isolate persons exposed to infection, and to disinfect them and their clothes, to temporarily close Common Lodging Houses in whole or part, and that the keepers of the Lodging Houses should receive compensation; that the Local Authority should be empowered to require medical examination and cleansing of all persons entering casual wards, and disinfection of their clothes; that the Local Sanitary Authorities should have power to require the removal and isolation of any inmate of a casual ward who may reasonably be suspected of being liable to convey infectious disease; and that the Local Authority shall have full power to require the cleansing of the person, and disinfection of the clothes of any person in a casual ward, whether infected or exposed to infection."

CO-OPERATION OF BOARDS OF GUARDIANS AND SANITARY AUTHORITIES.

This was the question next discussed, and it was Resolved—

"That the transmission of smallpox by tramps can only be effectually prevented by the co-operation of Boards of Guardians, who are the Vaccination Authorities, and all the Sanitary Authorities throughout the country."

The following Resolution was also passed—

"That it is desirable that in districts comprising groups of counties and county boroughs, intelligence bureaux should be established, to which information should be sent from Sanitary Authorities and Workhouses in the district of persons of the wandering class who have been exposed to smallpox infection; and that a printed copy of such information should be distributed from the bureau to every Sanitary Authority and Board of

Guardians in the district, and that the expense of working the bureau should be met by contributions from the County Councils and County Boroughs forming the district."

THE LOCAL GOVERNMENT BOARD AND RETURNS OF INFECTIOUS DISEASE.

It was further Resolved—

"That the Local Government Board should obtain powers to obtain local returns of all cases of infectious diseases from all Sanitary Authorities throughout the country."

COUNTY COUNCILS AND LOCAL SANITARY AUTHORITIES.

A Resolution was also passed, approving of powers being given to County Councils to enforce the existing law in all cases where the Local Sanitary Authority refused or neglected to do so."

PORT SANITARY AUTHORITIES AND SMALL-POX.

The question of the importation of small-pox by persons landed from ships was then considered, and a Resolution was passed in the following terms :—

"That the Port Sanitary Authorities should be empowered to take more stringent precautions to prevent the importation of disease by persons suffering from small-pox, or who have been exposed to infection from that disease."

LABOUR BUREAUX.

The following Resolutions were also passed, after a brief discussion :—

"That the time has arrived when the Local Government Board should promote legislation for the establishment of labour bureaux in the areas of every County Council and every County Borough Council."

"That this Conference is also of opinion that it is desirable that a national voluntary agency should be formed for assisting *bona fide* working men while travelling through the country in search of work, and that such agency should be worked on the same lines as the Inter-Cantonal Union of Switzerland for the relief of poor travellers."

LABOUR COLONIES.

The establishment of Labour Colonies was discussed. An opinion was expressed that the unemployed travelling *bona fide* in search of work, not being habitual vagrants, should not be treated

as vagrants but should, as far as possible, be assisted to obtain employment. Undoubted tramps, however, needed different treatment, and it was thought they could be most satisfactorily controlled by means of labour colonies. Accordingly the following Resolutions were passed :—

> "That the time has arrived when the Local Government Board should promote legislation for the establishment of labour colonies for the compulsory detention of habitual vagrants until they have acquired power to work and self-restraint."

> "That this Conference approves and affirms the Resolutions passed by the Executive Council of the Associations of Poor Law Unions in England and Wales at their meeting in September, 1903, as follows, viz. :—

(a) That Boards of Guardians should be grouped in suitable areas to provide labour colonies for vagrants.

(b) That such colonies should be established and governed by joint committees of the Boards of Guardians of the Unions of the said areas.

(c) That habitual vagrants should be sent to such labour colonies by the magistrates.

(d) That the expenses of each colony should be spread over the Unions in the areas served by such colonies."

CHILDREN OF VAGRANTS.

The expediency of withdrawing these children from the control of their parents was discussed, and the following resolution was passed :—

> "That the powers of the Poor Law Guardians under the Poor Law Acts of 1889 and 1899 to assume and exercise in certain circumstances parental rights over the children of pauper parents, should be extended, so as to confer similar rights over the children of habitual vagrants."

GIVING EFFECTS TO THE RESOLUTIONS PASSED.

In order to give practical effect to the foregoing Resolutions, a Committee was appointed to unite with representatives of the County Councils' Association, the Magistracy, and the Association of Poor Law Unions of England and Wales, &c., for the following purposes, viz. :—

(a) To enlist the sympathy and co-operation of Members of Parliament ;

(b) To appoint representatives to wait on the Local Government Board ;

(c) To give evidence before the Inter-Departmental Committee of the Government on the vagrancy question ;

(d) To take such other measures as may be thought desirable in support of the Resolutions arrived at by the Conference.

After the County Medical Officer of Health had presented his Report on this Conference to the Public Health Committee, the following Resolutions were passed :—

RESOLVED—That the resolution embodied in the foregoing Report with reference to the Children of Vagrants be approved, and an intimation to such effect be forwarded to the Local Government Board.

RESOLVED—That an intimation be sent to the Local Government Board that the County Council approve of a measure for securing the detention of regular tramps in labour colonies of some proper description.

Houses Let in Lodgings.—Any Local Authority may, with the consent of the Local Government Board, make bye-laws for fixing the number of persons who may occupy a house or part of a house which is let in lodgings and for the separation of the sexes in a house so let ; also for the registration and inspection of houses so let, for enforcing drainage and the provision for privy accommodation, and for promoting their cleanliness and ventilation, for the cleansing and limewashing of the premises at stated times, and the paving of court-yards, and for the giving of notices, and taking precautions in case of any infectious disease. This is a very useful power (enabling Authorities to have control over a class of lodging-houses which could not be regulated as common lodging-houses), and to assist Authorities in making use of it, model bye-laws have been issued. Still, it appears that only two Districts in the County (Crewe and Wallasey) have bye-laws relating to houses let in lodgings. The bye-laws have been in force in Crewe since 1877. The bye-laws for Wallasey only received the sanction of the Local Government Board early in 1897. In Wallasey the houses on the Register are regularly visited in the daytime, and occasionally at night. The proper cleansing of rooms, passages, staircases and yards is insisted on.

Water Supply.—By the Public Health Act, 1875, power is given to 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 wash-houses, or for trade purposes on terms agreed on, or may gratuitously supply public baths or wash-houses, established otherwise than for private profit; and Urban Authorities must provide and maintain fire-plugs, etc, 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. Where, on the report of the Surveyor of a Local Authority, it appears to such Authority that any house within their District is without a proper supply of water and that such a supply of water can be furnished thereto at a cost not exceeding the water-rate authorised by any local Act in force within the District, or where there is not any local Act in force at a cost not exceeding twopence a week, or at such other cost as the Local Government Board may, on the application of the Local Authority, determine under all the circumstances of the case to be reasonable, the Local Authority shall give notice in writing to the owner, requiring him, within a time therein specified, to obtain such supply, and do all such works as may be necessary for that purpose. If such notice is not complied with within the time specified, the Local Authority may obtain such supply, and water-rates may be made and levied on the premises, and any expenses thus incurred by the Authority may be recovered in a summary manner from the owner of the premises; or may, by order of the Authority, be declared to be private improvement expenses.

The Public Health (Water) Act, 1878, amends the Public Health Act, 1875, so 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 water supply, and the Authority are of opinion that it can be provided at a reasonable cost not exceeding a capital sum, the interest on which at the rate of five per cent. per annum would amount to twopence per week, or at such other cost not exceeding a capital sum the interest on which at the rate of five per cent. per annum would amount to threepence per week, as the Local Government Board may, on the application of the Local Authority, determine under all the circumstances of the case to be reasonable, (etc.), 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 expenses from the owner. This provision does not exempt the Authority from the

duty (imposed on them by the Public Health Act, 1875) of supplying their District in cases where danger arises to the health of the inhabitants from the insufficiency or unwholesomeness of the existing supply and a general scheme of supply is required, and such supply can be got at a reasonable cost. It is not lawful in any Rural District for the owner of a dwelling-house, built or re-built from the ground floor, after the date of the commencement of this Act, to allow the same to be occupied without having obtained a certificate from the Sanitary Authority that a sufficient supply of wholesome water is available. It is made the duty of the Rural Authority, from time to time, to ascertain the condition of the water supply within their District.

These powers would be sufficient to enable every Authority to obtain an adequate and wholesome supply for every household, if it were not for the restrictions conveyed in the words "reasonable cost." It often happens that the Medical Officer of Health, Surveyor, or Inspector, reports that a house is without a sufficient supply of wholesome water, but the Authority are not of the opinion that the supply can be provided at a reasonable cost, and so no action is taken ; again, 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, liable to pollution from the surface, will be used.

The Reports from the towns are as follows :—At Congleton Borough the service is constant, and during 1904 the supply has been fairly satisfactory as regards quantity and quality. The supply for the Borough of Crewe is from artesian wells at Whitmore. It is tested from time to time and found uniformly good. The quantity of water used in 1904 was equal to 13.8 gallons per head of the population per day. Dukinfield, with Ashton-under-Lyne, and Mossley, in Lancashire, and Stalybridge, jointly own the District Waterworks. The water is gathered from springs and streams in the Swineshaw Valley, and is pure and abundant. The gross supply for Dukinfield in 1904 was, however, only 18.17 gallons per head per day, lower than the local average. The supply being deficient in dry seasons (as in 1901), a new reservoir has lately been made. This water, though very pure, is very soft, and when in 1901 it had to be cut off at night during parts of the year

some cases of lead poisoning occurred. The water reservoirs are stocked with trout of a good size and quality. Manchester Corporation water has been supplied to the higher parts of the Borough of Hyde since 1893. It comes from the reservoirs at Woodhead, and is abundant and of good quality. Water for trade purposes is obtained from the reservoirs of Hyde Corporation situated at Gee Cross. At the Borough of Macclesfield the general water supply has been abundant, and generally of good quality. It has from time to time been examined chemically and bacteriologically During 1902, the Town Council made application to the Local Government Board for sanction to borrow £2,500, for the purchase of Lower Ridgeate Farm, Sutton, which abuts on the upper storage reservoir of the Town's Water Supply, and had been polluting the water. In September the sanction asked for was obtained. The reservoirs are stocked with trout. During 1903 there were several complaints as to the quality of the water. After chemical analysis a satisfactory report was received, but a bacteriological examination of three samples showed that they all contained the BACILLUS COLI, and that the water was liable to pollution In 1904 samples of the town's water, the Hollin's Mount water, and the Hurdsfield water were submitted for chemical analysis and bacteriological examination. The Borough Analyst's opinion thereon is as follows:—"These three waters are free from odour or taste. They are neutral. No poisonous metals were present. The Town's water and Hurdsfield water contain a slight sediment. I am of opinion that these waters are of excellent quality and well suited for all purposes." The certificate from the Lister Institute of Preventive Medicine, on the bacteriological examination of the waters conclude in the following words:—"The town's water shows great improvement when compared with the results obtained previously; but the waters from Hollin's Mount and Hurdsfield seem to be in the same condition as they were when the last examination was made."

Alderley Edge is supplied from the Stockport Water Works Company. This water was good in 1903, but in parts of the District complaints were occasionally received of discoloration. A few houses only depend on pump wells. At Alsager the inadequacy of the water-supply is recognised by the District Council, and a Committee has been appointed to improve the supply, but no course of action has yet been decided on. A number of houses are without water-supply, several are dependent on shallow wells, imperfectly protected and liable to be contaminated. On several occasions the advice of experts has been sought as to the best means of providing a sufficient supply, but the advice given has not been followed. The present reservoir, at a minimum estimate of ten gallons per head per day, represents a four days' supply. A small supplementary reservoir should be provided for the supply of Lindley. The supply for Altrincham and Ashton-upon-Mersey is derived from Manchester, and distributed by the North Cheshire Water Company. It has been tested from time to time and found satisfactory. In 1904 and in recent years the supply appears to have been

sufficient at Altrincham, but a little scanty at Ashton-upon-Mersey. Public Baths were opened at Altrincham during 1901, and are likely to meet a long felt want. Higher and Lower Bebbington have very good water from the West Cheshire Water Works. Of late, this water has become hard, and efforts are being made to have it softened. The Company are willing to soften the water if empowered to recover the expense by an addition to the water-rate. Works for the water-supply of Bollington were practically complete on February 18th, 1899. The extension of the mains in the added portion of the District has been effected, and almost the whole of the houses have been connected to the mains. In the Report for 1901 it was stated, that the yield from the bore-hole had so greatly diminished that this District Council had to limit the supply to two hours a day, reducing the consumption per head per day from 19 gallons to 6 gallons. The Local Government Board then insisted on an additional water-supply being obtained, and steps were taken to do this. The work of connecting the supplementary supply from Dane Bent has been rapidly pushed forward, so that this may be available if required. As delay was experienced in obtaining the Local Government Board's sanction to the proposed reservoir as planned, this portion of the work was not carried out. However, the laying of a new main direct to the bore-hole was accomplished in August, 1902, and the original works have since proved ample for the supply of the whole District. Twenty-one new houses were thus supplied in 1903, and 26 old houses. The Report for 1904 states that the supply continues very satisfactory, and it is hoped that the amount will be sufficient for all emergencies. Bowdon continues to have a sufficient supply of good water from Manchester. The District of Bredbury and Romiley has a good supply of wholesome water, obtained through the Stockport Corporation from the Woodhead reservoir. During 1904 the mains were extended by laying 290 yards of pipes to supply 127 houses and outlying property. Nearly the whole of the District is now supplied with Manchester water. Mains are being extended into the portion of Brinnington recently added to Bredbury, to supply farms and cottages. In Bromborough Urban District the Pool Works Village is supplied from deep wells belonging to Price's Patent Candle Co., and the remainder of the District has the good deep wells of the West Cheshire Water Works. Buglawton has a good supply from the local Water Works, which were completed in 1895. Cheadle and Gatley are supplied from the Stockport District Water Works. Ordinarily the supply is sufficient for the needs of the District. In the autumn of 1902 the supply to Cheadle Hulme was curtailed for a few weeks, in 1903 there was no curtailment, but at times the water was so discoloured and turbid, as to be hardly fit for domestic purposes. In 1904 there was curtailment of supply during the prolonged dry weather in September and October, and at times the water was very discoloured. The

Compstall water-supply is obtained from springs on the upland and stored in two reservoirs. The water is soft, clear, and of good quality. The supply is practically unlimited. The District of Ellesmere Port and Whitby is supplied from the West Cheshire Water Works. The water supply in Hale is satisfactory. Handforth is supplied by the Stockport Corporation The water is of good quality and sufficient. Hazel Grove and Bramhall have a good supply from the Lymm Park reservoirs of the Stockport Corporation. The Report from Hollingworth and Mottram is, that the supply which is taken from the Manchester Corporation reservoirs is pure and usually plentiful. Hoole is supplied by the Chester City Water Works, except at Piper's Ash. Hoylake and West Kirby have an excellent supply from deep wells at West Kirby. The Company supplying water to Knutsford, it will be remembered, yielded to the public demand for a purer water, and began boring at Booth Mill, in the middle of 1906. Sandstone was touched at a depth of 776 feet, and it was hoped that a good supply would be obtained. Unfortunately an accident to the bore-hole happened on April 30th, 1898, and it took till November 17th, 1899, to rectify it. Boring was then resumed, and continued more or less slowly, in 1900 and 1901. The Report of the Medical Officer of Health for 1902 is as follows:—"At last boring at Booth Mill has been abandoned. A depth of nearly 2,000 feet was reached without satisfactory result. The water-supply, therefore, remains as before, taken from a stream admitted on all hands to be polluted; but so far not showing any obvious results to the detriment of the public Health." The Medical Officer of Health, in view of what took place at Maidstone, is "bound to believe that circumstances might arise which would be very serious; but the majority of the inhabitants appear to take little note of the risk." The Report for 1903 states that the water-supply "remains as before." The Report for 1904 states that "this water is ample in quantity and although it does not yield the best test on chemical analysis, yet it stands the test of experience, for no actual ill effects have ever been attributed to its use." He admits, however, that "there is an undoubted element of risk in the source of supply."

Lymm is supplied by a Company, and the water has been analysed from time to time by the Medical Officer of Health and by an independent Analyst. The results show that this supply is a pure potable water. Certain private supplies "are not above suspicion," and some of these are closed from time to time. Several cottages are dependent on surface water, where good town's water could be laid on. Marple has a good supply, which is laid on to all but a small percentage of the houses. It is obtained in bulk from Stockport Corporation filters at High Lane, and is daily pumped into the service reservoir at Wybersley. It is of good quality, but the drought caused shortage of supply between September 25th and November 12th. The amount used during 1904 (including what was for flushing, &c.) was only about 9 gallons

per head per day. At Middlewich the waterworks (completed in 1896) continue to yield a supply, but it is found to be deficient in quantity, especially during dry weather. The District Council have devoted much time to the consideration of means to increase the supply, but so far without success. The District Surveyor has reported on five probable sources of supply. An arrangement was made by the Council for deep boring on their land at Sproston, the man who was to do the work undertaking to find water acceptable to the Local Government Board or forfeit the cost of the boring. This, however, could not be done, as the Local Government Board would not sanction such an arrangement, although the Chairman and Vice-Chairman of the Council waited personally on the Board in London in support of their arrangement. The supply has been gravely deficient in quantity throughout almost the whole of the year 1904. According to the District Surveyor "active steps are now being taken by the Council to obtain a new source of supply, and much work has been done during the year with this object. Negotiations for the purchase of a suitable source are pending."

Nantwich Urban District continues to be supplied by Baddiley Waterworks. The supply continues discoloured and the pressure is insufficient. The long continued dry weather in the Summer of 1904 severely taxed the resources of the Waterworks. Numerous complaints were received. The question of obtaining a supply from the Liverpool Corporation mains (jointly with Nantwich Rural District) was further considered in the early part of 1904, but as the Council failed to obtain this water at a lower price than that at which it had previously been offered (9d. per 1000 gallons) the scheme was abandoned as being too costly. Mr. Baldwin Latham was retained as Consulting Engineer, to advise as to another mode of supply. He submitted 2 schemes, both of which have been considered, viz. :—(1) a scheme for the enlargement of the storage at Baddiley, and for increasing the main capacity from the waterworks to the town ; and (2) an alternative scheme for obtaining water from the Checkley District. The latter was strongly recommended by Mr. Baldwin Latham. Up to the present the Council have not acquired a suitable site.

The District of Neston and Parkgate has a supply of high organic purity, from its own Water Works, the water being derived from deep wells. Sixteen new houses and 8 old ones were newly supplied, and 1360 yards of water-mains were laid during 1904. At Northwich Urban District the whole of the domestic supply is from the District Council's mains, by constant service from the Cote Brook springs—a supply of great purity. There is need of more storage room, and the construction of an additional reservoir is under consideration. The old Wade Brook supply is only used for street-watering and sewer-flushing. The supply for Runcorn Urban District is obtained at present from a deep well situated on Runcorn Common. The well is about 300 feet deep, and (it is believed) about 70 feet below the bed of the River

Mersey. Water is pumped from the well into a large receiver situated on Runcorn Hill, and distributed by gravitation to the whole District. The Authority took over the duties of a Limited Company about 11 years ago. The supply is plentiful. Samples are submitted from time to time for chemical analysis or bacteriological examination. No indication of sewage-filtration has ever been obtained. The water is, however, rather hard for a public supply. Sale has a good supply from the North Cheshire Water Works. This water is from the Manchester Corporation Reservoirs at Woodhead. The Medical Officer of Health states that the water contains a certain amount of earthy matter, which might be removed. The town supply of Sandbach is water derived from an upland source and treated by Clarke's process. The water is very pure, and continues to be amply sufficient not only for Sandbach, but also for the Townships supplied through Congleton Rural District Council. New tanks were added to the plant used for softening the water in 1898-99, to enable the Authority to deliver a perfectly clear water. With few exceptions all the houses in the District on the pipe where the private supply have been condemned have been connected with the District Council's mains. Owing to the large quantity of oxide of iron in the crude water a good deal of sediment deposits in the gravitation main, thus obstructing the flow of water and increasing the friction in working A new 10in. gravitation main is being put in, so that the Council can have the main cleaned out without interrupting the supply of water, and have a second main in the event of a break down. At Tarporley the town is well supplied with water from the Liverpool Water Works. The water is soft, and care is taken not to use lead pipes in any part of the house service. There are upwards of 300 houses and premises now in connection with the mains. In parts of the District are ordinary wells, other parts are supplied from springs, the water from which is of excellent quality. Part of the Township of Rushton (comprising 5 farms and 5 cottages), lately in need of water, was in 1903 supplied by a main connected with the Liverpool Waterworks. Wallasey Urban District has a good supply. The average quantity used per head per day in 1904 was 32.99 gallons. A supplementary supply has been obtained from the Liverpool Water Works. Some time since, owing to the old Poulton Wells, Nos. 1 and 2, having become impregnated with too large a proportion of salt, it was felt that it was not safe to depend entirely on the Seaview Road Well. After long consideration it was decided to apply to Liverpool to provide Vyrnwy water. This was done, and a pipe line was laid from near Norton Tower, in the Delamere District, from the Liverpool main line. This supplementary line was commences on October 10th, 1903. At present 500,000 gallons daily are taken from this source. Wilmslow Urban District has a good and sufficient supply from the Stockport Corporation Water Works. At Winsford the public supply is derived from springs in the Township of Little Budworth, and

is generally satisfactory in quality and quantity. At Yeardsley-cum-Whaley the new reservoir at Stoneheads supplies a part of the District. During 1899 the District Council entered into a provisional agreement with Colonel Cotton-Jodrell for the acquisition of his water-rights at Stoneheads and Diglee. The District Council also made application to the Local Government Board for sanction to borrow £7,000 to carry out an efficient scheme for furnishing the District with water. An Inquiry was held by an Inspector of the Board in September, 1900, and in the summer of 1901 the Board sanctioned the borrowing of the sum named. During 1902 this public water supply was completed, and a large number of houses have been supplied in 1902-4. However, there are still houses in this District without good water.

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 :—In the Bucklow District, the North Cheshire Water Company supply Timperley, Dunham Massey, and Northenden. In other parts of the District there was no good general supply. In some parts it is difficult to find good water. In 1902 the Medical Officer had to report a serious failure of water in many wells in Dunham Massey, owing to the abstraction of subsoil water by the cutting for a sewer. However, after the cutting was filled up the water returned to the wells. In Chester Rural District part is supplied by the Chester Water Works, part from Wirral Water Works, and part from Wrexham Water Works ; elsewhere some of the houses have good well-water and some water which is unsuitable or deficient in quantity. Christleton, Newton, and Upton have supplies from Chester Water Works. During 1889 the extension of the Chester water-mains to Great Boughton was accomplished by private enterprise. Great Saughall, Capenhurst, and part of Mollington are supplied from the Wrexham Water Works. Mollington was in 1903 given a supply from the Chester mains, the principal landowners contributing four-fifths of the initial expenditure. The Rural District is traversed by a large conduit taking Vyrnwy water to Wallasey, and this may become a further available source of supply. A few houses are being supplied therefrom. In the Congleton Rural District most parts are reported to be well supplied with water ; but Rode Heath and Thurlwood are much in need of water. The District Council are endeavouring to obtain water for Holmes Chapel, which is in great need of it. There are also a few cottages at Tetton with only very inferior water. It was mentioned in the Report for 1903 that water had been supplied to the Parish of Lawton by the North Stafford Company. A letter from Dr. Crutchley, of Alsager, dated December 1st, 1904, complaining that a reasonable satisfactory supply of water should have been made for Rode Heath and Thurlwood some years since, as this deficiency has again and again been reported to the Rural

District Council by their Medical Officer of Health. It was pointed out that many of the shallow wells now in use, though possibly not so bad as to permit of their being condemned, are so near cess pools that they may become speci cally polluted at any time.

The Disley Rural District is almost wholly within the Stockport water-supply area. The village of Disley is supplied, but during the summer of 1903, as in other years, the supply was usually turned off at night. Arrangements should be made for an increased supply. Further water-works, being constructed in the Kinder Watershed, will enable the Corporation to improve their supply, but the Corporation should be pressed for some temporary advance works, which will permit of a constant supply being given to Disley. Furness Vale is within the limit of supply of the Corporation of Stockport, but no supply as yet been provided. The property owners were asked if they were willing to have a water-supply laid on to their houses by the Stockport Corporation, but the majority declined the offer, so the tenants have to continue to obtain their water from local sources, and this is often of a very inferior quality. The District Medical Officer of Health urges the District Council "to take steps to prevent the majority of the inhabitants of Furness Vale having to drink contaminated water, as is the case at present." In 1902 the Stockport Corporation extended their water main from Springfield to Newtown, with the result that the supply to Newtown was improved. However, in the summer, the supply was intermittent as at Disley.

In Macclesfield Rural District the proposal to purchase water under the provisions of Section 61 of the Public Health Act, 1875, from the Corporation of Macclesfield, and to distribute it in several Townships was the subject of an Official Inquiry by the Local Government Board in 1903, and on receipt of the Board's sanction the work was at once taken in hand. Water-mains have been laid in the Townships of Upton, Fallibroome, Prestbury, Butley, and Tytherington. On the completion of the works, copies of the regulations, scale of charges, and forms of application for supply were sent to the owners of all the houses en route. Where there was a dilatoriness on the part of the owners in availing themselves of the supply, Statutory Notices were served. The water is now in use at every house on the line, exc pt two, which have private supplies of a satisfactory character. At Upton 36 houses have been supplied, at Prestbury 34 houses, at Butley 49 houses, and at Tytherington 23 houses. As regards water for Rainow, the source of supply, which was the subject of negotiations two years ago, having been secured, proposals for the collection, storage and distribution of this water were formulated and approved in 1902, and submitted to the Local Government Board with an application for sanction to a loan of £1,000 wherewith to construct the works. An official Inquiry was held by a Local Government Board Inspector in 1903, and the loan was sanctioned. Since this the Parish Council have petitioned the

Rural District Council not to proceed in carrying out the scheme. A petition to the same effect, signed by a large majority of the ratepayers, including the occupiers of three-fourths of the houses to which the proposed supply would be conveyed, has been received by the Rural District Council. The Water Works at Poynton, which are owned by Lord Vernon, were extended during 1903 by the laying of 1,800 yards of water-mains, the construction of a pumping station, and a new small service reservoir for the higher parts of the Township. The pumping machinery is driven by a gas engine. Thirty-four houses were newly supplied in 1903, and 27 houses were newly supplied in 1904. The number of houses now supplied from these works is 186. In the Annual Report for 1902 it was mentioned that the Stockport Corporation Waterworks were during the year extended in Chorley and Great Warford by the laying of 5,186 yards of water-mains. Twenty-eight houses are now thus supplied in Great Warford, and 27 houses in Chorley. As regards the Township of Taxal a provisional agreement has been entered into with Chapel-en-le-Frith Rural District Council for a supply of water in bulk under the provision of Section 61 of the Public Health Act, 1875, for distribution in Taxal. Application was made in 1903 to the Local Government Board for their approval of this agreement, and to sanction a loan with which to construct the works. The Board gave their approval and sanction, and the works (including the laying of 680 yards of water-mains) have been completed. Fifty-one of the 58 houses en route are supplied.

In Malpas Rural District, the supply to the town of Malpas and to the township of Bickley is from the Liverpool mains, but it is not constant, and in outlying parts of the District the inhabitants are dependent on private wells and springs, several of which are liable to pollution. Attention has been directed to the water-supply of Marbury and a very good supply was during 1902 brought into the centre of the village by the Lord of the Manor, who is the principal landowner. The water is conveyed into a tank, from which it is pumped, providing a free supply to the inhabitants. In 1903 water was brought for some distance for the supply of the school and adjacent houses. There is still progress to report in Nantwich Rural District. In particular the laying of auxiliary mains in Chorlton, Hough, Shavington, Wybunbury and Stapeley, and the extension of mains in Alvaston, Haslington, Haughton, and Wistaston, have added a considerable length to the mileage of water-mains in this Rural District in 1904. In all, 8,073 yards have been added to the system, the whole having been laid by the Council. The entire length of water-mains laid in the Rural Districts since 1879 has been 274,931 yards, or nearly 156¼ miles. Mains laid by private owners prior to 1901 have not been included. Eighty-two additional houses were supplied with water from the Council's mains during 1904, making a total of 4,032 houses supplied by mains in the district since 1879.

The consumption of water throughout the whole District during 1904, has been 66,850,000 gallons, of which 1,110,000 gallons have been supplied to Bickley, for the Malpas Rural District Council, giving a consumption per house per day of 55.7 gallons for the whole District, and a consumption of 11.1 gallons per head of the population per day. The pressure throughout the large District supplied by water-mains is quite satisfactory. The Stapeley Water Works are in good order but owing to the inadequate rainfall during the latter part of 1904, the shortage in the reservoir had at times to be supplemented from the upper mains. The Barthomley well has been greatly improved, and a new pump was put in during 1904. The water-supply of 3 houses, within the statutory limits of water-mains, having been reported on as "bad" by the County Analyst, have been coupled up with the mains.

In the Northwich Rural District there are now works for water-supply in 23 Townships, and the supply to the Union Workhouse (in the Urban District) has also been maintained. Thus about 17,000 of the population have an uninterrupted supply. Of the remaining 5,650 about half have a fairly good supply from pump wells, but the rest are much in need of good water. The part of Winnington till lately supplied with shallow wells, has been supplied from the mains of the Northwich Urban District Council. Wimboldsley is still without a public supply, and badly in need of it, but borings for water are now in progress. An additional supply has been secured for Barnton, a township which is increasing rapidly in size. Occleston and Little Budworth also are much in need of good water, the Shelton wells, on which they depend, yielding, in many instances, water of doubtful quality. The District Council's water-mains have been lately extended at Gorstake and Weaverham. Seven samples of water were analysed in 1904. Of these 2 from new wells (proposed for supply of new houses) were certified "bad," and one as "suspicious." In one instance typhoid contamination was strongly suspected. A sample of this water was submitted to Professor Delépine, and his report furnished conclusive evidence of local contamination. The well was closed.

In Runcorn Rural District, portions of Appleton, known as Stockton Heath and Wilderspool have a good and plentiful supply of water from the Warrington Water Works, and the greater portions of the villages of Walton Superior, and Moore are supplied from the same source. During 1900 the Warrington Corporation obtained the necessary powers to extend the Water Works system further into the Rural District. This extension, when carried out, will prove of great benefit to Hatton, Stretton, and such contiguous areas as will be traversed by the extended water-mains. At Acton Grange

the water-supply is not satisfactory, and a good supply might be obtained from Warrington. The supply of a portion of Bartington is still defective, but an attempt to obtain water by gravitation has been begun, and seems likely to succeed. Engineering difficulties of an unexpected character have caused delays. As the water-mains have been extended to Daresbury, this village has a good supply—a large proportion of the houses have already been connected. At Dutton, water is still needed, and an extension of the Liverpool mains is being considered. The site of the proposed Isolation Hospital is in this Township; an extension of the mains will, therefore, not be long postponed. There were many bad or indifferent water supplies at Stretton, a fact which was illustrated by an outbreak of enteric fever in 1901. An almost complete survey was made of the various water-supplies in this Township, and a series of 26 waters were analysed in 1902. Only four samples proved "first-class water." Negotiations for giving an improved supply to this Township are going on. As the suggested extension of the Warrington water-mains to Stretton implies their being laid through a portion of Appleton, houses along the pipe-line will no doubt be provided with Warrington water. At Thelwall an extension of the Warrington water-mains has been made to the village, and many houses and a few farms have been supplied. The Thelwall supply will be available for a portion of Grappenhall. The remaining portion of Grappenhall is supplied by a private Water Works belonging to one of the principal landowners, and erected at his cost. In 1904 the Warrington mains were extended to Higher Stretton, where about a dozen houses and farms have been supplied. The other portion of Stretton may be supplied by a further extension. Aston Heath is still in need of good water, and should be supplied from the Liverpool mains. The improved supply at Clifton continues good. Halton, Weston Point, and the village of Weston are supplied from the Runcorn Urban Authority's Water Works. The village of Norton is supplied with Liverpool Water, but the mains require to be extended. The scheme for supplying Sutton from Liverpool mains, which was carried out in 1898, continues to prove satisfactory. Alvanley still requires an improved water-supply. It is possible that an extension of mains to Alvanley may be made in the event of the Rural District Council acquiring the Helsby Water Works. Supplying Frodsham has proved a success, and the undertaking is self-supporting. All the houses in the Township, with seven exceptions, are connected with the mains and these seven have good water from wells. At Frodsham Lordship all the houses available have been connected with Frodsham mains. At Kingsley, the upper part of the Township is much in need of water. Nothing has been done to improve the supply for years.

In Tarvin District the supply is mainly from shallow wells or surface springs. However, the villages of Aldford, Churton, and Saighton, are supplied from the Wrexham Water Works, the mains having been extended by the Duke of Westminster, who also caused Waverton to be supplied with water from a well, the water being raised by a windmill. The village of Ashton has been supplied by the owners by means of a gravitation scheme. At Harthill and Kelsall are gravitation supplies from wells, provided by owners of property for their tenants. The District Council have lately expended £4,500 in works of water-supply for the Townships of Beeston, Tilstone Fearnall, and Tiverton. There has been a greater demand for this water than was anticipated, and either another bore hole or further storage seems needed. The village of Tarvin is dependent on ordinary wells for water, one of which was constructed by the Rural Sanitary Authority. The water from some of the wells is not good, and all the wells are in some degree liable to pollution. Several efforts have been made in past years to introduce a pure supply from without, but a large proportion of the ratepayers oppose it on account of expense. In Tintwistle the water is good and plentiful. Wirral Rural District is generally supplied from the West Cheshire Water Works, except Bidston-cum-Ford and Noctorum, which are supplied from the Birkenhead Water Works; and Moreton and Saughall Massie from the West Kirby Water Works. The West Cheshire water has of late become unduly hard, and much inconvenience has been caused thereby. Efforts are being made to get it softened. Wirral Rural District is traversed, but not supplied, by a large pipe conveying water from Vyrnwy to Wallasey.

There is a Report presented quarterly by the County Analyst giving particulars of the results of analyses of samples of water submitted to him from the Urban and Rural Districts, and the County Council take steps to ascertain what action is taken by the several Authorities, for preventing water certified as bad, or of doubtful purity, from being used for domestic purposes. Out of 86 samples analysed in 1904, there were 14 certified as "very bad," 2 as "bad," 14 as "not good," 2 as containing an excess of organic matter, 5 as not recommended if better can be obtained, 7 as requiring to be filtered, and 2 as very hard.

The Purification of Water by Copper Sulphate—In the Report from the Borough of Macclesfield is a reference to a new method of purifying water, by means of copper sulphate, familiarly known as blue vitriol. It has been konwn for some time that copper destroys bacteria, but the metal has not been much used for this purpose, as it was generally believed that the quantity of copper salt required to purify water would poison the water. Dr. George T. Moore has

recently announced that he has discovered how to get the good effect of copper without in any way endangering the wholesomeness of the water.* He uses the copper salt so diluted that it cannot hurt the water drinker, and yet it is active enough to destroy in four or five hours the virulent bacilli which spread cholera, typhoid fever, etc. It is alleged that in water which has had sufficient copper sulphate added to it, and has been allowed to stand, no trace of copper can be detected. The copper is quickly precipitated as a hydrate and carbonate, and perhaps, also, in an organic combination, so that after sedimentation the whole of the copper is removed from the water.

There can be no question that the whole matter requires re-investigation. Experiments as to the effect of small quantities of copper sulphate in purifying water are now being made at Macclesfield Borough Water Works.

The District Councils (Water Supply Facilities) Act, 1897.—This Act will probably be especially helpful to those who are endeavouring to obtain a proper water-supply for houses in sparsely populated localities. Its object is to give facilities to District Councils in Rural Districts, to make arrangements with landowners to charge their estates, for the purpose of assisting in the provision of a supply of pure water. In the memorandum which accompanied the Bill, it was pointed out that, at present, limited owners—that is, persons entitled to any lands subject to any mortgage or charge thereon—and their powers, come under the Limited Owners' Reservoirs and Water Supply Further Facilities Act, 1877, by which they have power to carry out the supply of water by going to Land Improvement Companies, spending their own money, or borrowing it, with the approval of the Board of Agriculture. The Act of 1897 provides that all owners, limited or otherwise, may make arrangements with Rural Councils, with the concurrence of the Board of Agriculture, and gives power to all owners to charge their estates, or provide the money for an extension of water-mains. The Act is permissive, and does not extend to Scotland or Ireland. It is to be read with the Improvement of Land Act, 1864.

Dairies, Cow-sheds, and Milk Shops.—Under the Dairies, Cow-sheds, and Milk Shops Orders, it is unlawful for any one 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 reason-

* Bulletin No. 64, Bureau of Plant Industry, Department of Agriculture, United States of America.

able satisfaction of the Authority for its lighting and ventilation, including air-space, 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 infectious disorder, or having been recently in contact with such person, to milk cows, or in any way help in the 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, etc., 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 the dairies and cow-sheds, for securing the cleanliness of milk stores or shops and milk vessels, and for prescribing precautions to be taken against infection and contamination.

Doubtless the terms of these Orders 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 a few 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.

In the Annual Report for 1900, full information was given as to the action taken by the Public Health Committee of the County Council to bring the provisions of the Dairies, Cowsheds, and Milkshops' Orders, under the attention of Councils of Boroughs and Districts in the Administrative County, to induce those who had not made Regulations to make them, and to induce those whose Regulations were out-of-date to make new and satisfactory Regulations. It was there stated that nine Authorities had not made Regulations, and in the Annual Report for 1901 it was stated that there were still five Authorities which had not made Regulations. These Authorities were the Town Council of Stalybridge, and the Urban District Councils of Hazel Grove and Bramhall, Hollingworth, Mottram, and Yeardsley-cum-Whaley. None of these made Regulations during 1902, 1903, or 1904.

No doubt considerable interest has been aroused in the subject, and in 44 out of the 54 Annual Reports sent in, there is some reference to dairies and their regulation. Many Reports state the number of persons registered, the number of persons added to, or removed from the Register, the number of visits to dairies, etc., made by the Inspector, with remarks on the defects observed, and notices served to remedy the same, etc. In three Reports are notes of special interest. In the Report from Crewe it is stated that whilst nearly all the dairymen and milksellers comply with the letter of the law, in few instances, is that scrupulous attention given to cleanliness which its importance demands. "There are," he writes, "78 places in the Borough in which a retail trade in milk is carried on. There are no dairies properly so-called in the Borough, *i.e.*, shops in which milk and other farm products such as butter, cheese, and eggs are exclusively sold. Judging by the amount of attention which seems to be given to it, the sale of milk in many instances is apparently a part of the shop's business, which is not considered to require any special care. The milk is kept either in the tins in which it is received from the farm or wholesale dealer, or in earthenware dishes. The former are sometimes covered, and stand either on the floor before or behind the counter, the latter are invariably without any cover and usually stand on a shelf or upon the counter. Alongside, or close to this vessel, are generally to be found vegetables, sweets, and many other articles. These vessels ought all to have some covering, to prevent access of dust, flies, etc. All cans or other vessels used for the conveyance of milk in carts, either for sale from them or from shops, should be provided with covers." The Report from Wallasey shows that there is a District in the County which in its Regulations requires 800 cubic feet of air-space for each cow, and insist upon having it. On several occasions slight instances of overcrowding were reported in 1904. On intimating this to the cowkeeper the cattle in excess were immediately transferred to other cow-houses, and no legal proceedings were necessary in any case. In one instance, during 1904, a milk-store was closed, owing to the occupier's children having contracted infectious disease. The patient was removed, the whole house disinfected, and the milk-store cleansed, lime-washed, and re-painted. The Report from Bucklow shows that this is a Rural District in which a really earnest attempt has been made to grapple with the difficulty of keeping rural cow-sheds and dairy premises in good order. The progress made has so far been slow, but much in the right direction seems to have been accomplished.

The Dairies, Cowsheds and Milkshops Order of 1899.—This Order, which is dated February 7th, 1899, was issued to amend Article 15 of the Dairies, Cowsheds and Milkshops

Order of 1885, altering the said article, so that for the purposes of the provisions of paragraphs (a) anl (b) thereof, the expressions in the Article which refer to disease shall include in the case of a cow, such disease of the udder as shall be certified by a veterinary surgeon to be tubercular.

The Local Government Board in a circular-letter addressed to Councils of Boroughs and Urban Districts, and dated March 11th, 1899, make the following remarks explanatory of the Dairies, Cowsheds and Milkshops Order, of 1899:—

Article 15 of the Dairies, Cowsheds, and Milkshops Order of 1885 provides that at any time if disease exists among the cattle in a dairy or cow-shed, or other building or place, the milk of a diseased cow therein (a) shall not be mixed with other milk; and (b) shall not be sold or used for human food.

The term "disease" in the Order is limited to those diseases which were included under the Contagious Diseases (Animals) Act, 1878, of which Tuberculosis is not one, and the Royal Commission on Tuberculosis state in paragraph 39 of their Report that "the evidence abundantly shows how "this fact has precluded local authorities from any attempt "to deal with Tuberculosis in milch cows, although they may "have shown themselves alive to the danger, and anxious to "provide a remedy," and they express the opinion that "it "is desirable that the Order should be made applicable to "all diseases of the udder in cows of which milk is offered for "sale."

The Board have issued an Order to amend Article 15 of the Order of 1885 by providing that, for the purposes of paragraphs (a) and (b) of the Article, reference to disease shall include, in the case of a cow, such disease of the udder as shall be certified by a veterinary surgeon to be tubercular. The Board think that it will be competent for the Council to employ and pay a veterinary surgeon with a view of obtaining a certificate under the Article, as amended, or to appoint him as an officer for this purpose, if they think fit to do so.

Model Regulations: Dairies, Cowsheds, and Milkshops.—With the circular letter just referred to, the Local Government Board sent a draft form of Model Regulations for the use of Local Authorities. The Board state that representations had been made to them that it would be desirable that they should issue Model Regulations for the guidance of Councils in making Regulations under Article 13 of the Dairies, Cowsheds, and Milkshops Order of 1885, but that they had deferred doing so, pending the Report of the Royal

Commission on Tuberculosis. That Report having been made, the Board caused some Model Regulations to be prepared, and enclosed copies. The following is an extract from the circular-letter referring to the Regulations:—

It will be observed that No. 8 of the Regulations, which deals with the question of air-space in cow-sheds, does not apply to cow-sheds the cows from which are habitually grazed on grass land, during the greater part of the year, and when not so grazed, are habitually turned out during a portion of each day, and it is obvious that a regulation on this subject which might be adapted to cow-sheds in towns, where the cows are kept and fed within the building, might be unsuitable for cow-sheds in the country, where the cows are regularly grazed on grass land during the greater part of the year, and are during the rest of the year usually turned out for a portion of each day.

The Royal Commission, in their recommendations, drew a distinction between the rules which should be observed on this subject as regards cow-sheds situate in populous and those situate in non-populous places, but no indication was given as to the means by which this distinction was to be made. It is clear that it could not be accomplished by any test of population, or by adopting the geographical limits of Urban anl Rural Districts, without creating anomalies which would be indefensible.

Neither is it easy to say how the distinction can be carried out, except upon the plan suggested by the Board, which seeks to give effect to the chief difference between cow-sheds in towns and cow-sheds in the country, or in other words, between the case of cows which are kept entirely as a rule indoors, and that of cows which are usually turned out to graze.

It will be noticed that No. 4 of the Model Regulations, which provides that every cow-keeper must cause every cow-shed in his occupation to be sufficiently ventilated, and for this purpose to be provided with a sufficient number of openings into the external air, to keep the air in the cow-shed in a wholesome condition, applies in both classes of cases.

If the Council have not already made regulations under the Order of 1885, the Board think that they should do so, and that any such regulations would with advantage be based on the Model Clauses. If the Council have already made regulations under the Order, the Model Clauses may usefully be considered in connection with any fresh regulations, or amendment of the existing code, which the Council may propose to make.

The Board's confirmation of any regulations which may be made by the Council will not be required, but, if at any

time the Board are satisfied on inquiry with respect to any regulation, that the same is of too restrictive a character, or otherwise objectionable, they may direct its revocation; and the Board suggest, that the draft of any regulations which the Council may propose to make should be sent to them for consideration, before the regulations are formally adopted.

Unsound Meat &c. — The statutory powers under which unwholesome food is now ordinarily seized and dealt with in the provinces, are contained in Sections 116 to 119 of the Public Health Act, 1875. Any Medical Officer of Health or Inspector may at all reasonable times inspect and examine any animal, carcase, meat, poultry, game, flesh, fish, fruit, vegetables, corn, bread, flour, or milk, exposed for sale, or of deposited in any place for the purpose of sale, or preparation for sale and intended for the food of man, and if any such animal, carcase, etc., appears 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, etc., 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, etc., 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 a fine. A search warrant may be obtained to search for unsound food kept or concealed in any building. The inability to examine and seize any food when sold, and the inability of the Justices to condemn certain kinds of unsound food, and food sold, and food not seized, have been remedied by Section 28 of the Public Health Acts Amendment Act, 1890. Any Urban or Rural Authority, by adopting this section, may effect the required change as far as relates to the Authority's District.

The powers of Medical Officers of Health and Inspectors to seize, and obtain an order to destroy, any kind of unsound food are therefore ample; yet there appears to be very little food condemned in the County. Either there is practically no trade in unsound meat, etc., in this large County, or the trade is not interfered with. The subject is only alluded to in eleven Reports. In the Borough of Crewe the butchers call the attention of the Medical Officer to any carcase in which abnormalities are found after slaughter, and if, on examination, the carcase appears unfit for human food, the owner is allowed to give up the carcase voluntarily for destruction. This local organization goes by the name of the Butchers' Vigilance Association, and is reported to be of great service to the Authority. Owing to the supervision of the Association over the trade "the quantity of meat exposed for sale is of a high standard."

During 1904, the inspection of six carcases was invited at the slaughter-houses. The disease shown was in each case tuberculosis. The whole carcase was condemned as unfit for human food in three instances. In the others only the affected portion was destroyed. The lowest price paid for any of the carcases was £12 2s. 6d. The Report for Hyde states that no unsound meat was discovered on sale in 1904. In the Borough of Macclesfield there were 163 lbs. of fish and 50 lbs. of mutton submitted for inspection and destroyed. There was also the paunch and 4 feet of a cow seized and destroyed by Magistrates' order. The owner was prosecuted. At Bollington a portion (weighing 44 lbs.) of a carcase of beef, affected with tuberculosis was destroyed. In Cheadle and Gatley no unwholesome food, as far as is known, was exposed for sale in the District. The Medical Officer of Health for Middlewich states that it is commonly believed that unsound animals are killed and the carcases dressed in this District and the meat sent away for consumption, but it is almost impossible to detect offenders. At Sandbach the carcase of a tuberculous cow was discovered and destroyed, but, as it was not exposed for sale, proceedings were not taken against the owner. The Medical Officer of Health for Bucklow Rural District reports that a cow from Aston and another from Plumbley were found to be tuberculous at the Manchester Abattoir. The Aston carcase was destroyed and a portion of the carcase from Plumbley. In Nantwich Rural District no formal seizure of meat was made in 1904. It is common for the Medical Officer of Health or Inspector to be asked to examine doubtful carcases, and it has been widely made known that they are willing to undertake this work. In Runcorn Rural District the Inspector examined 10 carcases during the year, and all were passed.

At Wallasey the amount of unsound or diseased meat destroyed was not very large, considering the importance of the meat trade of the District. There were in all 6255 lbs. of beef, 219 lbs. of mutton, 174 lbs. of veal, 1203 lbs. of pork, 604 lbs. of lamb, and 511 lbs. of offal removed from private slaughter-houses and destroyed. There were 1500 lbs. of meat, &c., removed from butchers, fishmonger and poultry shops, and destroyed. As usual a large amount of meat and offal has been seized at the Foreign Animals' Wharf, Wallasey, and Alfred Docks. The entire quantity seized was 48,053 lbs., viz.: 7913 lbs. of beef, 4873 lbs. of mutton, 1042 lbs. of veal, and 32,225 of offal.

Instructions to Meat Inspectors with regard to Tuberculosis in Animals intended for Food.—In the circular letter of the Local Government Board (dated March 11th, 1899) already referred to,are the following instructions to Meat Inspectors:

The Royal Commission recommended that the Board should "be empowered to issue instructions from time to time for "the guidance of meat inspectors, prescribing the degree of tuber-

"cular disease which, in the opinion of the Board, should cause a "carcase, or part thereof, to be seized.

"Pending the issue of such instructions we are of opinion "that the following principles should be observed in the inspection "of tuberculous carcases of cattle :—

"(a) When there is a miliary "tuberculosis of both "lungs	The entire carcase and all the organs may be seized.
"(b) When tuberculous lesions "are present on the pleura "and peritoneum	
"(c) When tuberculous lesions "are present in the mus- "cular system or in the "lmyphatic glands embed- "ded in or between the "muscles	
"(d) When tuberculous lesions "exist in any part of the "emaciated carcase	
"(a) When the lesions are con- "fined to the lungs and "the thoracic lymphatic "glands	The carcase, if otherwise healthy, shall not be condemned, but every part of it containing tuberculous lesions shall be seized.
"(b) When the lesions are con- "fined to the liver	
"(c) When the lesions are con- "fined to the pharyngeal "lymphatic glands	
"(d) When the lesions are con- "fined to any combination "of the foregoing, but are "collectively small in ex- "tent	

"In view of the greater tendency to generalization of "tuberculosis in the pig, we consider that the presence of tuber- "cular deposit in any degree should involve seizure of the whole "carcase and the organs.

"In respect of foreign dead meat, seizure shall ensue in "every case where the pleura have been 'stripped.'"

The Board do not consider it necessary at present that anything should be added to these instructions, or that they should be modified, and the Board think that the Council should direct those of their officers who are employed as Meat Inspectors to act in accordance with the principles thus laid down.

The Board may at the same time draw attention to Article 19 (7) of their General Order of the 23rd March, 1891, with respect to the duties of an Inspector of Nuisances in rela-

tion to the inspection and seizure of meat. They may point out that where an Inspector of Nuisances is appointed under that Order, or under any Order superseded by that Order, he is required by the Article, in any case of doubt arising under it, to report the matter to the Medical Officer of Health, with a view of obtaining his advice thereon. The Board think it desirable that any such Inspector of Nuisances should be reminded of this provision.

Memorandum on Tuberculous Meat.—Owing to the not infrequent occurrence of tuberculosis in cattle intended for human food, it was thought that it might be of assistance to farmers and butchers to have by them a brief pamphlet setting forth the symptoms of the disease in the living animal and the signs of the disease in the carcase and organs after slaughter.

Accordingly an official Memorandum on Tuberculous Meat was prepared in July, 1903, by the County Medical Officer of Health and Chief Veterinary Inspector.

Copies of this Memorandum were furnished to the Councils of Boroughs and Urban and Rural Districts within the County, and the Chief Constable was asked to permit the Police to hand copies of the same to farmers and butchers in the Parishes under their supervision.

Slaughter-houses.—Urban Authorities may provide Public Abattoirs, for the regulation of which they may make bye-laws. It is a pity this power is so seldom used, as private slaughter-houses, whether licensed or not, are very liable to cause a nuisance. For the purpose of enabling any Urban Authority to regulate slaughter-houses within their District, the provisions of the Town's Improvement Clauses Act, 1847, with respect to slaughter-houses are incorporated with the Public Health Act, 1875. The sections of the Town's Improvement Clauses Act referred to (Secs. 125 to 131) provide (a) that the Urban Authority may licence such slaughter-houses and knacker's yards as they think proper within their District; (b) that no place may be used or occupied as a slaughter-house which was not in such use or occupation prior to the passing of the Act of 1875, or the formation of the District into an Urban District, without first obtaining such licence: (c) that slaughter-houses used prior to 1875 are required to be registered but not licensed; and (d) that the Urban Council may make bye-laws for the regulation of slaughter-houses.

The Reports from 38 Districts record that local slaughter-houses have been inspected, and that they are, with few exceptions, generally well kept. In the Borough of Crewe there are 15 registered slaughter-houses, which are used by 35 butchers. One of these slaughter houses was out of occupation for part of the year. The premises, generally speaking, are kept in a satisfactory way. Some are kept excellently. During 1904 an application for a licence for premises in Wesley Street was refused. In Dukinfield

are ten slaughter-houses in actual use, duly inspected. They are kept clean and in sanitary condition, but some of them are deficient in air space and situated in objectionable places. The Medical Officer of Health for Hyde is in favour of a public abattoir being provided, where systematic inspection of meat could be carried out. There are 29 registered slaughter-houses in this Borough, which are kept properly—but the efficient inspection of meat in these is difficult. Additional powers have been obtained in regard to slaughter-houses under the Hyde Corporation Act, 1903. In the Borough of Macclesfield are 23 registered slaughter-houses, and also 4 premises used for tripe-dressing, too large a number for proper oversight to be exercised. At several of these the floors, drainage, etc., are not satisfactory. The Medical Officer of Health thinks a Municipal Abattoir would be of great benefit to the town. At Altrincham the new abattoir and lairages were completed in 1904. So that the District Council now have the regulation of the meat supply directly within their own control. At Higher Bebington a slaughter-house was built in 1903. At Hale and Hoole there appear to be no slaughter-houses. At Lower Bebington the 3 slaughter-houses have been regularly visited and occasionally the occupiers have needed admonition. The licenses are granted annually. The 3 licensed slaughter-houses are visited and kept clean, but only one has an impervious floor and glazed brick walls, and this is situated close to a building in which an offensive trade is carried on. At Bollington also there are 3 slaughter-houses. Their being kept clean in some degree makes up for structural defects. At Cheadle and Gatley there are 4 slaughter-houses, all still unlicensed. They are reported to be well-kept. At Hollingworth and Mottram the slaughter-houses are reported to be duly inspected. At Hoylake and West Kirby slaughter-houses (4) are inspected and action taken to remedy defects and insure periodical white-washing. At Ellesmere Port are 2 slaughter-houses regularly inspected. At Hazel Grove and Bramhall the slaughter-houses are inspected and defects attended to. At Knutsford and at Lymm the slaughter-houses are periodically inspected, and have been found clean. At Marple the condition of the 5 unlicensed houses is not satisfactory; the buildings are structurally ill-adapted for the purpose and situated in objectionable places. The 15 slaughter-houses at Nantwich are well inspected and kept clean, but not one of them meets the requirements of the Local Government Board. The Medical Officer of Health would be pleased to see them replaced by a public abattoir. At Neston and Parkgate there are 3 licensed houses regularly inspected. In the town of Northwich are 18 slaughter-houses duly inspected. Two have had to undergo alterations. The slaughter-houses at Runcorn and Sale are reported to be regularly inspected. At Sandbach the slaughter-houses are not of the modern type, and yet with care in working and prompt removal of garbage, they have been kept in good order. Attention has been given to the two slaughter-houses at Tarporley. At Wallasey all the slaughter-houses in connection

with the butchers' shops were regularly visited, in addition to the regular inspection of the abattoirs at the Foreign Animals Wharf. The Wilmslow slaughter-houses have been inspected and found satisfactory, yet the Medical Officer of Health thinks a public abattoir should be provided. At Winsford the slaughter-houses have been regularly inspected.

In nine out of the 13 Rural Districts, it is stated that the slaughter-houses are inspected, and in four of these nine Districts they are held to be satisfactory. At Nantwich Rural District urban powers have now been obtained for the whole District. New bye-laws have been prepared by the Council, and these were approved by the Local Government Board in 1904. The good effect is already apparent. The Bucklow Rural District Council were not permitted by the Local Government Board to extend the bye-laws relating to slaughter-houses to the whole District. The three slaughter-houses at Malpas are neither licensed nor registered.

A large proportion of the premises in both Urban and Rural Districts might be much improved.

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 a 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, fell monger, 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 the 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, complaints must be made before a Justice, and if it appears to the Court that the nuisance exists, and that the Defendant had not used the best practical means for abating such nuisance, he shall be liable to a penalty, and on repeated conviction to a higher penalty. The model Bye-laws of the Local Government Board include among offensive trades those of blood-dryer, leather-dresser, tanner, fat melter, glue maker, size maker, and gut scraper.

There is very little reference to offensive trades in the Reports. In seven Reports it is expressly stated that "there are no offensive trades" in the District, and in Crewe there is only one small establishment where an offensive trade is carried on. The business (that of gut-scraping) is carried on without any cause of complaint. At Dukinfield are two premises in the outskirts of the Borough, where offensive trades are carried on. At Macclesfield the only offensive trades appear to be associated with the preparation of tripe, and the premises are well inspected. At Hyde are 7 establishments where tripe-boiling is carried on and one establishment where soap-boiling is carried on. At Mottram there is a

knacker's yard, which is well inspected. At Wallasey the premises used for knackering and other offensive trades in the neighbourhood of Haverlock Street, Seacombe, have been kept under supervision. The drain from the knackery was relaid in 1903, and a good grease-trap was provided.

Food Adulteration.—Mention is made in six Reports of action taken under the Sale of Food and Drugs Acts, etc., by means of which adulteration is detected and punished.

From the Borough of Crewe it is reported that 104 samples of various articles of food or drink were submitted for analysis Of these 5 samples of butter, 3 of milk, and 1 of jam were found to be adulterated. Proceedings were taken in all nine cases. In seven cases a fine ranging from £20, and costs to 1s. and costs, was inflicted, in one case the person proceeded against was ordered to pay costs only, and in one case the defendant absconded before the summons could be served. At the Borough of Macclesfield 88 samples of food and drugs were submitted for analysis. One sample of milk was found to be adulterated with water, and the seller was summoned, but the case against him was dismissed. Two samples of coffee from the same shop were found to be adulterated with 30 per cent. of chicory, and one summons was taken out against the vendor, with the result that he was fined 1/- and costs. At Stalybridge 40 samples were submitted for analysis, and all were certified pure, except certain samples bought as butter. Proceedings were taken in three cases against one person. He was convicted of selling margarine as butter, and fined £20 and costs in each case. The same person was fined £20 and costs for exposing margarine without being labelled, as required by law. At Cheadle and Gatley 7 samples of food were taken for analysis, and found pure.

At Wallasey there were 106 samples taken for analysis. Of these a sample of milk, 1 of vinegar, 1 of brandy and 2 samples of whisky were found to be adulterated. Proceedings were taken. The milk seller was fined 40/- and costs ; the seller of adulterated vinegar was fined 40/- and costs ; the seller of whisky containing 9 per cent. excess of water was fined 20/- and costs ; the seller of whisky containing 7 per cent. excess of water was fined 3/6. The case against the seller of adulterated brandy was dismissed

Recreation Grounds.—There is very little to be reported under this heading. The 10 acres of land purchased for a public park by the Dukinfield Urban District Council, in 1897, has been properly laid out, and was formally opened in 1902. At Crewe much more has been done in providing recreation grounds. Crewe has the Queen's Park, containing over 35 acres, situated in the South Ward, and the 3 playgrounds, viz. : the South Ward playground, area 11,501 square yards ; West Ward playground, area 8,356 square yards ; North Ward playground, area 16,429 square yards. In the opinion of the Medical Officer of Health, "The South and North Ward playgrounds require considerable altera-

tion before they are likely to be much used by children. The provision of swings and other simple gymnastic appliances, and a smooth firm surface adapted to children's games would greatly enhance their value and popularity." At Hoole a piece of land 6¼ acres in extent was acquiredi n 1902 and laid out in 1903. However, it was not opened as a public recreation ground till May 7th, 1904. It has already been much used. At Hoylake and West Kirby attention is drawn to the extensive Parades being constructed along the shore, which, with the Marine Lake, and the lighting of the District by electricity, have tended so much to increase the natural attractiveness of the place. Land at Hoylake, presented to the District Council by Lord Stanley of Alderley, for use as a recreation ground, has been laid out for cricket, football, &c. It is now in regular use. A pavilion has been built at a cost of £130, providing dressing rooms and sanitary conveniences.

Knutsford has always been fortunate in the possession of a large open space (about 50 acres in extent), known as the Heath. In addition to this the District Council has now acquired, by negotiation with Earl Egerton of Tatton, the southern end of the Moor (about 5 acres in extent), lying between the old town and the railway embankment. This has been levelled and fenced; trees and shrubs have been presented, and planted. In the water-logged area, excavation of one part and consolidation of another is effecting a great improvement. A contribution from the Freeholders Fund will minimise the expenditure out of rates.

Meteorological Results.—Six Medical Officers of Health furnish records on the meteorology of the year It is remarkable that three of these records were taken at Bidston, Stalybridge, and Crewe, representing the north-eastern and north-western extremities of the County, and a point in the south about equidistant from the other two points of observation. The fourth record (the entire rainfall only) is from Marple; and the fifth (the entire rainfall only) is from Dukinfield. The sixth is a very complete return from Hoylake and West Kirby, where, since 1901, meteorological observations have been noted in the Annual Report. The observations were taken at Hoylake—the mean barometer, mean temperature, total bright sunlight and total rainfall are recorded for each month in the year. According to the records given, the mean temperature was 48.8 degrees F. at Bidston (near Wallasey), and 49.0 degrees F. at Hoylake. The difference in the rainfall is noticeable. At each station of observation it was deficient. The total rainfall in 1904 was as follows:—

Borough of Crewe	43 96 inches.
Borough of Dukinfield	27.63 ,,
Borough of Stalybridge	26.74 ,,
Bidston (near Wallasey)	25.175 ,,
Hoylake	24.93 ,,
Marple	27.68 ,,

The total rainfall at each of these six stations in 1903 was as follows :

Borough of Crewe	53.28 inches.
Borough of Dukinfield	35.20 „
Borough of Stalybridge	40.09 „
Bidston (near Wallasey) ...	34.418 „
Hoylake	34.71 „
Marple	35.42 „

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

Judging by the Reports, there are 20 Districts in which the provisions of these Acts are in force—the Boroughs of Congleton, Dukinfield, Macclesfield, and Stalybridge; the Urban Districts of Altrincham, Lymm, Marple, Nantwich, Northwich, Sale, Sandbach, Wallasey, Winsford, and Yeardsley-cum-Whaley; and the Rural Districts of Bucklow, Congleton, Macclesfield, Nantwich, Northwich, and Runcorn. The number of boats inspected is not stated as regards Sandbach Urban District. The number of boats inspected in all the other Districts was about 1,200. In some Districts the increased activity in the last six years has been very marked. For example, in Wallasey 71 boats were inspected in 1896, 145 in 1897, 28[illegible] in 1898, 245 in 1899, 233 in 1900, 225 in 1901, 231 in 1902, 320 in 1903, and 313 in 1904.

Interments.—It has been stated in previous Reports that the various burial grounds in Cheadle and Gatley were almost full; and that land had been purchased in 1901 for a Cemetery, and that laying out the ground had been in progress. In the last Report it was mentioned that this Cemetery was formally opened in April, 1903. The Church of England part was consecrated in June.

The completion of the Cemetery for Knutsford, at Tabley Hill, was noticed in the Report for 1901. It is situated about a mile from the town, and the site is a beautiful one. The grave-spaces number about 4,100.

Wilmslow Urban District Council, having been informed by the Wilmslow Church Authorities that there is only space for a few more graves in the Churchyard, have communicated with the Alderley Edge Urban District Council, asking them to consider the advisability of making a Cemetery for the two Districts. As Alderley Edge has not sufficient accommodation in this respect, joint provision of a Cemetery will probably prove a suitable arrangement.

The Medical Officer of Health for Hazel Grove and Bramhall states that space in the Churchyard at St. Thomas's Church, Hazel Grove, the only one in the District, is becoming limited for burials, and that some provision for the near future must be made, and deserves the attention of the District Council.

The Cremation Act, 1902, is an Act of considerable importance from a public health point of view. It is for the regulation of the burning of human remains, and to enable Burial Authorities to establish crematoria.

The Act came into operation on April 1st, 1903, and does not apply to Ireland.

By Section 4, Burial Authorities are empowered to provide and maintain crematoria; but no human remains shall be burnt in any such crematorium until the plans and site thereof have been approved by the Local Government Board, and the building has been certified by the Burial Authority to the Secretary of State to be complete, built in accordance with such plans, and properly equipped for the purpose of the disposal of human remains by burning.

Under Section 5, no crematorium shall be constructed nearer to any dwelling-house than 200 yards, except with the consent, in writing, of the owner, lessee, and occupier of such house, nor within 50 yards of any public highway, nor in the consecrated part of the burial-ground of any Burial Authority.

Section 6 empowers a Burial Authority to accept donations of land, or money, or other property for the purpose of a crematorium.

Section 7 requires the Secretary of State to make regulations as to the maintenance and inspection of crematoria, and prescribes in what cases and under what conditions the burning of any human remains may take place, directing the disposition or interment of the ashes, and prescribing the forms of the notices, certificates, and declarations to be given or made before any such burning is permitted to take place.

Section 8 prescribes very heavy penalties for breaches of the regulations: and under Section 9 the Burial Authority may demand the payment of any such charges or fees for the burning of human remains in any crematorium provided by them, as may be authorised by any table approved by the Local Government Board.

Section 10 provides that nothing in this Act shall interfere with the jurisdiction of any Coroner under the Coroners' Act, 1887, or any Act amending the same, and nothing in this Act shall authorise the Burial Authority, or any person, to create or permit a nuisance.

Under Section 11 the incumbent of any ecclesiastical parish is not obliged to perform a funeral service before, at, or after the cremation of any remains.

Section 12 provides for the fixing, with the approval of the Secretary of State, of fees in respect of burial services.

FRANCIS VACHER,

County Medical Officer of Health.

June 21st, 1905.

Administrative County of Chester.

SUMMARY

OF

REPORTS

OF

District Medical Officers of Health,

FOR THE YEAR

1904.

SUMMARY OF REPORTS

OF

District Medical Officers of Health,

FOR THE YEAR 1904.

CONGLETON

Municipal Borough.

Medical Officer of Health—Dr. P. M. Davidson.
Population at Census on April 1st, 1901, 10,707.
Estimated Population in middle of 1904—10,707.
Area in acres—2572.
Birth-rate per 1000 living—26.9.
Death-rate per 1000 living—19.6.
Death-rate from seven principal Zymotic Diseases—1.0.
Deaths under one year to 1000 births—190.

The population of this Municipal Borough was 10,744 at the Census in 1891, and 10,707 at the Census in 1901. The decrease in the population during the decennium 1891—1901 was thus 37.

The cause of the diminution in the population is no doubt the decay of the staple trade of the town, and consequent lessened demand for labour resulting in people going to obtain employment elsewhere.

During 1904, the number of births registered in the Borough was 289, of which 15 were illegitimate, and the number of deaths registered in the Borough was 200. To these 200 must be added 11 deaths which took place in the Workhouse at Arclid, or other public institutions, outside the Borough, and the death of a non-resident should be subtracted. Thus the deaths belonging to the Borough were 210. The birth-rate is 1.1 below the average in the Borough in the ten years 1894—1903, and the death-rate is 1.8 above the average in the Borough in the same 10 years.

The number of deaths of infants to each 1,000 births was 190 in 1904: it was only 137 in 1894—1903.

Cases of Infectious Disease Notified.—There were 51 cases of infectious disease notified in 1904, viz.:—1 small-pox, 16 diphtheria, 25 scarlet fever, 6 enteric fever, 1 puerperal fever, and 2 erysipelas. Two of the diphtheria cases proved fatal.

Zymotic Mortality.—There were 11 deaths from the seven principal zymotic diseases, viz., 1 measles, 6 whooping cough, 2 diphtheria and 2 diarrhœa. The zymotic death-rate was therefore just over 1.0 per 1,000 living. There were also 4 deaths from epidemic influenza.

Small-pox.—A case of small-pox occurred on September 21st, the patient being a girl 19 years old, living in an overcrowded house at Congleton Edge. On the evening of that day she went to a surgery at Congleton, for advice as to an eruption on her face, and it was discovered that she was suffering from small pox. She was at once removed to the Small-pox Hospital. It was ascertained that the eruption first appeared on her face and hands on September 18th, and that, during the two following days, she had been in constant contact with the members of her family and several friends, and had carried about, and nursed, for the greater part of each of these days, her unvaccinated sister, six months old. The patient had been vaccinated in infancy, and so had all her family, with the exception of the six months old child. She had worked at a pottery in the adjoining District of Biddulph, but had not been to work since the 16th, so that there was not much probability of her having infected any one at Biddulph. On the night of her removal to the Hospital all the members of her family (ten in number), ranging in age from 49 years to 6 months, were vaccinated or re-vaccinated, and they and the house were thoroughly disinfected. On the following day eight other persons, who had been in contact with the patient within three or four days of her removal, were re-vaccinated, and all the "contacts" were kept under observation for a fortnight. Fortunately no one became infected. It is especially remarkable that the disease was not communicated to the unvaccinated infant. The source of infection was not traced.

Diphtheria.—Eight of the cases occurred in September, three being in one house, the sanitary condition of which was good, except there was an offensive cesspool about 20 yards distance therefrom. The remaining eight cases were reported in March, May, June, July, and November, and no connection could be traced between them. No part of the District appeared to be specially affected. It is believed that all the cases were treated with Antitoxin.

Scarlet Fever.—A case, or more than one, occurred every month, but the greatest number were in September and October. The disease was of the mildest possible type, most of those affected did not appear to be ill, and parents frequently complained of the hardship of having to isolate their children for a long period when there did not appear to be anything the matter with them.

Congleton M. B.

Measles.—There were several small outbreaks in the course of the year, and the disease became epidemic in the beginning of September. As at that time it seemed to be specially affecting the children attending St. Mary's School, the said School was closed for a time.

Whooping-cough was present throughout the year, and as already stated caused six deaths.

Inuflenza was prevalent in March, July, November and December. In the last outbreak the disease was rather extensive, and the type rather more severe than at any time during the previous two or three years.

Enteric Fever.—The 6 cases notified were of a very mild type, and occurred in houses the condition of which was not quite satisfactory. The source of infection could not be traced or reasonably attributed to any sanitary shortcoming.

Puerperal Fever.—The cause of this disease occurred in a small and not very clean house, where there was another woman suffering from an offensive ulcerated leg, living in the same room. Thus the death of the recently confined woman was scarcely more than might have been expected, and the Midwife attending her was in no way to blame. However, this Midwife was suspended from work for six weeks.

Diarrhœa.—In August and September there was rather a severe outbreak of summer diarrhœa, but only two cases terminated fatally.

Phthisis.—As there were 13 deaths from this disease the mortality was equal to 1.2 per 1,000 living. This is a high rate.

Other Tubercular Diseases account for 10 deaths, 7 of those who died from these causes being infants under a year old.

Cancer was the registered cause of 14 deaths. Eight of those who died were 65 years old and upwards.

Midwives Act, 1902.—The Medical Officer of Health mentions that many of the best Midwives in Congleton have failed to get registered under this Act, as they were of opinion that the trouble and expense of doing so was too great, considering how little they gained by acting as Midwives among the poor. Of those who have been registered "half can neither read nor write, so that it is a puzzle to find out how they are to keep the elaborate books furnished by the Central Midwives Board."

Congleton M. B.

The Medical Officer of Health points out that there are several details in connection with this Act on which definite information is required. For example:—How are Medical men when called upon by Midwives to assist them in difficult cases to be paid for their services?

Action taken to prevent the Spread of Infection.—All the houses in which infectious disease occurred were thoroughly disinfected, and the patients isolated as far as possible. As regards small-pox, isolation could be promptly effected, but, as to other cases of infectious disease, isolation could not be effectively carried out in the absence of an Isolation Hospital.

Proposed Hospital Accommodation.—The need of accommodation for treating and isolating cases other than small-pox is now in a fair way of being supplied within a reasonable time. The neighbouring Authorities have agreed to combine with the Borough Authority and provide a Joint Hospital. Many unexpected difficulties arose to delay the carrying out of this scheme, and what perhaps caused most delay was one of the combining Districts being in another County.

Small-pox Hospital.—Accommodation for small-pox cases is supplied by the enlarged and improved Hospital at Arclid, which is available for the Borough and other Districts within Congleton Union.

Arrangements for Bacteriological Examinations.—In view of the difficulty sometimes experienced of making certain of the nature of suspected cases of typhoid fever and diphtheria, the Corporation have made arrangements for bacteriological examinations to be made by Professor Delépine, of the Victoria University of Manchester, at a comparatively small cost. The Medical Officer of Health has the necessary apparatus for the collection and transmission of specimens, and will be pleased to hear from practitioners who may wish to have examinations made.

Antitoxin.—Arrangements have been made for the free supply of diphtheria antitoxin, for the use of patients too poor to provide it for themselves.

Factory and Workshop Act.—Under this Act 94 inspections had been made, viz.:—6 of Factories, 71 of Workshops, 15 of Bakehouses, and 2 of Workplaces; 2 inspections have also been made of Home-workers' premises. There are no underground Bakehouses. Generally, the condition of all the premises inspected were found to be satisfactory.

Only trifling defects were discovered, and these were easily put in order. In no instance was there insufficient air-space, and this is not surprising as fewer workers are being employed now in all branches of trade, than was the case some years ago.

Water-supply.—This has been fairly satisfactory as regards quantity and quality throughout the year.

Sewerage and Outfall-works.—The sewering of the town is progressing as rapidly as possible, 19 streets having been sewered during 1904. At the outfall works the septic tanks and two bacteria beds are in working order. These are treating satisfactorily about one-sixth of the sewage of the Borough. It is expected that in another year both the sewerage and outfall works will be completed.

Dairies, &c.—Regulations, under the Dairies, Cowsheds, and Milkshops Order, were made by the Corporation on May 15th, 1900, and came into force on June 24th. Several inspections have since been made, disclosing in some instances defects, which the Authority have endeavoured to remove.

Removing and Deodorizing Excreta.—The method of treating nightsoil with acidulated peat-dust, begun in 1893, continues to give satisfaction. During the year 69 of the old privy-closets were converted into pail-closets, making the number of pail-closets in use at the end of the year, 1615. The number of loads of nightsoil removed was 5,282.

Report of the Surveyor and Inspector.—According to the report of Mr. Burslam, a considerable amount of sanitary work has been done during the year. All the houses at which cases of infectious disease had been reported were duly disinfected, 56 houses were re-drained, trapping and ventilation being attended to, 13 houses were newly supplied with town's water, 560 sanitary inspections were made, and 132 notices to amend sanitary defects were served.

Inspection.—The Medical Officer of Health has visited and inspected the whole district in the course of the year, and many parts of it several times. The Sanitary Inspector is almost daily occupied in some form of sanitary inspection.

Canal Boats.—Five canal boats have been inspected during the year, and no reports appear to have been made of any infringement of the Canal Boats Act or Regulations made thereunder.

CREWE

Municipal Borough.

Medical Officer of Health—Dr. A. J. Laird.
Population at Census on April 1st, 1901—42,074.
Estimated Population in middle of 1904—46,065.
Area in acres—2,185.
Birth-rate per 1,000 living—30.9.
Death-rate per 1,000 living—14.6.
Death-rate from seven principal Zymotic Diseases—1.6.
Deaths under one year to 1,000 births—160.

The population of this Municipal Borough was 42,074 at the Census in 1901, and the population of the corresponding area was 32,774 at the Census in 1891. The increase in the population during the decennium 1891-1901 was thus 9,300; that is, 28.37 per cent.

The estimate of the population made for the middle of 1904 is based upon the number of inhabited houses as obtained from the rate-books, less the number of empty houses, and the resultant multiplied by the average number of persons per house as obtained from the last census.

Houses on Rate Books, September 30th, 1904 ...	10,041
Empty Houses, Midsummer, 1904	424
Total occupied houses	9,617
Persons per house (census 1901)	4.79
Population Midsummer, 1904	46,065

This differs from the method used by the Registrar-General who estimates the population upon the assumption that the same annual rate of increase will be maintained from 1901 to the next census at 1911, as existed in the period 1891 to 1901.

Both methods are subject to error, which increases with the length of time from the last census. In the method used in these reports, the factor for multiplication (the average number per house) varies *e.g.*, at the 1891 census it was 5,911, while at the last census in 1901 it had diminished to 4.79; but on the whole it is probably best suited to places of the size of Crewe, more especially when the population is liable to great fluctuation as the result of the condition of the labour market.

It is extremely probable that the method used has given a lower estimate of the population than is actually the case, for the reason that the proportionate increase in the number of occupied houses is less than before; while there is good reason to believe that the average number of persons per house has increased owing to depression of trade in the town,

and the fact that in many instances two families have united and now occupy one house. This is confirmed also by the information regarding empty houses supplied by the Assistant Overseer. The percentage of these is higher than in any year since 1894, the first year for which the returns are given.

The Borough is divided into four wards. The population of the wards estimated for the middle of 1904 is as follows:—

Central Ward...	10,235
West Ward	10,363
North Ward	11,123
South Ward	14,344

Geology of Crewe and Neighbourhood.—The soil upon which Crewe and the neighbouring villages are built consists wholly of drift-deposits. The whole of the Borough is built upon a redeposited boulder clay (red, blue, and yellow brick clays) intersected here and there with irregular lines and pockets of sand and gravel; probably the remains of old river and brook courses.

This clay deposit, and an underlying bed of stratified clay, lie in a hollow of stratified drift-sand, and attain a depth of from 12 to 100 feet.

The drift-sand rises to the surface in a bay-like curve in the outlying villages of Wistaston, Shavington, Weston, Crewe Green, and Haslington.

The whole of the deposits appear to be laid in a deep hollow in the Keuper; a brook which passes through the centre of the Borough, appearing to have cut down to this formation.

Elevation.—The Borough is situated upon the Valley Brook, a tributory of the River Weaver. The mean elevation is about 170 feet above sea level, and varies from 113 feet at the lowest part of the sewage farm to 200 feet at Hightown.

HEIGHT ABOVE SEA LEVEL.

Sewage Farm (west of Queen's Park) ...	113 feet.
The Valley	145 ,,
Market Square (south-west corner)	184 ,,
Isolation Hospital	182 ,,
Nantwich Road (east end)	188 ,,
Hightown (St. Paul's Church—north side) ...	200 ,,

Area.—The Borough has an area of 2,185 acres, and comprises the Civil Parish of Monks Coppenhall, and parts of the Civil Parishes of Church Coppenhall, Shavington-cum-Gresty, and Wistaston, the three last-named parts being added on 24th March, 1894, by Order of the Local Government Board.

New Houses.—The number of plans passed for new houses in 1904, was 157. The number of plans passed in 1903 was 225. The number of plans passed in 1902 was 400, the number passed in 1901 was 243, the number passed in 1900 was 201, the number passed in 1899 was 385, the number passed in 1898 was 308, the number passed in 1897 was 441, the number passed in 1896 was 317, the number passed in 1895 was 283, and the number passed in 1894 was 238.

The number of "habitation" certificates granted in 1904 was 181.

Houses and Rateable Value.—As showing the small rateable value of a large portion of the houses in Crewe, the following statement is interesting. It refers to the houses on the Rate-books on September 30th, 1904.

Houses rated under	...	...	£5	per annum	...	172
,,	,, at	£5	and under	£10	,,	,,	...	7,019
,,	,,	£10	,,	£20	,,	,,	...	2,372
,,	,,	£20	,,	£30	,,	,,	...	260
,,	,,	£30	,,	£40	,,	,,	...	93
,,	,,	£40	,,	£50	,,	,,	...	42
,,	,,	£50	,,	£60	,,	,,	...	17
,,	,,	£60	,,	£70	,,	,,	...	16
,,	,,	£70	,,	£80	,,	,,	...	5
,,	,,	£80	,,	£90	,,	,,	..	8
,,	,,	£90	,,	£100	,,	,,	...	6
,,	,,	£100	,,	£200	,,	,,	...	25
,,	,, above £200				,,	,,	...	6
			Total	...	...	...	10,041

From the above it will be seen that over 71 per cent. of the houses in Crewe are rated at under £10 per annum, and that over 95 per cent. are rated at under £20 per annum.

Marriages.—During 1904 there were solemnized 242 marriages corresponding to a marriage-rate of 10.50, the marriage-rate indicating the number of persons married per 1,000 of the population. The number of marriages and marriage-rates during the seven years 1897-1903, were as follows:—

Year.	No. of Marriages.	Marriage-rate.
1897	244	12.64
1898	272	13.76
1899	315	15.56
1900	304	14.68
1901	250	11.80
1902	310	14.32
1903	297	13.05

Crewe M. B.

Births and Deaths.—In 1904 the number of births registered was 1,425, of which 43 (3 per cent.) were illegitimate. The birth-rate is 1 lower than the Crewe birth-rate in 1903, and 2.2 lower than the Crewe birth-rate averaged in 1894-1903. In 1904, the number of deaths registered (including 19 deaths of persons belonging to the Borough which took place in Nantwich Workhouse, &c., and excluding 5 deaths of persons not belonging to the Borough) was 673. The death-rate is 0.3 above the exceptionally low death-rate recorded in Crewe in 1903, but 1.3 below the average death-rate in Crewe in 1894-1903.

The monthly death-rate in Crewe was lowest in February and June (11.0), and highest in December (22.1).

Deaths of Illegitmate Infants.—Eight of the deaths recorded were of illegitimate children, 7 being infants under a year old. Particulars are as follows :—

Age.	Sex.		Cause of Death.
4 years	M.	...	Diphtheria : Exhaustion.
1 month	M.	...	Convulsions.
2 months	F.	...	Congestion of Lungs : Exhaustion.
1 hour	F.	..	Premature Birth.
17 days	M.	...	Atelectasis : Convulsions.
7 months	M.	...	Tubercular Peritonitis.
8 months	M.	...	Gastro-Enteritis : Exhaustion.
7 months	M.	...	Diarrhœa.

Comparing death-rates per 1,000 births of each class among legitimate and illegitimate children.

	1896	1897	1898	1899	1900	1901	1902	1903	1904
Infantile death-rate of legitimate children ...	139	144	166	162	138	180	130	147	159
Infantile death-rate of illegitimate children ...	120	172	255	228	125	200	156	71	162

From this it would seem that illegitimate children in Crewe have as good a change of surviving the first year of life as the legitimate.

Still-births—During 1904 the bodies of 75 still-born infants were brought to the Cemetery for burial. The still-births were therefore equal to 5.2 per cent. of the births registered. The number thus brought for burial in the 14 years, 1890-1903, averaged 4.4 per cent. of the births registered.

Infant Mortality.—Of the 673 deaths 228 were of infants under a year old. This number is equal to 160 per 1,000 births. During the ten years, 1894-1903, the proportion of deaths of infants to each 1,000 born was 151 in Crewe. Some particulars of this mortality is given month by month in the following statement:—

	Months.												
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	Totals.
I.—Immaturity.													77
a. Premature Birth ...	23	1	...	1	...	...	1	...	...	...	...	...	26
b. Congenital Malformations	2	...	1	...	...	...	...	...	...	...	...	...	3
c. Atelectasis	2	...	...	...	...	...	...	...	...	...	...	...	2
d. Atrophy, Debility, Maramus	19	9	5	2	3	...	...	2	2	...	...	4	46
II.—Disorders of Digestion.													53
a. Diarrhœa	1	4	2	6	...	1	3	4	2	1	2	4	30
b. Enteritis	...	...	1	2	1	1	1	...	2	...	...	1	9
c. Others	2	1	1	2	2	2	1	1	...	...	2	...	14
III.—Diseases of Respiratory System	1	1	3	3	4	3	2	1	5	6	4	4	37
IV.—Tubercular Diseases.													22
a. Tabes Mesenterica	1	3	2	2	3	...	1	1	...	...	...	...	13
b. Tubercular Meningitis, Hydrocephalus	..	...	...	1	..	...	...	...	1	2	...	...	4
c. Other forms of Tuberculosis ...	...	...	...	...	1	...	1	1	...	2	...	...	5
V.—Diseases of Nervous System													17
a. Convulsions ...	2	3	2	1	...	..	2	...	...	...	...	3	13
b. Others	1	1	...	1	...	...	...	...	1	...	...	...	4
VI.—Infectious Diseases.	...	4	1	...	...	1	1	...	2	1	3	...	13
VII.—All other Causes.	2	...	2	2	...	1	...	...	...	...	2	...	9
Totals	56	27	20	23	14	9	13	10	15	12	13	16	228

This shows how the conditions grouped under the heading of "Immaturity," account for 33 per cent. of the total. Next in importance stand disorders of digestion of which more than half are diarrhœa, forming 25 per cent. of the total. Many of the deaths returned as due to convulsions, and grouped under nervous diseases, ought properly to belong to this group, the cause lying very frequently in indi-

gestion, the result of unsuitable diet. Diseases of the Respiratory System, such as bronchitis, pneumonia, etc., caused 15 per cent. of the infantile mortality, and then in diminishing importance follow tubercular, nervous, and infectious diseases.

The principal causes of a high infant mortality are apparently, so far as Crewe is concerned:—

1. Ignorance on the part of mothers as to proper methods of infant feeding and management.
2. Insanitary conditions of the home and its environment, *e.g.*, dirty houses, unpaved yards, proximity of privy middens, etc.

Employment of married women in factories with its resulting early weaning and hand-feeding is not an element in the production of a high infant mortality of any importance in Crewe. As will be seen below from figures taken from the Census Report, the proportion of married women engaged in occupations is much less than in any of the other municipal boroughs in the County.

	Females over 10 in occupation.		Proportion per cent. of married or widowed in occupation.
	Total.	Married or widowed.	
Crewe ...	2994	468	15·6
Dukinfield	3421	933	27·2
Congleton	2196	581	26·8
Stalybridge	6087	1777	29·1
Hyde ..	7005	2150	30·6
Macclesfield	8398	2629	31·3

The preventive measures adopted in Crewe are all directed towards greater cleanliness of the houses, and improvement in their sanitary surroundings. The majority of back yards are, however, only partly paved, the remaining portion presenting in most cases a bare earthen surface which absorbs and retains the organic refuse, very frequently deposited on it.

One of the reasons given for not entirely paving the yard is that the people are then deprived of a garden, but it is the exception to see anything growing in those yards.

Their appearance is, as a rule, anything but pleasing, and in wet weather the unpaved space generally becomes a perfect quagmire. It also has the great objection that when filth is deposited on it, it is difficult to have it removed.

The Registrar is supplied with a printed card on "The feeding and care of infants," which he gives to anyone registering a birth. On the approach of summer also, similar cards are distributed in the poorer localities, containing simple instructions as to feeding, and the precautions to be taken to prevent the occurrence of epidemic diarrhœa. It is to be feared that in very many cases these cards are never looked at.

The only educational measures which promise to be of benefit are frequent visits of the Sanitary Inspectors, and (most important of all) teaching school-girls the elements of hygiene and the proper management and feeding of children.

Zymotic Diseases.—The number of cases of zymotic diseases which came to the knowledge of the Medical Officer of Health during the year 1904, was 459, viz., 49 diphtheria, 4 membranous croup, 351 scarlet fever, 2 enteric fever, 1 puerperal fever, and 52 erysipelas. The number of deaths from the 7 principal zymotic diseases was 74, viz., 13 measles, 12 whooping-cough, 3 diphtheria, 11 scarlet fever, 1 enteric fever, and 34 diarrhœa. There were also 7 deaths from epidemic influenza, 3 from puerperal fever, and 5 from erysipelas. The death-rate from the principal zymotic diseases in Crewe was equal to 1.6 per 1,000 living in 1904. This is not very high for a town, but 0.4 above the corresponding mortality for Crewe in 1903.

The cases of infectious diseases notified month by month in 1904 were as follows:—

	Small-pox.	Diphtheria and Membranous Croup.	Scarlet Fever.	Enteric Fever.	Ery-sipelas.	Puer-peral Fever.	Totals
January	...	8	16	1	...	...	25
February	...	5	14	...	2	...	21
March	...	5	24	...	5	1	35
April	...	5	30	...	3	...	38
May	...	5	42	...	5	...	52
June.....	...	2	23	...	2	...	27
July	...	3	19	...	5	...	26
August	...	6	42	1	6	...	55
September....	...	4	37	...	4	...	45
October	...	4	46	...	11	...	61
November ...	...	2	19	...	4	...	25
December	...	4	39	...	5	...	46
Totals ...	...	53	351	2	52	1	459

Vaccination. — The following return is submitted, through the courtesy of the Registrar of births and deaths, respecting the vaccination of children whose births were registered in the Borough in the 8 years 1897-1904:—

Year.	1897	1898	1899	1900	1901	1902	1903	1904
Births registered ...	1278	1365	1400	1420	1311	1412	1454	1436
Successfully vaccinated	921	913	945	990	900	1016	1060	1050
Certificates of insusceptibility	4	1	3	5	6	3	2	5
Certificates of exemption (Conscience Clause)	...	35	66	40	33	22	33	21
Had small-pox	...	...	...	..	...	...	...	...
Died unvaccinated ...	125	159	155	133	143	128	140	133
Postponed by medical certificate	49	75	61	43	24	33	43	35
Removal to other districts	38	52	44	59	49	51	56	50
In abeyance	141	130	126	150	156	159	120	142
Percentage successfully vaccinated	72	66	67	69	68	71	72	73
Percentage successfully vaccinated excluding those who died unvaccinated ...	79	75	75	76	77	79	75	80

Disinfection. – During 1904 there were in all 391 houses disinfected, viz.:—

After notification of infectious diseases, 352 houses.
,, deaths from measles 10 ,,
,, ,, phthisis 17 ,,
,, ,, whooping-cough 7 ,,
,, ,, influenza 3 ,,
,, ,, cancer 1 house
,, ,, diarrhœa 1 ,,

The bedding and clothing from these houses, as well as 69 sets of bedding from the Cottage Hospital, were removed and passed through the Washington Lyons Disinfector.

The following quantities of disinfectants were used during the year:—

8 tons of Carbolic Powder (15 per cent.) used chiefly for nightsoil purposes.

½-ton of Izal Powder, used chiefly for distribution to householders.

20 gallons of Izal Fluid, used in houses where cases of infectious disease occurred.
50 lbs. of Formalin Tablets for room disinfection.
3 dozen sulphur candles.

Bacteriological Examinations.—Table 11.—The following Table shews the number of examinations made during the year by arrangement with Prof. Delépine, of the Victoria University, of Manchester:—

Nature of Specimen.	Negative.	Positive.	Totals.
Typhoid Fever, Blood Serum ...	5	0	5
Diphtheria, Throat Swabs	16	7	23
Phthisis, Sputa	21	8	29
Totals	42	15	57

Small-pox "contacts."—In spite of the continued presence of small-pox in many contiguous districts, Crewe enjoyed complete immunity from the disease in 1904. However, in March, four men arrived in Crewe who three days before had been in contact with a small-pox case in Manchester. They were kept under observation, but did not develop the disease owing, probably, to the fact that they had been recently re-vaccinated.

Measles.—After a period of immunity, became prevalent in the autumn of 1904. The first notification of the disease was received from the Head Mistress of Moor Green School towards the end of August. Infection spread rapidly through the mingling of susceptible school children, and by the end of the year had invaded 14 schools. In each school the department first and most seriously affected was that of the infants. Very young children contributed by far the greatest number of cases.

The risk of such a disease such as measles spreading among very young children at school raises the question of the advisability of children under 5 years of age attending day schools. Medical opinion at the present time is distinctly opposed to this, and a resolution passed at the recent Conference of the Royal Sanitary Institute, on School Hygiene, relates to this question. It is to the following

effect:—"That having regard to the greater risk of susceptibility to infectious disease amongst young children, no child should be permitted to begin formal instruction in school classes under the age of 6 years."

The number of scholars on the registers of public elementary schools in the Borough at the middle of 1904 was 9,342. Of these 1,270 or 13.6 per cent. were under five years old. It is questionable whether the educational benefits which such young children can derive outweigh the risks they run of contracting infectious diseases such as Measles and Whooping Cough. *All the deaths from both these diseases during 1904 occurred among children of five and under.*

The majority of parents are only too glad to have their children taken care of for a few hours daily, but when the school accommodation is already somewhat limited exclusion of children under five is justified.

There were 1,549 certificates granted for the exclusion of children from school on account of Measles as compared with 61 in 1903.

The average number of deaths from measles in Crewe for the 30 years, 1874-1903, was 11. The number of deaths in 1904 was 13.

Whooping-cough.—The number of certificates granted for the exclusion of children from school on account of whooping-cough was 189 in 1904, as compared with 158 in 1903.

The number of deaths from whooping-cough was 12 in 1904, and 17 in 1903. All those who died from whooping-cough in 1904 were children under 5 years of age. The average annual number of deaths since 1874 was 11.

Diphtheria (including under this term Membranous Croup) was far less prevalent in 1904 than in 1903. During 1904 there were 53 cases, of which 3 proved fatal, 13 of the cases were removed to Hospital. The mortality (only 5.6 per cent. of the cases) is low. The number of cases and deaths in the seven years, 1897-1903, is as follows:—

Year	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Cases	66	40	46	36	112	136	150
Deaths	11	3	14	4	16	28	18
Fatality per cent.	16.6	7.5	30.4	11.1	14.2	20.5	12.0

Almost one-half of the cases were from South Ward, the distribution being 25 cases from South Ward, 11 in North Ward, 12 in West Ward, and 5 in Central Ward.

The average annual number of deaths since 1874 was 7.

The bacteriological examination of swabs from the throats of suspected cases has proved of great service. By

this means it was proved that 16 cases of "sore throat" were not caused by the diphtheria bacillus, and consequently the usual measures of notification, hospital isolation, etc., were spared. Negative results, however, in such cases are of much less service than positive, as the failure to find the organisms in any particular case may result from a variety of causes, even when it is a case of true diphtheria. The notification of cases on purely clinical grounds, even when the bacilli have not been found, is, therefore, fully justified and highly advisable. From a clinical point of view, the most striking feature of the cases notified is the absence of, or very slight, infectivity as shewn by the rarity of secondary cases in the same house, even when there are a number of susceptible children. The houses invaded numbered 51, only 2 less than the actual number of cases. Not only was there this absence of infectivity in the families affected, but as will be seen from Table 10, the disease shewed no tendency to assume epidemic form at any time during the year.

Scarlet Fever.—During 1904 there were 351 cases, 11 of which proved fatal, thus the mortality was 3.1 per cent. The number of cases removed to Hospital was 285, that is 81 per cent. of the cases notified.

The number of cases and deaths in the 7 years, 1897-1903, was as follows:—

Year	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Cases	201	57	50	211	160	96	212
Deaths	7	3	1	8	6	3	9
Fatality per cent.	3.4	5.2	2.0	3.7	3.7	3.1	4.2

The number of cases notified in 1904 was larger than in any year since 1896, when the Infectious Diseases (Notification) Act came into force in the Borough. The percentage of cases treated is Hospital was higher in 1904 than in any year on record.

The percentage of deaths among cases treated in Hospital was 2.4 per cent., and the percentage of deaths among cases treated at home was 6 per cent.

The average annual number of deaths from scarlet fever since 1874 was 12.

The cases were well distributed throughout the year in 1904, the only tendency to concentration being in the South Ward during the last quarter. Generally speaking the disease was of a very mild type, and this led to many cases being entirely overlooked until others had become infected by them. An outbreak of German measles (a mild non-fatal disease, with a rash closely resembling that of scarlet fever) during the summer months added greatly to the difficulties of diagnosis.

Enteric Fever.—There were only 2 cases, of which 1 proved fatal. The number of cases and deaths in the 7 years, 1897-1903, is as follows:—

Year	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Cases	28	32	30	22	15	17	11
Deaths	3	7	4	10	3	2	4
Fatality per cent.	10.7	21.8	13.3	45 4	20.0	11·7	36.4

The average annual number of deaths from enteric fever since 1874 was 6. The number of cases notified in 1904 was the lowest on record in Crewe.

Diarrhœa was the cause of 74 deaths in 1904, being equal to a death-rate of 0.7 per 1,000 living. Of those who died 30 were infants under 1 year old. The great preponderance of deaths from diarrhœa among artificially-reared children, justifies the view that the question of feeding is intimately associated with this occurrence. The following figures show the result of inquiries made during the last three years with reference to this matter:—

Of 12	Infants who died from diarrhoea in			1902,	2	were breast fed	
„ 11	„	„	„	1903,	4	„	„ „
„ 30	„	„	„	1904,	2	„	„ „
53					8		

The bottles used all had the long rubber tube, and in many cases, even with the youngest infants, the milk was supplemented by some other food.

Even where clean fresh milk is bought, the dirty condition of many of the houses must soon lead to its contamination and decomposition.

Condensed milks seem to be very much used, especially among the poorer people. These, no doubt, are excellent and useful preparations, but not for infants. They are deficient in fat and contain an excess of cane sugar, and their use for feeding infants is liable to produce rickets, and should therefore be discouraged. In some cases which have come to knowledge, the method of preparing the condensed milk for use was such as exposed the children to the further danger of gradual starvation.

The average annual number of deaths from diarrhœa since 1874 was 26.

Erysipelas.—There were 52 cases notified of which 5 proved fatal, that is 9.6 per cent. The cases and deaths during the 7 years, 1897-1903, were as follows:—

Year ...	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Cases ...	115	49	62	44	40	40	40
Deaths ...	9	3	2	0	3	4	7
Fatality per cent.	7	6	3	0	7	10	17

Puerperal Fever.—Though 1 case of this disease was notified, 3 deaths took place. The cases and deaths during the 7 years, 1897-1903, were as follows:—

Year ...	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Cases ...	7	4	10	7	1	4	6
Deaths ...	3	2	7	5	0	2	2
Fatality per cent.	42	50	70	71	0	50	33

The reason why this disease is notified irregularly lies in the confusion which exists as to what conditions are included in the term "puerperal fever." The name is entirely devoid of any scientific meaning, and its use has been condemned by the Royal College of Physicians. All cases of puerperal sepsis are usually classified under this heading, and the College recommends as substitute such terms as puerperal sepicaemia, puerperal pyaemia, or puerperal septic intoxication.

The practice of midwives is now subject to control under the Midwives Act, 1902, and the rules of the Central Midwives Board, providing for the notification to the local supervising authority of cases of puerperal fever, or of any rise of temperature above 100.4 degrees Fahrenheit, will probably bring to light cases of puerperal sepsis which in the past have escaped notification.

Phthisis and other forms of Tuberculosis.—During 1904 there were 29 deaths registered as due to phthisis, and 45 deaths registered as due to other forms of tuberculosis. Thus the phthisis death-rate was equal to 0.6 per 1,000 living, and the death-rate from all forms of tubercular disease was equal to 1.5 per 1,000 living.

The number of deaths from phthisis is 7 less than in the preceding year, while the deaths from the other forms of tubercular disease show an increase of 10.

A bacteriological examination of the sputum was made in 33 cases, and in 13 the tubercle bacillus was found. After every death from phthisis the Health Department offers to carry out the necessary disinfection of premises, clothing, and bedding, and in 17 instances this was done.

The average annual number of deaths from phthisis since 1874 has been 31.

The number of deaths which have occurred from tubercular diseases other than phthisis, since 1892, is as follows:—

	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Tubercular Meningitis ...	...	7	9	6	4	7	13	6	9	23	7	10	12
Tubercular Peritonitis ...	1	5	...	...	3	2	5	...	...	...	...	6	8
Tabes Mesenterica ...	23	20	18	19	4	12	18	15	12	18	13	12	12
Other forms of Tuberculosis	4	...	5	6	2	2	5	6	18	7	14	7	13
	28	32	32	31	13	23	41	27	39	48	34	35	45

Method of dealing with Infectious Disease.—Each case when reported is at once visited, and enquiries are made as to the possible sources of infection, the means of isolation adopted and available, the practicability of adequate nursing and bathing arrangements, etc. Where good arrangements cannot be made at home, removal to Hospital is advised. Disinfectants are supplied to the house. If the case is not removed a form is left for signature to be sent in when the patient has recovered, and disinfection may be carried out. Notice is also given to the parents requiring them to keep their other children away from school, and communications are sent to Head Teachers, while the librarian at the Free Library receives a weekly list of infectious houses.

On the admission of each child to Hospital, its name and other particulars are entered in a case book by the Medical Officer, who also, in the case of scarlet fever, sends a notice to the parents, saying that the Corporation will not be liable for future infection which may occur at home after the child's discharge, but that all due care will be exercised whilst the child is in Hospital. After the ambulance attendant has taken a case to the Hospital, he again visits the house, disinfects the infected room, and removes all the infected bedding, etc., to the steam disinfector. When disinfection is completed he again conveys the bedding, etc., to the house.

The Isolation Hospital, it may be remembered, was opened on October 16th, 1897. The site on which it is built is five acres in extent, situated to the north of Middlewich Street, in an elevated position with the open country around. The Hospital, including £750 for site, cost approximately £9,500. All suitable patients resident within the Borough are removed and maintained, and their belongings disinfected at the cost of the Corporation. Charges are made for patients living outside the Borough. The premises were originally lighted by gas, but since September, 1901, electric light has been supplied by the Corporation.

There are 16 beds in the scarlet fever pavilion, 10 beds in the enteric fever pavilion, and 2 beds in the observation block.

Crewe M. B.

Owing to the rapid increase in the population, and the increasing number of patients treated, it was found necessary to enlarge the Hospital by the addition of a two ward pavilion for diphtheria, together with extra housing accommodation for the nursing staff. The additions were commenced at the beginning of 1903, and on March 30th, 1904, the opening ceremony was performed by the Mayoress of Crewe. The plans for the extension were prepared by Mr. G. Bolshaw, of Southport, who was the architect of the Hospital opened in 1897. The new pavilion and additions to the housing accommodation for the staff was £3,066.

The staff of the Hospital consists of a Matron, 8 nurses, (2 charge, 4 assistant, and 2 probationer nurses), and 6 maids (cook, housemaid, scullery maid, 2 ward maids, and laundry maid). There is a non-resident ambulance attendant, who also acts as disinfector for the Health Department, and a gardener. Occasional extra assistance has to be obtained in the laundry and grounds.

Several important changes in the staff took place during the year. In March Miss Norris, who was appointed Matron when the Hospital was opened in 1897, sent in her resignation. The great success of the Hospital, and the public confidence which it has gained, were due almost entirely to the excellent management and the unceasing care which Miss Norris bestowed upon the Institution. Her successor, Miss Morgan, resigned her appointment in October, having received an appointment in a larger institution elsewhere. The present Matron, Miss Currie, entered upon her duties in October, 1904.

The amount of work done during the year shews a very great increase over any preceding year. This was almost entirely due to the increased number of admissions of cases of Scarlet Fever.

The following statement shews the number of cases dealt with during 1904 :—

	Scarlet Fever.	Diphtheria & Mem. Croup.
Remaining in Hospital at end of 1903	34	...
Admitted during 1904	285	13
Total	319	13
Discharged cured during 1904 ...	284	13
Died during 1904	7	...
Remaining in Hospital at end of 1904	28	..

In addition to the disinfection of bedding and clothing taken from infected houses or from the Hospital Wards, a considerable amount of work has been done for the Cottage Hospital in disinfecting bedding which has become infected with septic discharges.

The following shews the annual number of patients admitted to the Hospital since its opening, and the percentage of cases of Scarlet Fever removed to Hospital :—

	Total Number of Cases admitted.	Proportion of Scarlet Fever Cases removed.
1897 (from October) ...	26	—
1898	68	64%
1899	73	76%
1900	158	65%
1901	129	69%
1902	102	74·5%
1903	169	76%
1904	298	81%

The cost of the maintenance of the Hospital for the year ending December 31st, 1904, is stated as hereunder :—

	£	s.	d.	£	s.	d.
Salaries of Matron, Nurses, etc. ...				297	15	3
Uniform				23	3	10
Porter's Wages (proportion) ...				50	13	4
Coal, Fuel, etc.				146	2	9
Gas				9	9	8
Electric Lighting				44	9	0
Repairs, etc., to Electric Fittings...				16	4	3
Water				16	9	6
Printing, Stationery, Advertising, etc.				11	11	11
Groceries	164	18	9			
Butcher's Meat	144	16	5			
Fish	60	16	9			
Vegetables	28	13	9			
Milk	113	16	9			
Bread...	48	3	11			
				561	6	4
Medical Sundries				38	17	5
Drapery, Cookery, Hardware, etc.				65	1	10
Rates and Taxes				22	12	9
Cultivation of Grounds				86	10	9
Insurance				5	19	6
Telephonic Communication ...				7	16	0
Postages				0	19	0
Horse Hire				93	0	0
Repairs to Van, Disinfector, etc....				8	1	6
Corn for Fowls				4	2	0
Maintenance and Painting of Buildings				52	8	7
Extra Nurses				3	3	0
Cleaning Materials				24	16	2
Extra Assistance in Laundry ...				22	17	0
Sundries				12	2	2
Laying Water Trench				3	9	0
Interest on cost of Electric Main...				13	11	9
Rent of Small Pox Hospital ...				20	0	0
				£1,662	14	3

Crewe M. B.

The income of the Hospital for the same year is stated as hereunder :—

Maintenance of Patients	69	6	0			
Removal of Patients	2	2	6			
Rent of Land	1	2	6			
				72	11	0
From Cheshire County Council under Isolation Hospital Act				230	10	7
				£303	1	7

The following is a statement showing the number of patients in Hospital, average residence, and cost of treatment since 1898.

Year.	Patients.			Total expenditure.	Average cost per patient.	Daily cost per head for provisions	Provisions
	Total treated.	Average daily number.	Average residence in days.				
				£ s. d.	£ s. d.	s. d.	£ s. d.
1898	68	9·1	48·0	1,020 2 0	15 0 0	2 4	378 19 6
1899	73	9·6	48·0	1,083 7 1	14 16 9	1 11½	347 4 9
1900	158	20·3	47·0	1,161 11 8	7 7 0	1 1½	417 19 0
1901	129	17·0	48·0	1,367 0 10	10 12 0	1 5½	452 18 0
1902	102	11·7	42·0	1,173 5 9	11 10 0	1 5½	314 10 7
1903	169	22·4	48·5	1,404 6 7	8 6 2	0 11½	398 19 7
1904	298	34·2	42·0	1,642 14 3	5 10 3	0 10¾	561 2 4

N.B —The above calculations of cost do not include repayment of principal nor payment of interest on capital.

The average length of stay in Hospital, in 1904, was as follows :—

Scarlet Fever Patients, excluding cases which died	43.7 days
Scarlet Fever Patients, including cases which died	43.0 ,,
Diphtheria and Membranous Croup patients ...	19.5 ,,

Small-pox Hospital.—The Small-pox Hospital is situated upon the Corporation Farm on the north side of Pym's Lane, off Minshull New Road. As it originally existed, excluding the part occupied by the caretaker and his family, there were two bedrooms available for patients, with suitable accommodation for a nurse. During 1903 further accommodation was provided by fitting up a small galvanized iron pavilion alongside the farm house. The Hospital has been unoccupied during the year, but has been kept ready for any emergency.

School Accommodation.—The school accommodation for the Borough, the number of scholars, and the proportion of the population of each ward attending school, are shewn in the table given below. There are 9,200 children on the registers, with an average attendance of about 8,000. The schools provide accommodation for 8,586 scholars.

Central Ward.

School.		Children on registers.		Per cent. of Population.
Hightown Wesleyan	Boys	334		
	Girls	299		
	Infants	257	890	
Central	Boys	333		
	Girls	324		
	Infants	246	903	
Beech Street	Boys	331		
	Girls	311		
	Infants	327	969	
St. Mary's R.C.	Mixed	265		
	Infants	105	370	
		Total	3,132	30·6

West Ward.

School.		Children on registers.		Per cent. of Population.
Wistaston Road	Infants	183	183	
West St. Council	Mixed	559		
	Infants	256	815	
Hightown L. & N. W. Railway Company's	Boys	360		
	Girls	373		
	Infants	235	968	
		Total	1,966	18·9

North Ward.

School.		Children on registers.		Per cent. of Population.
Earle St. Wesleyan...	Mixed ...	205		
	Infants ...	131	336	
New Street	Infants ...	122	122	
Maw Green	Mixed and Infants ...	120	120	
Broad Street ...	Boys ...	322		
	Girls ...	281		
	Infants ...	194	797	
	Total ...		1,375	12·3

South Ward.

School.		Children on registers.		Per cent. of Population.
Pedley Street ...	Boys ...	125		
	Girls ...	143		
	Infants ...	166	434	
Bedford Street ...	Boys ...	215		
	Girls ...	334		
	Infants ..	262	811	
Edleston Road ...	Boys ...	383		
	Girls ...	294		
	Infants ...	259	936	
Mill St. Wesleyan ...	Infants ...	164		
	Mixed ...	382	546	
	Total ...		2,727	12

At certain times of the year many of the departments become seriously overcrowded. This, however, will be met by the new schools which are being provided by the Education Committee.

All the schools have closets on the water carriage system with the exception of the Broad Street Schools, which are still pro-

vided with the objectionable privy pails. The urinals at some of the schools have absolutely no flushing arrangements whatever, and in the summer, especially when they are exposed to the sun, they become extremely offensive.

Schools and Infectious Disease.—Owing to the outbreak of Measles, the number of school certificates granted is very greatly increased. It is well to bear in mind that these figures represent not only cases of infectious disease, but also healthy children who have been excluded on account of the occurrence of infectious disease in some other member of the family.

The following schools were closed owing to the spread of infectious diseases among the scholars :—

School	Closed	Re-opened.	Disease
Broad St. Infants	Dec. 9th, 1903	Jan. 4th, 1904	Scarlet Fever
Edleston Rd. Infants	Feb. 22nd ,,	Apr. 11th ,,	Whooping Cough
Pedley St. Infants	,, ,,	Mar. 14th ,,	,, ,, and Chicken-pox
Pedley St. Girls	Mar. 1st ,,	,, ,,	German Measles
Edleston Rd. Girls	,, ,,	Apr. 11th ,,	,, ,,
Mill St. Wes., Infants	Mar. 7th ,,	,, ,,	Measles and Whooping Cough
Wistaston Rd. Infants	Mar. 28th ,,	,, ,,	Measles
Hightown Wes. Infants	May 6th ,,	May 30th ,,	German Measles
Christ Church Infants	June 27th ,,	June 30th ,, (Sum'r Holidays)	Measles
Maw Green (both depts.)	Sept. 26th ,,	Oct. 10th, 1904	,,
Beech St. Infants	,, ,,	Oct. 17th ,,	,,
Earle St. Wes. (both depts.)	Oct. 24th ,,	Nov. 21st ,,	,,
New St. Infants	,, ,,	,, ,,	,,
Broad St. (all depts.)	Oct. 31st ,,	,, ,,	,,
Hightown Wes. (all depts.)	Nov. 7th ,,	Nov. 28th ,,	,,
St. Paul's (all depts.)	,, ,,	,, ,,	,,
St. Mary's Infants	Nov. 24th ,,	Dec. 18th ,,	,,
Edleston Rd. Infants	Nov. 28th ,,	Dec. 12th ,,	Whooping Cough
St. Barnabas' Infants	Dec. 5th ,,	Dec. 22nd ,,	Measles
St. Paul's Infants	,, ,,	,, ,,	,,

From this it will be seen that all the Infant Departments were closed at some time during the year. Measles accounted for the greatest amount of sickness, and also for the largest number of deaths, although whooping-cough was little behind in this respect. Attendance at school of children under five years old adds much to their chances of falling victims to epidemic disease.

The following certificates have also been issued in respect of *notified* disease :—

Preliminary certificates	291
Final certificates	68
	359
Add on certificates for diseases not notified ...	1,994
Total number of certificates issued by M.O.H. ...	2,353

The system of notification between Head Teachers and the Medical Officer of Health continues to work very satisfactorily, and has proved of great assistance to the Health Department.

Playgrounds and open Spaces.—These owned by the Corporation are :—

The Queen's Park.—Area a little over 35 acres, situate in the South Ward, at the extreme south-west boundary of the town.

South Ward playground, area 11,501 square yards. West Ward playground, area 8,356 square yards. North Ward playground, area 16,429 square yards.

The South and North Ward playgrounds require considerable alteration before they are likely to be much used by children. The provision of swings and other simple gymnastic appliances, and a smooth firm surface adapted to children's games would greatly enhance their value and popularity.

Abatement of Nuisances.—The Sanitary Inspector reports that he has obtained the abatement of a large number of nuisances during the year. In 165 instances the nuisances were due to defective house-drainage, 124 were due to defective ashpits, privies, &c., 32 were due to cesspools, and 100 to defective water-closets, 55 were due to defective paving of yards and passages, 40 were due to defective rain-conductors, and 8 were due to the keeping of animals. There were 3 smoke-nuisances. In 49 instances house-drains were tested. The notices issued with reference to defective privies and ashpits numbered 462.

During the year 1901, bye-laws were adopted prohibiting the deposit of filth or wet refuse in dry ash-pits, and the keeping of swine within 90 feet of any dwelling-house.

Reconstruction of Privies, &c.—As indicating the steady progress that is being made in reconstruction of privies, etc., and in the provision of proper sanitary conveniences, the approximate number of baths, closets, privies, middens, &c., the following figures are given for the end of the year 1904, with corresponding figures for 1903, for comparison.

	1903.	1904.
Baths	1503	1629
Water Closets	4901	5422
Waste Water Closets	1018	1018
Pail Closets	2966	3021
Cesspool Privies	107	58
Fixed Receptacles	33	23
Uncovered Privy Middens	23	21
Covered Privy Middens	1292	1310
Uncovered Ashpits	175	151
Covered Ashpits	2269	2431
Dustbins	5820	6828

Principal Industries.—The bulk of the male population is employed at the London and North-Western Railway Company's Works. There are also Clothing and Fustian Cutting Works, which chiefly employ female labour.

Offensive Trades.—The only offensive trade carried on within the Borough is that of gut-scraping. The premises have been visited periodically during the year, and the business has been conducted without any cause for complaint.

In addition to the above there are two rag and bone stores in the Borough. One of these, which gave rise to complaint from persons residing in its vicinity, has been removed to more suitable premises.

Cowsheds.—There are 44 cowsheds within the Borough, but of these 6 are not at present in occupation. The cowsheds have been frequently inspected during the year. The majority are old buildings, and were apparently erected at a time when the sanitary requirements of cowsheds did not receive any special attention. So far as the general structure will permit, some improvements have been made in lighting, ventilation and drainage, but there is still much room for improvement. In several there is no provision for lighting or ventilation, in 5 the height is only 6 feet, and in 23 the height is between 7 and 8 feet. In fourteen the cubic space is not more than 300 cubic feet per cow, while the average for 34 cowsheds which have been remeasured is 450 cubic feet. The Local Government Board Standard for cowsheds as contained in the model bye-laws is 800 cubic feet per cow, except where these are "habitually grazed on grass land during the greater part of the year, and when not so grazed are

habitually turned out during a portion of each day." The bye-laws do not give any standard for cowsheds, the cows from which are habitually grazed or turned out. It cannot be said, however, that conditions such as exist in many cowsheds are likely to be conducive to the maintenance of a high standard of health among the cows.

A more stringent observance of the bye-laws should be insisted upon by the Health Committee. Where structural alterations are necessary there would be no hardship inflicted upon owners if after intimation, reasonable time was given for the carrying out of the work necessary.

Dairies and Milkshops.—There are 78 places in the Borough in which a retail trade in milk is carried on. Of these 56 are shops, 18 are producers' premises, and 4 are private houses. There are no dairies properly so-called in the Borough, *i.e.*, shops in which milk and other farm products such as butter, cheese, and eggs, are exclusively sold. Judging by the amount of attention which seems to be given it, the sale of milk in many instances is apparently a part of the shop's business which is not considered to require any special care. The milk is kept either in the tins in which it is received from the farm or wholesale dealer, or in earthenware dishes. The former are sometimes covered and stand either on the floor before or behind the counter, the latter are invariably without any cover and usually stand on a shelf or upon the counter. Alongside, or close to the vessel, are generally to be found vegetables, sweets, and many other articles. These vessels ought all to have some covering to prevent access of dust, flies, &c. All cans or other vessels used for the conveyance of milk in carts, either for sale from them or from shops, should be provided with covers.

Houses Let in Lodgings.—The model bye-laws relating to houses let in lodgings were adopted and came into force in 1897.

Slaughter-houses.—There are 15 slaughter-houses in the Borough, which are used by 35 butchers. One of these houses was out of occupation for part of the year. The premises, generally speaking, are kept in a satisfactory, and some in an excellent condition.

An application for a licence for premises in Wesley Street was refused.

Meat Inspection.—This is a matter in which the Butchers' Vigilance Association has been of the greatest service. By the supervision which this Association exercises over the trade, the quality of meat exposed for sale is of a high

standard. The ready co-operation of the Members of this Association with the Health Department is a matter for congratulation, as, with the present staff, and considering the number of places in which slaughtering is carried on, anything like efficient inspection is extremely difficult, if not quite impossible to attain.

Six carcases were examined in slaughter-houses upon the request of the owners. The disease in each case was tuberculosis. The whole carcase was condemned as unfit for human food in three instances, in the others only the affected portion was destroyed.

The lowest price paid for any of the carcases was £12 2s. 6d.

Inspection of Ice Cream Premises.—There are ten premises where ice cream is made. The one in Chetwode Street is the only one from which a business of any size is carried on. The occupier of these premises carries on a retail business and also supplies other five retail vendors. The other premises are only occasionally used for making ice cream.

The premises are all in good sanitary condition and on every inspection both premises and utensils have been found clean.

The Factory and Workshop Act, 1901, came in force on January 1st, 1902. By it all previous legislation on the subject is either repealed or consolidated, and it makes considerable alterations in the duties of District Councils (which include Councils of Municipal Boroughs) in regard to workshops and workplaces.

There are 62 factories and 205 workshops in the Borough. The latter include a great many places such as dressmakers' establishments where the business is a small one, and is carried on in a room of the dwelling-house set apart for the purpose. It sometimes happens that in such small workshops the business is carried on somewhat intermittently, and changes of address are frequent. This makes it difficult to keep an absolutely correct register, but so far as possible all such changes have been followed up.

The following list of workshops shows the nature of the trades carried on, and the number of the workshops used by each trade in each Ward.

Trade.	Central.	West.	North.	South.	Borough.
Bakers and Confectioners..	12	6	10	11	39
Dressmakers and Milliners	23	5	1	18	47
Tailors	10	3	1	1	15
Watchmakers & Jewellers..	4	1	...	1	6
Tinsmiths	5	...	...	1	6
Cabinet Makers & Joiners..	10	1	2	4	17
Bootmakers	8	6	6	10	30
Herb Beer Manufacturers and Bottlers	2	...	...	...	2
Saddlers	1	1	...	2	4
Cycle Repairers	2	...	...	3	5
Ice Cream Manufacturers..	3	3	...	4	10
Wheelwrights	...	...	...	1	1
Shirtmakers	1	...	...	...	1
Hosiers	1	...	1	...	2
Stonemasons	2	1	...	1	4
Picture Framers	1	1	...	3	5
Rag Stores	...	...	1	1	2
Blacksmiths	2	2	...	1	5
Laundry	...	...	...	1	1
Artificial Teeth Manufacturers	1	...	...	1	2
Scales Manufacturer ...	1	...	...	...	1
Totals	89	30	22	64	205

The condition of the workshops generally has been very satisfactory, although there were a few exceptions with regard to cleanliness. 41 notices relating to limewashing were sent out and complied with. There was no instance of overcrowding.

There is only one underground bakehouse in use. The only part of the business carried on underground is the mixing and the kneading of the dough.

By an order of the Home Secretary, dated November 14th, 1903, section 3 (sub-section 1) of the Factory and Workshop Act, 1901, is modified.

(1) as regards underground bakehouses by substituting "five hundred cubic feet of space to every person" for "two hundred and fifty cubic feet of space to every person"; and

(2) as regards bakehouses (other than such as are underground) where work is carried on at night by artificial light other than electric light by substituting in respect of the

period between 9 in the evening, and 6 in the morning "four hundred cubic feet of space to every person" for "two hundred and fifty cubic feet of space to every person."

This order came into force on the 1st day of January, 1904.

There were 322 inspections made, and in consequence of what was observed 44 written notices were served. In 2 cases only were prosecutions necessary.

The following list of Factories shows the nature of the manufacture carried on, and the number of the establishments belonging to each manufacturer in each ward.

Industry.	Central.	West.	North.	South.	Borough.
Loco. Engine Works ...	...	1	...	*	1
Electric Lighting ...	2	...	...	1	3
Clothing Factories ...	...	1	2	2	5
Cabinet Maker and Joiner	3	...	...	...	3
Cycle Works	1	...	...	...	1
Bottling & Herb Beer Manufactory	2	...	...	1	3
Brewery	1	...	...	...	1
Aerated Water Manufactory	2	...	1	...	3
Letterpress Printing ...	3	2	1	1	7
Laundry	...	...	1	...	1
Sausage Maker	2	1	1	1	5
Machine Smith	1	...	...	...	1
Wheelwright, Woodturner	2	..	1	...	3
Builder	2	1	2	2	7
Iron Founder	1	...	...	...	1
Baker	2	...	1	...	3
Brickworks	...	2	5	...	7
Fustian Cutting	1	2	.	...	3
Cattle Medicine	...	...	...	1	1
Firewood	...	1	...	1	2
Saw Mill	...	1	...	...	1
Tota	25	12	15	10	62

* These works are also partly in the South Ward.

Sale of Food and Drugs Acts.—These Acts are administered by the County Authority. During 1904 there were 104 samples purchased in Crewe, submitted for analysis, viz., 12 beer, 1 brandy, 26 butter, 1 ground ginger, 2 jam, 51 milk, 4 pepper, 4 vinegar, and 3 whiskey. Five samples of

butter, 3 of milk, and 1 sample of jam were found to be adulterated. Nine prosecutions were undertaken with following results:—

No.	Nature of Offence.	Result of Prosecution.
1	Selling Margarine as Butter ...	Fined £20, together with 26/6 costs.
2	,, ,, ,, ...	Fined 5/- including costs.
3	,, ,, ,, ...	Defendant absconded before summons could be served.
4	Delivering Margarine to purchaser, in a plain wrapper ...	Fined £20, together with 17/6 costs
5	Delivering Margarine. to purchaser, in a plain wrapper ...	Ordered to pay 3/6 costs.
6	Selling Jam containing 2·5 grains of Salicylic Acid per pound of Jam	Fined 1/-, together with 29/6 costs.
7	Selling Milk adulterated with 2 per cent. of water	Fined £3, together with 39/10 costs
8	Selling Milk adulterated with 7 per cent. of water... ...	Fined £2, together with 37/10 costs
9	Selling Milk adulterated with 3 per cent. of water and deprived of 6 per cent. of its cream	Fined £2, together with 37/10 costs

Adoptive Acts.—The Infectious Disease (Prevention) Act, 1890, came into operation in Crewe on January 1st, 1891. The Public Health Acts Amendment Act, 1890, came into operation in Crewe on February 1st, 1891.

Scavenging.—This is under the control of the Health Department, a foreman having charge of the work. The horses used in scavenging are under the manager of the sewage farm, and an annual sum is paid by the Health Department for horse hire to the Farm Department. The cost of removal of house refuse varies with the nature of the sanitary conveniences. A privy pail has to be emptied weekly at an annual cost of 5s., while the dustbin is emptied fortnightly, at a cost of 4s., thus the cost per house is 9s. a year. If a house has a water-closet and dustbin, the scavenging costs only 4s. a year. The annual cost of scavenging mixed receptacles is about the same as scavenging privy-pails.

On day duty there are ten scavengers and ten drivers, there being two men to each cart. On night duty there are nine scavengers and seven drivers.

The cost of day-work per load was 3s. 3d. in 1904, 3s. 3¾d. in 1903, and 3s. 0¼d. in 1902. The cost of night-work per load was 5s. 3d. in 1904, 5s. 1d. in 1903, and 6s. 1¼d. in 1902. The entire cost per load (day and night work) was 3s. 11d. in 1903, and 4s. 0½d. in 1902. The sum paid for this work in 1904 was £3,068 16s. 7d., in 1903 it was £3,007 9s. 9d., and in 1902 it was £2,984 9s. 3d.

Water-supply.—Water is supplied to the town from the Artesian Wells at Whitmore, by the L. and N. W. Railway Company. The quantity of water used during 1904 was 233,434,413 gallons. This quantity is equal to 13.8 gallons per head of the population per day.

The figures giving the quantity of water consumed are made up from the accounts of the L. and N. W. Railway Company, and represent the water paid for by the Corporation; they include 20½ million gallons per annum, which is the approximate annual quantity used by the Company's houses.

Sewage Disposal.—There has been no change in the method of sewage disposal in 1903, the bulk of the sewage being still treated on the Corporation Farm by broad irrigation, while about one-fifth is treated by the double contact method.

The Corporation Farm was laid down in 1872, at a capital expenditure of £47,000, and has an area of 260 acres, 20 of which being pasture-land is being used for irrigation. This whole area has a sub-soil of stiff clay. Willows and rye-grass grow upon the Farm.

The sewage flows by gravitation to the lowest portion of the Farm along two main outfall sewers; the Northern, capable of taking 14 million gallons in 24 hours, and the Southern with a like capacity as far as the Gas Works in Victoria Avenue, but beyond that point only equal to 10 million gallons in 24 hours. The sewage is pumped, untreated, and delivered by elevated and ground-level carriers at whatever point is desired. The pumping is done by a beam engine which can lift 100,000 gallons per hour.

After passing over the land the effluents flow into two streams, the North Brook and the South Brook, each of which ultimately discharges into the River Weaver.

Owing to the facts that the subsoil of the Farm is stiff clay, that the population of the town is rapidly increasing, and that this method of treating the sewage has not proved satisfactory, it was decided a few years ago to dispose of the sewage from the Northern Outfall (about one-fifth of the total

quantity) by the bacterial method. Work in connection with the preparation of the septic tank and bacterial beds, carried out in 1901 and 1902, and the septic tank and all the five pairs of bacteria beds were in use in 1903 and 1904.

Forty samples of sewage effluents from the bacteria beds have been submitted by the Borough Surveyor for analysis. On the whole the effluents have proved to be very satisfactory.

Back passages out of Repair.—The condition of a number of back passages was reported during the year, and the attention of the Works Committee directed to them. In many streets such passages form the means of access to houses most commonly used, and in addition there is often a considerable amount of heavy traffic by coal carts, etc.

Dirty and Damp Dwelling-houses.—A large number of dirty houses have been discovered in the course of house inspections, and have been cleaned on the receipt of written notice. In seven instances, however, the preliminary notice was disregarded and it was necessary to obtain sanction to issue the statutory notice. This resulted in the work being carried out, thus obviating the necessity for any further proceedings.

Complaints from householders regarding the dampness of walls led to the examination of a number of houses. In many a quantity of water under the front sitting-room floor was discovered, sometimes several inches deep. All that was required was the provision of a tile-drain to remove the sub-soil water. This ought to be done in every instance when the soil is a damp one, as its omission leads to conditions which are exceedingly injurious to health.

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

1904.	Rainfall in Inches.	Number of days in which rain fell.	Mean Temperature.			
			Maximum in Shade.	Minimum in Shade.	1 foot below ground.	4 feet below ground.
January	7.4	14	39	31	36	43
February	7.36	16	41	30	39	42
March	3.26	7	46	31	39	41
April	5.88	18	53	37	45	44
May	2.0	8	61	40	50	47
June	2.0	6	66	44	56	52
July	3.0	9	74	51	61	56
August	5.0	14	68	46	59	58
September...	2.63	9	64	43	56	56
October	1.97	5	56	39	51	54
November...	1.26	7	43	31	45	50
December	2.2	9	40	30	41	45
Total	43.96	122	...	...	...	...

As compared with 1903 the year has been much drier, the total rainfall being nearly 10 inches less, while there were 33 more days on which no rain fell. The driest months were May, June, October, November and December. The mean temperature for the months were higher from April to August and lower during November and December, when the rainfall fell very greatly below that of the previous year.

DUKINFIELD

Municipal Borough.

Medical Officer of Health—Dr. J. R. S. Park.
Population at Census on April 1st, 1901—18,929.
Estimated Population in middle of 1904—19,500.
Area in acres—1,405.
Birth-rate per 1,000 living—24.8.
Death-rate per 1,000 living—17.5.
Death-rate from seven principal Zymotic Diseases—2.0.
Deaths under one year to 1,000 births—198.

The Urban District of Dukinfield was incorporated in 1899. The Municipal Borough had a population of 18,929

at the Census of 1901, and the population of the same area was 17,385 at the Census in 1891. The increase in the population during the decennium, 1891-1901, was thus 1,544, that is 8.8 per cent. The estimate of the population made for the middle of 1904 is probably not excessive.

The Borough is divided into three Wards, the population of which at the Census in 1901 was as follows:—

West Ward	5,612
Central Ward	6,699
East Ward	6,618

In July, 1904, the following was the number of inhabited and empty houses in the Borough:—

	Number of Houses		
	Inhabited.	Empty.	Total.
Central Ward ...	1,545	71	1,616
East Ward	1,525	65	1,590
West Ward	1,260	43	1,303
Total ..	4,330	179	4,509

There are 9 fewer inhabited houses than in 1903, a total which is made up as follows:—seven fewer in the Central, three fewer in the East, and one more in the West.

This shows that the estimated population (195,000) is fairly high.

Taking the population as at the Census of 1901, to be 4.48 persons for occupied houses, the following was the population of the three Wards in 1901-1904.

	1901	1902	1903	1904
Central Ward ...	6699	6686	6953	6922
East Ward... ...	6618	6721	6845	6832
West Ward ...	5612	5559	5640	5644
Total ...	18929	18966	19438	19398

So that although the total number of houses in the Borough has increased by 33 in the current year, the population has decreased by 40, and the estimate of population of 19,500 is too great by 102.

In 1904, the number of births registered was 485, and the number of deaths registered (including 21 deaths of residents registered elsewhere) was 342. The birth-rate is 3.9 below the average in 1894-1903, and the death-rate is 1.6 below the average in the same ten years. The number of deaths in 1904 from the principal zymotic diseases was 39, viz., 1 small-pox, 18 measles, 6 scarlet fever, 4 whooping cough, 5 enteric fever, and 5 diarrhœa. The zymotic death-rate

was, therefore, 2.0 per 1,000 living, about 0.8 less than the corrected zymotic death-rate in this Borough.

Cases of Infectious Disease notified. — During 1904 the number of cases of infectious disease notified was 190, viz., 36 small-pox, 6 diphtheria, 1 membranous croup, 111 scarlet fever, 25 enteric fever, 1 puerperal fever, and 10 erysipelas. Thirty-four of the cases of small-pox were removed to hospital. All the other cases were treated at home.

The Infectious Disease (Notification) Act was adopted in November, 1902. The notification of infectious disease is now compulsory.

The number of infectious diseases notified in 1904 was exceptionally large. The number notified in 1903 was 89, in 1902 it was 164, in 1901 it was 95, in 1900 it was 142, in 1899 it was 161, in 1898 it was 139, in 1897 it was 142, and in 1896 it was 176.

The numbers of notifications received, month by month, as regards the various infectious diseases, were as follows:—

1904.	Typhoid fever.	Scarlet fever.	Small-pox.	Diphtheria	Erysipelas	Puerperal fever.	Croup.	Total.
January	0	1	0	0	1	0	0	2
February ...	0	15	8	1	1	0	0	25
March	1	3	8	0	0	0	0	12
April	2	4	8	0	0	0	0	14
May	2	11	4	1	1	0	0	19
June	0	5	0	1	0	0	0	6
July	1	3	1	0	1	0	0	6
August	1	13	7	0	1	0	0	22
September ...	4	11	0	0	1	1	0	17
October	8	14	0	0	2	0	0	24
November ..	4	12	0	3	1	0	0	20
December ...	2	19	0	0	1	0	1	23
Total ...	25	111	36	6	10	1	1	190

Dukinfield M. B.

Small-pox.—The following special Report on the epidemic of small-pox was presented to the Dukinfield Sanitary Committee in September, 1904:—

Town Hall,
Dukinfield, 27th September, 1904.

To the Chairman and Gentlemen of the
Sanitary Committee.

Gentlemen,

At the request of the Local Government Board I have pleasure in submitting to your notice a Special Report on the small-pox epidemic, which has, more or less, prevailed in Dukinfield since December 26th, 1902. Previous to that date there had not been a case of small-pox in Dukinfield for many years, although the neighbouring towns of Ashton, Stalybridge, and Hyde, had visitations of the disease from time to time. We had begun to congratulate ourselves (owing to the fact that we have no common lodging houses, that we were also out of the direct route of tramps, and also that cases of contact were carefully watched, isolated, and vaccinated) it was within the bounds of possibility that we were going to escape altogether. At that time too, in order to encourage vaccination in the town, the Corporation agreed to pay each medical man for all re-vaccinations performed by him.

The first case was a man who was employed in Manchester, and who travelled there every day. We were unable to trace the source of infection. The patient was removed to Hyde Hospital, the rest of the family were vaccinated and placed in quarantine for fourteen days, the house stoved and disinfected, and the bedding, &c., destroyed.

In 1903 there were 29 cases notified during the year as follows:—

Month.	No. of Cases.
February	1
March	3
April	1
May	0
June	13
July	8
August	3
	29

No cases were notified during 1903 after the 13th of August.

To quote from my Report on small-pox (1903):—"Twenty-five of these cases were removed to hospital, the others being so mild that it was only by tracing the source of infection we were enabled to discover them, no medical

man having attended them. The earlier cases were quite separate and from distinct sources of infection, and I feel convinced that if we could have received earlier information from some of the milder cases above-mentioned the number would have been considerably lessened. The Health Committee took up the question of promptly cutting short the epidemic, and were fairly successful. All cases of re-vaccination were paid for by the local authority. Each notified case was sent to the Fever Hospital at Hyde. Earlier on in the epidemic the people in the infected houses were put in quarantine for 14 days, and were fed by the Corporation; after this period the house being stoved. But later on a plan, which is quite as satisfactory in its results, and less expensive, was adopted, viz.:—

(1) The infected individual is sent to the Hospital.

(2) Each member of the infected house is vaccinated.

(3) All members of the house are taken in a special conveyance to Hyde, where while having a disinfected bath their clothes are disinfected by means of a steam disinfector.

(4) During their absence the house is thoroughly stoved and the bedding, &c., destroyed.

(5) They are then allowed to go to their several employments.

From enquiry from our Borough Accountant I find that the total cost of the small-pox epidemic of 1903 was £285 12s. 9d., or £9 17s. per case.

There was not a single case reported in anyone who had been re-vaccinated. There were only two confluent cases, and neither case had been vaccinated at all. There was one death in an unvaccinated child, five months old.

So much for the epidemic of 1903.

In 1904, up to date, we have had 34 cases of small-pox. The first case was notified on January 26th, but should have been notified sooner by the medical attendant. Although all the above precautions were taken the vaccination was done too late to prevent the father of the first case having a mild attack of small-pox, which was reported on February 5th.

The first case was a carrier of goods to and from Manchester.

We then had an unfortunate run of six cases in one family. There was no medical attendant, and the attack was so mild that the employer of the mill where one worked first notified the case to me. I then discovered five other cases in the house. These were removed to Hospital.

From these six cases five other cases were infected; the sister of one patient, and 4 cases in another house. Here again the notification was too late to allow of prevention by means of vaccination, the first case being notified on the 7th of March, and the other three on the 16th. In no case where the notification has been prompt and the re-vaccination of others early enough, has there been a second case of small-pox in the house. This is clearly shown, as small-pox takes 14 to 16 days to develop, and after re-vaccination the small-pox, if it has appeared at all, has done so well within that period, proving that previous to the vaccination small-pox was already contracted.

On April 3rd another case was reported, and two others were traced to this one.

Two other cases in one house occurred in April owing to not being reported early enough.

In this month, too, we had four cases in one small street of six or seven houses. Two again in one house.

Since then there have been some cases during July and August, but no more than one case in a house. Latterly the cases have been reported more promptly than heretofore, and I cannot trace that one case has infected another. There has not been a single case of small-pox reported since August 22nd.

In 1904 the cases were reported as follows:—

Month	No. of Cases.
January	1
February	8
March	5
April	7
May	5
July	2
August	6
	34

The same precautions are now taken as in 1903, and the Hyde Corporation have arranged to take all our small-pox cases.

On May 10th, owing to the fact that there seemed some ignorance on the part of the public as to the symptoms of small-pox, the accompanying circular was distributed, with, as I have said above, good results.

I have not been able to get particulars as to the cost of the epidemic, but I should say it will be about £300.

I am, obediently yours,

J. R. PARK, M.O.H.

Early in May a Notice, in the following terms, was ordered to be printed and posted by the Sanitary Committee—

SMALL-POX.

This disease, which is one of the most infectious, dangerous, and loathsome of illnesses, has now appeared in the town.

Persons coming in contact by neighbouring or otherwise with cases so mild as scarcely to be noticeable, may take the disease in a severe and fatal form.

There is no doubt that unrecognised cases of small-pox which is now prevalent have been the means of spreading this disease in the town.

You are earnestly requested to assist the Health Authority in their endeavour to prevent its further spread.

This disease usually commences with sickness, headache, or back-ache, followed by an eruption or breaking-out on the face and arms.

If you have in your home a case with the above symptoms (however trifling it may seem to be) you are requested to communicate with the Medical Officer of Health, or with your own doctor.

Those who wish to receive the protection of vaccination, or of re-vaccination, should apply to the Public Vaccinator, Dr. Booth, Chapel Hill, by whom they will be vaccinated with calf lymph, free of charge. Of course, their own medical man will vaccinate them, if they wish, for a small fee.

Note—Anyone found concealing a case of small-pox, or otherwise breaking the law against the spread of this disease is liable to be prosecuted under the Public Health Act.

By order of the Sanitary Committee,

T. H. GORDON,

Town Clerk.

Town Hall,
May 10th, 1904.

The following table gives some particulars of the cases of small-pox treated in Hospital:—

Sex of Patient.	Age.	Address.	Admitted.	Discharged.	Type of Disease.	Vaccinat'n M'ks No.	Vaccinat'n M'ks Size in sq. ins.	Time of Vaccination.
M.	24 years	46, Brunswick Street	Jan. 26	Mar. 1	Modified	4	½	Infancy
M.	44 ,,	46, Brunswick Street	Feb. 6	Feb. 25	Discrete	4	1	,,
M.	40 ,,	Charles Street	,, 21	Mar. 12	,,	1	⅜	,,
F.	14 ,,	Tame Valley	,, 21	,, 12	,,	4	¾	,,
M.	23 ,,	Tame Valley	Mar. 1	,, 26	,,	2	¼	,,
F.	22 ,,	Tame Valley	Feb. 21	,, 18	,,	4	½	,,
M.	68 ,,	Tame Valley	Mar. 2	,, 16	,,	1	¼	,,
F.	27 ,,	20, Shaw Street	,, 1	,, 29	,,	2	½	,,
F.	9 ,,	68, Crescent Road	,, 3	April 2	,,	Unvaccinated		
F.	12 ,,	9, Malpas Street	,, 18	,, 11	,,	1	¼	,,
M.	32 ,,	68, Crescent Road	,, 16	,, 2	,,	3	⅜	,,
F.	36 ,,	68, Crescent Road	,, 16	,, 2	,,	2	¼	,,
F.	11 ,,	68, Crescent Road	,, 16	,, 19	,,	Unvaccinated		
M.	17 ,,	71, Astley Street	April 2	,, 29	,,	3	½	,,
F.	16 ,,	31, Zetland Street	,, 4	,, 26	,,	3	½	,,
F.	32 ,,	75, Astley Street	,, 17	May 9	,,	3	1	,,
M.	51 ,,	400, Cheetham Hill Road ...	,, 20	,, 17	,,	3	⅜	,,
F.	23 ,,	400, Cheetham Hill Road ...	,, 21	,, 3	,,	4	1½	,,
M.	25 ,,	7, School Street	,, 22	,, 14	,,	3	⅜	,,
M.	23 ,,	7, School Street	,, 22	,, 9	,,	2	¼	,,
M.	29 ,,	94, Chapel Street	May 1	,, 31	,,	3	1	,,
F.	47 ,,	106, Oxford Road	July 31	Aug. 26	,,	Vaccination doubtful		
F.	21 ,,	Zetland Street	Aug. 2	,, 18	,,	1	¼	Infancy
F.	45 ,,	66, Furness Street	,, 2	D'd ,, 11	Confluent	Unvaccinated		
M.	37 ,,	62, Wharf Street	,, 2	,, 22	Discrete	3	½	,,
F.	40 ,,	7, Railway Street	,, 5	,, 23	,,	2	½	,,
F.	25 ,,	349, Oldham Road	,, 23	Sept. 16	,,	3	1/10	,,
F.	26 ,,	1, School Street	May 1	May 31	,,	3	1	,,
F.	13 ,,	24, Railway Street	,, 4	June 25	Confluent	Unvaccinated		
M.	23 ,,	School Street	,, 19	,, 30	Discrete	3	¾	,,

None of those attacked with small-pox appear to have been re-vaccinated. There were only two patients in whom the eruption was confluent, and in neither of these had the sufferer been vaccinated at all.

Vaccination has been encouraged owing to the presence of small-pox in this town and neighbouring districts.

The following return is submitted respecting the vaccination of children whose births were registered in the Borough in 1904. The return is supplied by the Vaccination Officer, and is dated January 4th, 1904.

Successfully Vaccinated	263
Insusceptible of Vaccination ...	4
Died Unvaccinated	53
Postponed by Medical Certificate ...	18
Certificate of "Conscientious objection Vaccination" obtained ...	13
Removal from the District ...	21
Number of Births unaccounted for ...	115
Births Registered ...	487

It is interesting to note that only thirteen certificates were granted to conscientious objectors. Of those born in 1904 there were 53 died un-vaccinated, and 60.6 per cent. of the remainder were successfully vaccinated at the end of the year. Of the un-vaccinated infants many were too young to be vaccinated, and some were ill.

Measles.—There were 18 deaths from measles in 1904. This compares badly with 6 in 1903, 13 in 1902, and 7 in 1901.

Whooping Cough accounts for 4 deaths. Thus the mortality from this cause was low. Whooping-cough is more fatal than any other disease of children in Dukinfield. During the first year of infancy it is the most fatal of all epidemic diseases. Concurrent epidemics of measles and whooping-cough frequently occur.

Diphtheria and Membranous Croup.—There were 6 cases notified as diphtheria, and there was 1 case notified as membranous croup. All the cases terminated in recovery. This compares well with recent records. In 1903 there was 1 death from diphtheria, in 1902 there were 6 deaths, in 1901 4 deaths, in 1900 2 deaths, and in 1899 there were 6 deaths.

Scarlet Fever.—There were 111 cases notified, and 6 deaths recorded. This disease is for the most part epidemic, with a maximum prevalence in October, and falling to a minimum in March. In 1904 the disease was prevalent in February, and remained so for the rest of the year.

The cases were investigated, and there was no evidence that any were conveyed by means of milk. Infection was spread from case to case, largely by means of the bran-like portions of skin shed by the patients, and retained in their clothing and elsewhere. Infective material may thus be active for months. Isolation in hospital is not therefore sufficient, unless combined with thorough disinfection of wearing apparel, bedding, etc.

Enteric Fever appears to have been a little more fatal than usual. In 1904 there were 5 deaths, in 1903 there were 3 deaths, in 1902 there were 3 deaths. In 1901, there were 4 deaths, and in 1900 there were 3 deaths.

This is a typical filth disease, being conveyed by polluted water, and milk, and even oysters. Infective material is carried about by flies. Improved sanitary conditions have lessened very considerably the death-rate from this disease. The prevalence of the disease in any district is always an indication of faulty sanitary condition or bad water-supply.

Diarrhœa accounts for 5 deaths, one of these occurred in the 2nd quarter of the year, and 4 in the third. Three of those who died had not completed their 1st year of age. One was an adult, and 1 an old person upwards of 65 years of age. There were, however, 16 deaths certified as due to enteritis, gastro-enteritis, or some form of gastric-catarrh. The Medical Officer of Health is of opinion that a great deal has yet to be learned as to the cause of epidemic diarrhœa, which has so much to do with infant mortality in large towns.

Among the many causes which affect Diarrhœa are :—

(1) Density of population.
(2) Density of buildings.
(3) Want of light and ventilation.
(4) Want of cleanliness.
(5) Foul air from sewers, &c.
(6) Drinking water.
(7) Poverty.
(8) Fermented food, including milk, and presence of flies.
(9) Maternal neglect.
(10) Damp, loose porous soil.
(11) High temperature.
(12) Dry seasons with much dust.
(13) Micro-organisms in soil.
(14) Locality, certain towns being particularly liable.

Phthisis and other Tubercular Diseases.—There were 18 deaths from phthisis, and three from other forms of tubercular disease, thus the phthisis death-rate was equal to 0.82 per 1000 living.

Cancer accounts for 10 deaths in 1904, a number rather below the average.

Infant Mortality.—The number of deaths of infants under a year old was 96 in 1904; that is equal to 198 per 1000 births. In 1903 the deaths of infants under a year old were equal to 194 per 1000 births; in 1902 the deaths of infants under a year old were equal to 184 per 1000 births; in 1901 the proportion was 281 per 1000 births. During the ten years 1892—1901 the proportion of infants who died under a year old was equal to 228 per 1000 births, thus the mortality in 1902—1904, though still very high, was much less than in the years immediately preceding. At present nearly 1 out of every 5 born in Dukinfield dies before completing its first year.

The Committee are doing what they can to discover the cause of this high infant mortality. For several years past they have made inquiries in every case of death of an infant during its first year.

The Inspector, on the death of a child under one year being reported, goes to the house and makes inquiries as to (1) the sanitary condition of the house; (2) the employment of the mother; and (3) how the child was fed.

These systematic inquiries were commenced in March, 1900, and from the answers given the following tabular statement has been prepared :—

Year.	State of House.		Employment of Mother.		Feeding of Child.			
	Clean and Sanitary.	Not Clean and Sanitary.	Home.	Work.	Breast.	Bottle and Food.	Sterilized Milk.	Nothing.
1900	74	35	72	28	28	59	2	15
1901	92	43	101	29	40	69	15	11
1902	67	31	82	15	30	52	—	15
1903	89	14	75	21	22	59	—	12
1904	83	9	74	17	32	36	—	9

The 15, 11, 15, 12 and 9 fed on "nothing" refer to infants who died a few hours after birth.

The Medical Officer of Health has prepared a statement of the registered causes of death in the case of infants under a year

old, who died in Dukinfield in 1904. He gives his results as follows :—

Congenital.		Preventible.		Other Causes.	
Premature Birth ...	6	Measles	7	Gastro-Enteritis ...	10
Atrophy & Debility ...	15	Whooping Cough	3	Convulsions ...	9
Inanition	5	Diarrhœa	2	Bronchitis... ...	12
Marasmus	5	Chickenpox ...	1	Pneumonia ...	8
		Thrush	2	Meningitis ...	1
				Phthisis	2
				Teething	2
				Skin Diseases ...	2
				Not well Defined...	4
	31		15		50

Of these 96 deaths, 83 were under 9 months of age.
" " " 66 " 6 " "
" " " 45 " 3 " "
" " " 25 " 1 month "
" " " 15 " 1 week "
" " " 11 " 1 day "

In the following tabular statement the proportion of deaths of infants to each 1,000 born is given for each month in 1904, and for each of the three Wards into which the Borough is divided :—

	Central Ward.	East Ward.	West Ward.	Whole District.
January	187	181	0	125
February	375	187	333	295
March	66	277	0	136
April	143	176	166	163
May	353	90	83	200
June	153	181	250	178
July	95	272	154	155
August...	74	444	250	192
September	266	500	92	212
October	0	222	95	108
November	412	235	182	288
December	714	158	375	325

Action taken to prevent spread of Infection.—In all cases notified the Inspector of Nuisances is instructed to act as follows :—

1. To call as soon as possible at the house and get information as to (a) age of patient, (b) source of infection,

(c) sanitary condition of house and surroundings, (d) isolation if any, (e) milk supply, (f) school attended.

2. To communicate at once with the Master of the school at which any member of the household attends.

3. To communicate with the Librarian of the Free Library, so that no book may be lent out to the infected house, and if any Free Library book be in the house, to disinfect or destroy it.

4. At the request of the Medical Practitioner in attendance, to fumigate the sick room with the fumes from burning sulphur. Disinfectants, in solution and powder, are provided free of charge, by the Authority. What is more important, the sick-rooms are thoroughly cleaned, and in many cases the walls are whitewashed.

The Infectious Disease (Prevention) Act, 1890.—This Act (sections 9, 10, and 12 excepted) was adopted during the year 1897.

Isolation Hospital Provision.—The accommodation arranged for consists of two beds at the Hyde Hospital, for which a sum of £22 per annum is paid. In addition, there is a charge of £2 2s. per case for medical attendance in hospital and 1s. 3d. per day for food. When more than two beds are occupied, the additional charge is at the rate of £3 3s. per case for medical attendance in hospital.

Steam Disinfector required.—The Corporation have not yet decided what steps to take as regards providing a steam disinfector. The matter is in abeyance.

The Private Street Works Act, 1892.—This Act was adopted by the District Council in October, 1896.

Water Supply.—The Corporation of Dukinfield are joint owners with the Corporation of Ashton-under-Lyne, Stalybridge, and Mossley, of the District Waterworks. The water is gathered from the springs and streams in the Swineshaw Valley. It is pure and abundant. The consumption of water in Dukinfiield during 1004 was as follows :—

Gross supply	...	...	127,600,000 gallons
For trade purposes		...	16,045,200 ,,
Net supply	...	...	111,554,800 ,,

The gross supply is equal to about 18.17 gallons per head per day. In 1903 the gross supply was 20.22 gallons per head per day. In 1902 the gross supply was 18.5 gallons per head per day. In 1901 it was 18.44 gallons per head per day. In the 8 years, 1896 to 1903, the average gross daily supply was 18·5 gallons per head per day.

The water, though very pure, is very soft, and when, in 1901, it had to be cut off at night during parts of the year, some cases of lead poisoning occurred.

During the years 1902—1904 handbills, cautioning consumers against the waste of water, have been constantly circulating within the District, and this has certainly reduced the waste. Defective taps and services to the number of 534 were attended to during 1904. The following extensions and alterations have been completed during the year:—There have been put in 188 mains of various sizes, 12 mains have been repaired and 9 altered. Ten valves and hydrants have been repaired or renewed.

The water reservoirs are stocked with trout of a good size and quality, from Stamford Park.

Rainfall.—The local rainfall in 1904, as recorded at the raingage at the reservoirs was 27.63 inches. In 1903 the rainfall was 35.20 inches. In 1902 it was 24.54; in 1901 it was 21.98 inches; in 1900 it was 33.46 inches; in 1899 it was 33.71 inches, and in 1898 it was 29.24 inches.

Smoke Nuisances.—Periodical observations and reports are made as to the amount of smoke issuing from the chimneys of factories, etc. Owing to representations made by the Authority some improvements have been effected.

Disposal of Excreta and Refuse.—The sanitary accommodation provided for houses in this District is of four kinds—ash-pit privies, pails, automatic flush closets, and ordinary water-closets. The privies and the pails are not satisfactory, nor are the automatic flush closets, and ordinary water-closets cannot be provided generally, owing to the insufficient water supply. The Corporation are pressing owners to put in automatic flush closets, though this apparatus is not approved of by many experts. The Medical Officer of Health is of opinion that such closets require to be well supervised, but that they are certainly better than ash-pit privies or pails. There are about 800 of them in the Borough. The Inspector inspects them monthly, and reports as to their condition. The Sanitary Committee do not allow new houses to have pails or ash-pit privies.

The contents of the ash-pit privies and the excreta from the pails are taken to the Corporation sewage farm in the night time.

Scavenging is regularly and systematically carried out. During 1900 a machine was purchased for the purpose. The street sweepings are conveyed to Bradley Hurst, and all refuse from shops and ashpits is removed to the tip at the farm. The tip is an excellent one of its kind, being at a considerable distance from any property. However, providing a destructor would be the best way of getting rid of refuse.

Destructors reported on favourably.—The deputation which attended the Congress of the Royal Institute of Public Health in 1899, reported favourably on destructors, and particularly on Meldrum's Duplex Destructor, as working at Darwen Electric Supply Station.

Sewer flushing.—The sewers are regularly flushed, especially in dry weather.

The Sewage-disposal Works at Bradley Hurst were completed and opened during 1900. All the sewage is conveyed by means of a high-level and low-level sewer to the Works, and treated by precipitation (without the use of chemicals), filtration, and by being passed through the land.

Factory and Workshop Act.—The Medical Officer of Health reports that during 1903 all the workshops, bake-houses, etc., have been visited and reported upon. Most of the factories have also been seen. A register has been prepared and is kept up-to-date. Most of the premises are clean and in sanitary condition, and have been recently white-washed. The regulation as to air-space has in every case been complied with, while little or no complaint has been made as to insufficient ventilation. The bake-houses are all in order. On all premises closet accommodation is fairly well attended to. In the few instances where defects were pointed out they were immediately put right.

The Borough Surveyor reports that the provision of fire-escapes in the factories is satisfactory.

On the Register at the end of 1904 there were 16 factories, 9 bakehouses, and 26 other workshops.

Industries in Borough.—The chief industries carried on are cotton manufacture (including spinning and weaving), engineering, spindle manufacture, boiler works, electric works' soap works, dye works, and rope manufacture.

Offensive Trades.—On two premises on the outskirts of the Borough offensive trades are carried on.

Inspector's Report.—The Inspector, Mr. J. Summerfield, furnishes a list of the nuisances dealt with. There were 51 defective drains put in order, 114 dilapidated and offensive ash-pits put in order and improved, and 74 obstructed flush-closets cleaned out.

Refuse Removal.—The Inspector supervises the scavenging. The number of loads of street-sweepings removed was 1175. The number of loads of dry ash-pits refuse removed was 1828. The number of loads of refuse from midden-privies was 4585. There were also 515 barrels of excreta removed from cess-pools.

Dairies, Cowsheds, and Milkshops are periodically inspected. There are 21 in the District, and, as regards the majority, there is little or no cause for complaint. The new regulations came in force in July, 1900.

Slaughter-houses.—There are ten slaughter-houses in actual use, these are kept clean and sanitary, but some of them are deficient in air-space, and situated in objectionable places.

Back-to-back Houses.—In the Report for 1901 it was stated that a list had been made by the Inspector of all the back-to-back houses in the Borough, 176 in number, together with particulars as to number of family, number of rooms, repairs effected, closet accommodation, etc. This list (now somewhat reduced) still has attention, the Health Committee being anxious to improve the condition of the bad property in the Borough.

Canal Boats.—There is a mile of the Peak Forest Canal running through the District. The Inspector paid 39 visits of inspection to the Canal, and inspected in all 41 boats. The Canal Boats Acts, and Regulations made thereunder are enforced. All the boats inspected appear to have been in good order.

Open Spaces and Playgrounds.—In 1896 there were 12,383 square yards of land at the upper part of the market ground set apart by the District Council as a Recreation Ground. A Committee, appointed four years ago, to negotiate for the purchase of land as a Public Park, completed their work in 1897, by purchasing 10 acres of land centrally and conveniently situated. In September, 1899, the first sod was cut and the first tree planted. The work of laying out this land was completed, and the little "park" was opened in 1902.

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

HYDE

Municipal Borough.

Medical Officer of Health—Dr. J. Bennett.
Population at Census, on April 1st, 1901—32,766.
Estimated Population in middle of 1904—33,687.
Area in acres—3,081.
Birth-rate per 1000 living—24.1
Death-rate per 1000 living—17.1.
Death-rate from seven principal Zymotic Diseases—2.4.
Deaths under one year to 1000 births—198.

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The population of this Municipal Borough was 30,670 at the Census in 1891, and 32,766 at the Census in 1901. The increase in the population during the decennium, 1891-1901, was thus 2,066; that is 6.8 per cent. By adding to the Census population the natural increase since the Census, an estimate of the population is made for the middle of the year 1903.

The population of the three Townships of Hyde, Godley and Newton was, at the date of the Census, as follows :—

Hyde	23,668
Godley	1,691
Newton	7,407

During 1904 the number of births registered was 812, and the number of deaths registered (excluding 5 not belonging to the Borough, and including 22 belonging to the Borough which took place in Hospitals in Manchester, Stockport, &c.) was 575. The birth-rate is 3.7 below the average in the Borough in 1894-1903, and the death-rate is 2.4 below the average in the Borough in the same ten years.

The seven principal zymotic diseases account for 82 deaths, viz.: 2 small-pox, 15 measles, 10 whooping-cough, 13 diphtheria and membranous croup, 14 enteric fever, and 28 diarrhœa. The zymotic death-rate (2.4) was high.

The general death-rate in the Township of Hyde was 17.3; in the Township of Godley 10.0, and in the Township of Newton it was 17.1.

Infant Mortality.—Among the deaths registered, 161 were of infants under a year old, being equal to 198 per 1000 births. In 1903 the deaths of infants under a year old were equal to 103 per 1000 births. In 1902 the deaths of infants under a year old were equal to 186 per 1000 births. In the ten years, 1892-1901, there were 209 deaths of infants per 1000 births; thus the infant mortality in 1904 is higher than that in 1902 and 1903, but lower than it averaged in the preceding 10 years. In previous Reports the Medical Officer of Health has stated his belief that this abnormally high death-rate was due to inexperience and neglect of mothers, improper feeding, uncleanly and consequently unhealthy houses, and, in a less degree, the employment of mothers in factories.

The following tabular statement shews the cause of death of infants under a year old in 1904 and the two years immediately preceding :—

Cause of Death.	Year 1904	Year 1903	Year 1902
Small-pox	0	1	0
Measles	1	2	14
Diarrhœa	20	4	9
Whooping Cough	3	8	5

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Cause of Death.	Year 1904.	Year 1903.	Year 1902.
Erysipelas	0 ...	0 ...	1
Pneumonia	5 ...	8 ...	16
Bronchitis	8 ...	13 ...	6
Other Tuberculous Diseases ...	11 ...	4 ...	7
Marasmus	43 ...	28 ...	29
Convulsions	22 ...	26 ...	31
Enteritis	4 ...	2 ...	1
Premature Birth	18 ...	26 ...	22
Debility	0 ...	0 ...	5
Diphtheria	1 ...	0 ...	0
Venereal Diseases	2 ..	0 ...	0
Other Causes	23 ...	26 ...	14

In the Report for 1902 it was stated that as a result of the recommendations of the County Council, after a couference with a deputation from that body, it was decided to appoint a Female Sanitary Inspector. Accordingly Miss Woodfield was appointed, and entered on her duties in July, 1902. She was a fully-trained nurse, and held the certificate of the Sanitary Institute. Her duties were as follows :—

1. To visit from house to house in localities, as directed by the Medical Officer of Health, and to urge the importance of cleanliness.
2. To visit especially the mothers of newly-born infants, and give instructions on feeding and clothing of infants and young children. (The addresses at which newly-born infants are to be found are obtained from the Registrar every week.)
3. To take note of the sanitary condition of the house visited, the number of rooms and occupants, the existence of offensive smells and their cause (whether from dirt or neglect of tenant or landlord), and to observe the mode of living with regard to personal and domestic cleanliness.
4. To report all defects found to the Medical Officer of Health.
5. To act as Inspector under the Factory and Workshops Act, 1901, in the case of all workshops where women or girls are employed.

In the Annual Report for 1903 the Medical Officer of Health reported that Miss Woodfield resigned her appointment in November, 1903, to take up a similar one at Rochdale, and that no one had been appointed in her place. "Miss Woodfield was employed mainly in visiting the mothers of infants in the worst districts. She gave them instruction in the feeding and care of their children, impressing on them when necessary

the importance of cleanliness and ventilation. It is difficult to say whether her work has had a beneficial effect. The death-rate is certainly much lower than usual, but it must be taken into account that there has been during the year no outbreak of any of the infectious diseases which seriously affect infants. During the summer the rainfall was high and the temperature low, consequently there is an absence of the usual large number of deaths from diarrhœa. On the other hand, in work of this kind, which is largely educational, and which involves the eradication of habits and customs long established in adults, it would be premature to expect any striking results after eighteen months."

On March 14th, 1904, the question of appointing a successor to Miss Woodfield was again considered, but no successor was appointed.

Cases of Infectious Diseases notified.—During 1904 there were 360 cases of infectious diseases notified, viz. : 46 small-pox, 26 diphtheria, 8 membranous croup, 91 scarlet fever, 65 enteric fever, 3 puerperal fever, 45 erysipelas, 60 chicken-pox, and 16 phthisis. Of these cases 113 were removed to Hospital for isolation and treatment, viz : 46 small-pox and 67 scarlet fever.

Small-pox.—Forty-six cases of small-pox were notified during the year, representing three distinct outbreaks. In the first outbreak there were three cases notified on the 4th, 5th, and 6th of January. These were three men who had been in the company of a man who had been removed to Hospital, suffering from the disease on the 28th December previous. There were no other cases traced to these. The second outbreak occurred on 26th January, and consisted of three cases notified on 26th, 29th, and 30th January. These three cases were traced to an Insurance Canvasser from Stockport, who visited these houses while suffering from small-pox. The third and what proved to be a much more serious outbreak commenced on June 20th. At the request of the Local Government Board, the Medical Officer of Health returned the following Report :—

REPORT ON THE OUTBREAK OF SMALL-POX IN THE BOROUGH OF HYDE DURING THE MONTHS OF JULY, AUGUST, AND SEPTEMBER, 1904.

To the Chairman and Members of the Sanitary Committee.

Gentlemen,

The first case of small-pox in the recent epidemic was reported to me on 20th June. It was that of the keeper of the common lodging-house at 82, Manchester Road. No history of infection could be traced in this case, and as there had

been no known case of small-pox in the Borough for three months previously, it was assumed that this case must have been infected by some person of the tramp class, who had passed through the lodging-house whilst suffering from the disease.

The second case was discovered on July 12th. It was that of a man who lives at the common lodging-house in Manchester Road. On making the daily inquiries at the lodging-house, information was received that this man had been complaining of feeling unwell, but was at work. I immediately visited him, and found that he was suffering from mild discrete small-pox, the eruption having been out several days.

The third case was notified on July 12th, a man residing at Ashton Road, Newton. No source of infection could be traced in this case.

The fourth case was notified on July 13th. This was also a man who resided at the lodging-house in Manchester Road, the source of infection being presumably the same as that of case two.

The fifth case was notified on July 15th, at 45, Charles Street. This was a young woman who had been frequently visiting a house next door to the common lodging-house in Manchester Road.

The sixth case was notified on July 19th, at 30, Commercial Brow, Newton. No history of infection could be traced in this case, which was that of a woman 79 years of age. This was a hemorrhage case, and died four days after removal to hospital.

The seventh case was notified on 22nd July, at 42, Great Norbury Street. This was a man who had been resident in the Borough for only four days before his case was notified. He had for several weeks before been tramping the Lancashire towns in search of work, so that he must have been infected outside the Borough.

The eighth case was notified on August 3rd, at 46, Oldham Street. No source of infection could be discovered.

The ninth case was notified on August 17th, at 3, Ridling Lane. This was a young woman on a visit from Scotland. She had been six days in Hyde before notification. She also must have been infected outside Hyde.

The next six cases were notified on 20th, 26th, two on 27th, 29th August, and September 3rd. These cases all worked in the same weaving shed in Flowery Field. It was consequently assumed that a missed case must have been working in this shed whilst suffering from small-pox. After a good deal of inquiry a young woman was discovered

who had undoubtedly suffered from small-pox during the first three weeks of August. Her face was pitted in several places, and her arms, legs, and body showed the recent stains of the healed eruption. She also admitted that she had been ill at that time, and that an eruption had been out on her face, body, and limbs.

The following eleven cases notified between 3rd and 9th September had also a common source of infection. It was discovered that the first six of this series of cases had all stayed at the same boarding-house at Blackpool during the third week in August, which is the annual holiday week in Hyde. I wrote to the Medical Officer of Health of Blackpool, and obtained from him the names and addresses of all the Hyde people who had stayed at this lodging-house during the holiday week. I visited and examined these people, and found one young man who must have been suffering from small-pox in the eruptive stage whilst at Blackpool. At the time of my visit (6th September) his face showed the red stains and pits of recent small-pox, and the scabs had not entirely disappeared from his arms and legs. The remaining four cases of this series were infected by the same person after his return from Blackpool, two of them being members of his own family, and two who worked with him in the office of a hat factory in Mount Street.

The 27th and 28th cases were two unvaccinated children, notified at 111, Market Street, on September 7th. When enquiries were made here it was found that there had been three missed cases at 109, Market Street, by whom these children had been infected.

The 29th and 30th cases were notified on September 7th and 8th, at Ward Street and Mottram Road. These were also infected by the missed cases at 109, Market Street.

The 31st case occurred on September 10th, at 26, Great Norbury Street. No source of infection could be traced.

The 32nd case was notified on 24th September, at 24, Travis Street. This was a woman who worked at the hat factory in Mount Street, and who refused to be vaccinated. Her case was of a severe confluent form, which terminated fatally.

The 33rd case was notified on October 1st, at 37, Wood Street. No history of infection could be found in this case.

The 34th and 35th cases were notified on October 2nd and 3rd, at Swain Street. In these cases the infection was traced to the hat factory in Mount Street.

The 36th case was notified on 6th October, at 240, Clarendon Road, Newton. No history of infection could be discovered.

Hyde M. B.

The method of procedure adopted to prevent the spread of the disease was as follows:—Immediately on receipt of the notification the patient was removed to hospital. The other inmates of the house and contacts were promptly disinfected and vaccinated, and kept under daily supervision for sixteen days. Whilst the inmates were absent at the hospital being disinfected, the house was thoroughly disinfected, first by sulphurous acid gas, and afterwards the ceilings, walls, and floors were sprayed. All bedding, clothing, etc., was removed from the house and disinfected. In the instances where persons were found to have been at work whilst suffering from the disease the Public Vaccinator attended at the works and re-vaccinated all who were willing to submit to the operation.

All the common lodging-houses were visited daily.

Five persons were prosecuted for exposing themselves whilst suffering from small-pox, four of whom were convicted and fined.

Of the 36 cases two died.

There was only one instance of a known contact contracting the disease, and in that instance re-vaccination was refused, which shows the efficiency of re-vaccination as a preventive.

The epidemic was of a very mild type, most of the cases presenting a very scanty eruption. It is to this fact that I attribute so many missed cases, and the consequent difficulty of stamping out the epidemic.

I believe the epidemic has been continuous from the first case at the lodging-house in Manchester Road, the cases in which the infection could not be traced being infected by mild missed cases, as is shown in the discovery of the latter by tracing known cases to them.

I have the honour to be, Gentlemen,
Your obedient servant,
J. BENNETT.

19th October, 1904.

After the completion of this report four cases of a mild character were reported, all of which were traced to previous cases.

Measles.—Fifteen deaths were due to measles, being equal to a death-rate of 0.44 per 1,000 living. Most of these deaths occurred in November and December, when the disease was prevalent in Newton District.

Whooping-cough.—The 10 deaths registered from whooping-cough are equal to a death rate of 0.29 per 1,000 living.

Infectious Disease (Notification) Act.—This Act came into force in the Borough on March 1st, 1890. The following resolution was passed by the Council on February 9th, 1902: "That in view of the outbreak of small-pox in the Urban District of the Borough of Hyde, and in view of the difficulty sometimes experienced of distinguishing small-pox from chicken-pox in the early stages of the disease, the Council, acting as the Local Authority of the Urban District of the Borough of Hyde, do hereby order, pursuant to the provisions of the Infectious Diseases (Notification) Act, 1889, that the provisions of that Act shall apply in the said Urban District to the disease of chicken-pox, as if that were a disease specifically mentioned in the said Act."

Diphtheria and Membranous Croup.—Thirteen deaths were registered, giving a death-rate of 0.38 per 1,000 living. During 1904 no case was isolated in hospital.

Antitoxin has been supplied free for use in the Borough.

Scarlet Fever.—No death was recorded from this disease during 1904. The disease was less prevalent and of a milder type than in former years. As 67 of the 91 cases notified were removed to Hospital, 74 per cent. of the known cases were isolated in Hospital.

Enteric Fever.—As fourteen deaths were due to this disease, the death-rate during the year was equal to 0.41 per 1,000 living. Not one of the 65 cases notified was traced to water or milk supply, and in very few instances were any sanitary defects found on the premises where they occurred. The number of cases was relatively much greater in the Newton District than in Hyde, and it is a noteworthy fact that most of the privies remaining in the Borough are to be found in Newton. Another cause of the abnormally large number of cases was the absence of sufficient means of isolation. In one house four cases occurred, in three houses there were three cases, whilst three other houses had two cases each. It was impossible to isolate any cases of enteric fever during the year owing to the prevalence of small-pox. Pails with air-tight covers, for the reception and removal of typhoid excreta, are supplied to houses which are not on the water carriage system. Disinfectants are supplied to every case free of charge.

Diarrhœa.—The number of deaths from diarrhœa was 28, equal to a death-rate of .82 per 1,000 of the population. Twenty of these occurred in infants under one year old, seven between the ages of one and five, and one was over 65 years. Twenty-three deaths from this cause took place in Hyde and five in Newton. Compared with last year, there is an increase of 22, which is no doubt accounted for by the prolonged period of hot and dry weather during the summer and early autumn months.

Hyde M. B.

Action taken to prevent spread of Infection.—On receipt of a notification, the house infected is immediately visited, and enquiries are made as to the origin of infection, the sanitary state of the premises, and the means available for isolation at home. When home isolation is not possible the case is removed to hospital, the house and contents immediately afterwards disinfected, and disinfectants are supplied free of cost for the use of the inmates. When cases are treated at home, disinfection is carried out as soon as the medical attendant certifies that the patient has recovered, and is free from infection. In the case of enteric fever only urgent cases are removed to hospital, the accommodation being limited. The librarian is notified daily of all infected houses. School children, from any house at which an infectious case has been notified, are kept at home for a period corresponding to the incubation of the disease, after removal to hospital has taken place, and until the recovery of the patient when the latter has been kept at home.

The following inquiry form has been introduced, and is in use in the district.

BOROUGH OF HYDE.

SANITARY DEPARTMENT

(Form of Inquiry relating to Infectious Diseases.)

Disease ..... Date.....190
Occupier's Name .....
Occupier's Address .....
Owner's Name .....
Owner's Address .....
Patient's Name..... Age.....
Patient's School ..... Last there.....
Patient's Workplace ..... Last there.....
Date of onset of Symptoms .....
Other Members of Family } Schools .....
Workplaces .....
Ages .....
Removed to Hospital .....
House Disinfected.....
Doctor's Name .....
Date of Doctor's first Visit .....
Any Inmates of House gone away ..... Where.....
Business carried on, or work done at home.....
Nursed by.....Other duties of Nurse.....
Milkman's Name.. .....Address .....
Rooms occupied by Patient .....Condition of.....
No. of rooms in House. Upstairs.....Downstairs.....
Other sources of Infection, i.e., visitors, shellfish, visiting, ice-cream, etc.....

Hyde M. B.

DRAINAGE.	Cellar.....	Sink.....
	Bath, etc.	W.C.....
	Yard Drains	Rain Water .....
	Ventilation of House Drains	
	Main Sewer. Situation.....	Ventilation.....
PRIVY.	Kind	Distance from House.....
	Last emptied	Condition.....
	Ashpit	.....
NUISANCES.	State of Back-yard	.....
	State of Passages	
	Accumulations	
	Animals kept..	.....

Books from Library .....

Remarks .....

Phthisis and other forms of Tuberculosis.—During 1904 there were 32 deaths from phthisis, and 25 deaths from tuberculosis. The phthisis death rate is equal to 0·95, and the death rate from all forms of tuberculosis is equal to 1·69. Fifteen cases of phthisis were voluntarily notified. After a case of the disease has been notified, the Inspector visits the house and leaves a printed leaflet, which reads as follows :—

INSTRUCTION TO PERSONS SUFFERING FROM CONSUMPTION.

Consumption is an infectious disease, which is communicated in the following manner :—

The infection is contained in the spit or expectoration of a patient suffering from the disease. The expectoration is deposited on the floors, walls, clothes, handkerchiefs, &c., where it dries and is mixed with dust, and blown about in the air. This infected dust is inhaled by healthy persons, and produces consumption in their lungs.

The following precautions should, therefore, be taken by persons suffering from Consumption, to prevent the infection of others :—

They should not spit on the floor or walls of any living room, workshop, railway carriage, or in any place where people assemble. At home they should spit in a piece of rag or paper, and immediately throw this into the fire. A cup containing water may be used, which should be frequently emptied into the drains outside the house, and before being used again the cup should be thoroughly cleansed with boiling water.

When away from home a pocket spittoon, with a tight-fitting cover, should be used, or the expectoration deposited in pieces of tissue paper, rolled up and burned before the spit becomes dry.

All eating utensils should be thoroughly washed in boiling water before being used by another person.

Persons suffering from consumption should not kiss on the lips. Rooms occupied by consumptive persons should be kept thoroughly clean, and as much fresh air and light admitted to them as possible. Clothes soiled with expectoration should be washed and boiled. As soon as it becomes known that a person is suffering from consumption the rooms occupied by the patient should be thoroughly disinfected. This will be done free of cost; or, if the householder desires to do the work himself, directions will be given. When once the rooms have been thoroughly disinfected and cleaned it is easy to keep them so, by washing the floors frequently with soap and water, and dusting them every day with a wet duster, so as to prevent infectious dust being scattered about the room.

The walls of a room occupied by an infectious patient should be rubbed down with dough every three months.

A consumptive patient and his clothes should be kept scrupulously clean.

The commonest conditions which render persons liable to contract consumption, are —overcrowding, damp rooms, want of fresh air and ventilation, absence of light; therefore, all these conditions should be avoided as far as possible.

A consumptive person leaving a house should notify the fact to the Medical Officer of Health, so that it may be disinfected before being occupied by another tenant.

J. BENNETT,

Medical Officer of Health.

Bronchitis and Pneumonia.—There were 60 deaths from bronchitis. and 36 from pneumonia in 1904. The death-rate from the two diseases taken together is equal to 2.8 per 1,000 living. Thirteen of the deaths were of infants, and 20 were of children of a year old and under 5 years. Children whose vitality is low, either from unsuitability or insufficiency of food, from insanitary surroundings or from overcrowding, suffer severely from these diseases.

Coroner's Inquests.—In 29 instances the cause of death was investigated by the Coroner; that is 5.2 per cent. of the deaths recorded. The following tabular statement gives the age of each person at death, and the verdict of the Coroner's Jury:—

HYDE.

Age.	Verdict.	Age	Verdict
3 months	Overlaid	38 years	Found drowned
5 weeks	Convulsions	38 ,,	Suicide
18 months	,,	2 ,,	Scald
25 years	Thrown from lurry	13 ,,	Pneumonia
48 ,,	Accidental fall	68 ,,	Natural causes
55 ,,	Apoplexy	78 ,,	Fall
6 weeks	Convulsions	8 days	Inanition
30 years	Consumption	36 years	Heart disease
11 months	Convulsions	73 ,,	Fall
79 years	Fall	59 ,,	Heart disease
3 days	Premature birth	62 ,,	,,
61 years	Heart failure	4 months	Convulsions
26 years	Heart Disease		

NEWTON.

10 months	Scald	2 years	Burn
53 years	Natural causes	78 ,,	Fall

GODLEY—None.

Isolation Hospital.—There were 113 cases of infectious diseases, belonging to the Borough, treated in the Isolation Hospital during 1904. As already stated, 46 of these were small-pox cases, and the remainder were cases of scarlet fever. Two of the patients suffering from small-pox died in Hospital. In addition to these, 104 cases were admitted to Hospital from districts outside the Borough, of which 5 proved fatal. The following tabular statement gives the number of cases of each disease thus received, and the districts from which they came :—

District.	Scarlet Fever	Small-pox	Total
Dukinfield	0 ...	32 ...	32
Marple	38 ...	0 ...	38
Bredbury and Romiley	8 ...	4 ...	12
Disley	1 ...	0 ...	1
Hazel Grove	0 ...	5 ...	5
Denton	1 ...	5 ...	6
Levenshulme	0 ...	4 ...	4
Audenshaw	0 ...	2 ...	2
Glossop	0 ...	1 ...	1
Droylsden	0 ...	3 ...	3

Thus 13 cases of small-pox, and one case of scarlet-fever, were received from districts in other Counties.

New Isolation Hospital.—Building operations for the new hospital, which were commenced early in 1903, are now nearing completion. Accommodation is provided for 32 scarlet fever patients in two blocks containing two wards each, ten

typhoid patients in one block of two wards, ten diphtheria patients in a single block of two wards. There is also an observation block of two wards, having accommodation for one patient each. It is expected that the hospital will be ready to receive patients in April.

Hyde Corporation Act, 1903.—Under this Act many additional useful powers have been gained in connection with infectious diseases and sanitation. This Act also contains "milk clauses," giving powers to check the sale of tuberculous milk within the Borough. These clauses are practically the model clauses of the Local Government Board.

Water-supply.—The domestic water-supply is obtained from the reservoirs of the Manchester Corporation, situated at Woodhead. It is abundant, and of good quality. That for trade purposes is obtained from the reservoirs of the Hyde Corporation, situated at Gee Cross.

Dairies, Cowsheds, and Milkshops.—Regulations under the Dairies, Cowsheds, and Milkshops Orders have been in force since October 2nd, 1899. There are about 50 persons registered as cow-keepers in the Borough. The premises have all been inspected.

Slaughter-houses.—There are 29 registered slaughter-houses in the Borough. These have been regularly inspected, and were found to be kept according to the regulations. The difficulty of arranging for efficient inspection of meat is considerable. Additional powers have been obtained in regard to slaughter-houses under the Hyde Corporation Act, 1903.

The chief industries are cotton manufacture, engineering, boiler-making, calico printing, hat manufacturing, margarine making, coal mining, leather dressing, printing, and the manufacture of India rubber goods.

Offensive Trades.—The only offensive trades carried on in the Borough are those of tripe-boiler and soap-boiler. The former trade is carried on in seven establishments; the latter in one. All have been regularly visited and found clean and well kept. No complaints have been received as to nuisance therefrom.

The Public Health Acts Amendment Act has been in force since April 14th, 1891.

Common Lodging Houses.—There are now three common lodging-houses, which provide accommodation for 85 lodgers. One common lodging-house, providing accommodation for 23

lodgers, has been closed during the year. Those remaining are unfitted for the purpose, the structural arrangements are bad, they are difficult to keep clean, and badly ventilated.

Insanitary Property.—The following improvements to insanitary property, recommended in the Report of 1903 have been carried out :—

Nos. 87 and 89, Manchester-road, and two single houses at the back, have been converted into two houses, with through ventilation, and faulty drains remedied.

No. 90, Manchester-road, and 1, Cooper Street. Both single houses have been converted into one, with through ventilation.

No. 62, John Street, and 1, Grundy Court have been similarly improved.

Two uninhabitable houses in White Court have been closed.

Millwood Cottage, Oldham Street, has been closed.

No. 30, Reynold Street, and 3 and 5, Collier's Yard have been closed pending re-building.

The following list of insanitary property, much of which has been mentioned in previous reports, requires dealing with :—

Green End Court. Four back-to-back houses.

Nos. 26 and 28, Catherine Street, and 1 and 2, Washington Court. Four back-to-back houses.

Nos. 31, 33, 35 and 37, Cheapside, and 1 to 4, Leigh Court. Eight back-to-back houses.

Nos. 2 to 5, Perrin Court. Four houses without through ventilation.

No. 8 Ridling Lane, and 2, Beeley's Yard. Two houses without through ventilation.

Nos. 62, 64 and 66, Hyde Lane, and 1 to 3, Dawson Court. Six houses without through ventilation.

Nos. 52 and 54, Grafton Street, and 1 and 2, North Court. Four houses without through ventilation.

No. 6, King Street, and 1, King Court. Two back-to-back houses.

No. 33, Victoria Street, and 2, Meadowcroft Court. Two back-to-back houses.

No. 23, Commercial Brow, and 2, Andrew Square. Two back-to-back houses.

Nos. 57, 58 and 59, Old Road, and three houses at back. These are six back-to-back houses which should be converted to three with through ventilation and improved drainage.

No. 18, Commercial Street, and house at back, should be made a single house.

Factory and Workshop Act.—This Act has been enforced in 1904, and the Medical Officer of Health prints a separate Report on the work done There are, in all, 214 workshops in the Borough on the register, viz. :—

46 Bakehouses	5 Saddlers
13 Joiners and Cabinet Makers	4 Cycle Repairers
47 Bootmakers and Cloggers	3 Brush Makers
13 Dressmakers	2 Shirt and Blouse Makers
24 Hat Body Makers	2 Picture Framers
8 Tailors	1 Skip Maker
5 Tinplate Workers	5 Bottlers
5 Wheelwrights	6 Tripe Dressers
6 Stocking Makers	3 Card Cleaners
7 Milliners	6 Smiths
	9 Sundry Workshops

The number of visits of inspection made during the year was 286. There were 20 written notices given, in respect of defects discovered. Of 34 defects noted, 23 were abated before the close of the year. There were 4 underground bakehouses in use at the end of 1904.

Nuisance Abatement.—The Chief Sanitary Inspector, Mr. J. Shawcroft, sees that all nuisances (complained of or discovered) are promptly abated. During the year 93 ashpit-privies were abolished and suitable water closets provided.

Refuse Removal.—The Sanitary Committee undertake the removal of the refuse from privies and ashpits with their own staff of men, horses and carts. The work has been thus carried out much more efficiently than when it was done by contractors or owners. Much of the refuse of the town is taken to the destructor and there burnt ; tips are made use of for the dry and inoffensive refuse. The Inspector has charge of this work. During 1904 there were 5,908 ashpit-emptyings, and 11,729 boxfuls of refuse were removed.

Ashpits being replaced by Ashbins.–The Medical Officer of Health having pointed out that many of the ashpits were large and uncovered, and consequently liable to become wet and foul, recommended that ashbins (with tight-fitting lids) be substituted for such ashpits. This advice has been taken in a large number of cases, and there are now a great many of such ashbins in use. The number is increasing every year.

MACCLESFIELD

Municipal Borough.

Medical Officer of Health—Dr. J. H. Marsh.
Population at Census, 1901—34,624.
Estimated Population in middle of 1904—34,624.
Area in acres—3,214.
Birth-rate per 1000 living—22.6.
Death-rate per 1000 living—20.4.
Death-rate from seven principal Zymotic Diseases—2.3.
Deaths under one year to 1000 births—178.

The population of this Municipal Borough was 36,009 at the Census in 1891, and 34,624 at the Census in 1901. The decrease in the population during the decennium 1891-1901 was thus 1,385—that is 3.84 per cent. It is assumed that the population has remained the same as at the Census of 1901. However, the Medical Officer of Health is of opinion that some of the factors which caused a decline in the population are still in operation. The factors referred to are (1) Excess of emigration over immigration, and (2) The low birth rate.

The Assistant Overseer reports that at present there are 8,595 occupied dwellings in the Borough. Taking the average number of persons occupying each house at 4 the present population would be 34,380; that is 244 less than at the Census. At best the population is stationary; yet there is evidence that it is declining.

Soil and Elevation.—The soil of the Borough is variable. To the west and north-west sand and gravel lying on boulder-clay alternate, the sand predominating. In the centre of the town are several feet (2 to 5) on coarse gravel on clay. On the east side there is brick-clay on sand and gravel, and to the south boulder-clay. The substratum is new red sandstone. The elevation of the town varies between 400 and 500 feet above sea level.

Births and Deaths.—In 1904 the number of births registered was 784. This number is equal to a birth-rate of 22.6, which compares unfavourably with the birth-rate (25.1) in 1903, but favourably with 21.4 in 1902, and 22.2 in 1901. In 1904 the number of deaths registered (excluding the deaths of 91 persons not belonging to the Borough at Public Institutions, viz.: 1 at the Small-pox Hospital, 15 at the Workhouse, 5 at the Infirmary and 70 at the Asylum) was 707. This number is equal to a death-rate of 20.4, which compares unfavourably with the death-rate (17.3) of 1903, 15.1 in 1902, and 18.5 in 1901.

Illegitimate Infants.—The percentage of illegitimate infants to the number of infants born was as follows in 1904:—

West Macclesfield	7.8
East Macclesfield	7.7
Sutton	7.5

West Macclesfield District contains the Workhouse, and so has an undue proportion of illegitimate infants.

The high death-rate amongst these illegitimate children is to a considerable extent due to the fact that in many cases the burden of expense incidental to the birth of the child and to its subsequent maintenance is borne principally by the mother, with the result that the child is put out to nurse, and is thus deprived of maternal care. Our Legislature would do well to follow the example of New South Wales, where a law is enacted which provides that a mother may take legal action against the father of her prospective child before its birth, and also makes it possible for the Court to compel the payment of the expenses incidental to the child's birth, and for the maintenance of the mother for one month before confinement and for six months after, and also for the maintenance of the child.

Uncertified Deaths—Three deaths were registered in 1904 in respect of which no certificate of the cause of death was given by a registered medical practitioner, or by the Coroner after inquest held. The death of a man, 70 years old, was registered as due to "heart failure." The death of a woman, 70 years old, was registered as due to "heart disease." The death of a woman, 24 years old, was registered as due to "probably heart failure following ex-ophthalmic goitre."

Deaths in Public Institutions.—There are 4 Public Institutions in the Borough. During 1904 222 deaths occurred in one or other of these, viz.:—91 of persons who did not belong to the Borough, 66 of persons belonging to West Macclesfield, 49 of persons belonging to East Macclesfield, and 17 of persons belonging to Sutton. In dealing with the deaths in the Borough, the deaths in Public Institutions have been added to the mortality of the three divisions of the Borough to which they belong.

Infant Mortality.—Of the whole number of deaths belonging to the Borough, 140 were of infants who had not completed their first year, being equal to 178 deaths to each 1,000 births. In West Macclesfield the infant mortality was equal to 173 per 1,000 births, in East Macclesfield it was equal to 190 per 1,000 births, and in Sutton it was equal to 166 per 1,000 births. The death-rate for all 3 districts is excessive, and for East Macclesfield it is appallingly high. Year after year this Borough has a high rate of infant mortality, and East Macclesfield an exceptionally high rate. There must be some special cause or causes peculiarly injurious to child life in East Macclesfield.

The prinicpal causes of deaths of infants in the whole Borough in 1904 were 15 diarrhœa, and allied diseases, 15

convulsions, 18 marasmus or wasting, 6 tabes mesenterica, 11 measles, 6 whooping-cough, 12 bronchitis, and 10 pneumonia.

The association of diseases of the digestive organs and respiratory organs in young children is very close. Many of the children who survive diseases associated with the digestive organs are more or less weakly, and peculiarly liable to succumb to lung disease with the onset of the colder weather. Again, measles and whooping-cough are prone to follow, or are associated with bronchitis and bronchial pneumonia, particularly in the squalid, overcrowded, neglected dwellings of the poorest class.

Infant mortality is closely connected with infant feeding. The Medical Officer of Health points out, as a fact, full of instruction, that when during the suffering and starvation of the Siege of Paris, the general mortality of the population was doubled, that of the infants was reduced by 40 per cent. simply from the mothers being compelled by circumstances to suckle their babies, and the same increase in the adult, and reduction of the infant mortality, was observed during the Lancashire cotton famine, when mothers were no longer at work in the mills.

An opinion is expressed that the Education Authority might do more to teach the older school girls how to feed and manage a baby. Practical demonstrations might be given in the advanced classes in day schools and evening continuation schools. In Macclesfield much good is done by the Ladies' Public Health Society, which is supported by voluntary contributions, and has taken in hand the question of reducing the death-rate amongst infants in this town. A number of ladies have undertaken to visit and advise mothers on the care of their children.

During the year a well qualified lady Health Visitor—Miss Brett—has been appointed, and to her the district of East Macclesfield has been specially assigned. The result will be most satisfactory and productive of good; not only may deaths be averted, but in the majority of cases it cannot be doubted that a better system of infant feeding and management will result in the rearing of stronger infants. The National Society for the Prevention of Cruelty to Children also continues its good work, and impressing on parents who are drunken or neglectful, their responsibilities towards the helpless children they have brought into the world.

The following tabular statement is interesting. It shows the number of deaths of infants under one year old to every 1,000 births in the sub-divisions of the Borough, and in the whole of England and Wales. It will be seen that during six years the infant mortality of Macclesfield maintained a high average, and that in 1902 it fell to about the normal rate. In 1903 the infant mortality rose considerably, being

a little higher than the infant mortality in England and Wales, and in 1904 the infant mortality was much higher than in England and Wales. The table shows the number of deaths of infants under one year to each 1,000 births from 1896 to 1904. In some earlier years (markedly in 1892 and 1895) the infant mortality was even higher.

Districts.	1896	1897	1898	1899	1900	1901	1902	1903	1904
West Macclesfield (excluding Public Institutions)	138	152	189	223	167	186	111	110	173
East Macclesfield and Hurdsfield	180	187	159	167	242	155	103	170	190
Sutton	148	212	135	187	142	219	65	114	166
Whole Borough ...	155	175	173	196	190	180	102	134	178
England and Wales ...	148	156	161	163	154	151	133	132	146

Zymotic Mortality.—The number of deaths in 1904 from the seven chief zymotic diseases was 80, viz.:—3 small-pox, 36 measles, 2 diphtheria, 13 whooping-cough, 2 enteric fever, and 24 diarrhœa. The death-rate as regards the chief zymotic diseases was therefore 2.3 per 1,000 living. This death-rate steadily fell from 1874 to 1894. In 1874-8 this mean death-rate was 3.0, in 1879-83 this mean death-rate was 2.3, in 1884-8 the same death-rate was 1.9, and in 1889-94 the mean rate was 1.7. In 1895 this death-rate rose to 3.7. In the two following years it was 3.3. In 1898 this death-rate fell to 1.8. Thus, after three years, during which the zymotic mortality was much in excess, it became moderate for a year. In 1899 this mortality increased again, being 2.7, and in 1900 it fell to 1.8. This death-rate fell again in 1901 to 1.6, and in 1902 it was 0.3, which is low beyond all precedent. In 1903 it was still low, being 0.8. Thus the rise in 1904 is quite remarkable.

Cases of Infectious Disease notified.—During 1904 there were 224 cases of infectious disease notified, viz.:—49 small-pox, 7 diphtheria, 1 membranous croup, 56 scarlet fever, 12 enteric fever, 4 puerperal fever, 47 erysipelas, and 48 pulmonary tuberculosis. The last-mentioned cases were notified voluntarily. During 1903 there were 282 cases notified. In 1902 there were 185 cases notified. In 1901 there were 104 cases. In 1900 there were 156 cases, and 1899 there were 364 cases.

Macclesfield M. B.

The distribution of the cases of infectious disease in 1904, and the number of cases removed to hospital from each locality is indicated in the following tabular statement:—

Notifiable Diseases.	Total notified in each Locality.			No. of Cases removed to hospital from each locality		
	West Macclesfield. W. and E.	East Macclesfield.	Sutton.	West Macclesfield.	East Macclesfield.	Sutton.
Smallpox ...	16	21	12	16	21	12
Diphtheria ...	4	1	2	1	...	2
Membranous Croup ...	...	...	1	...	...	...
Erysipelas ...	19	15	13	...	...	...
Scarlet Fever ...	28	20	8	14	7	8
Enteric Fever ...	7	5	...	...	..	...
Puerperal Fever ..	2	1	1	...	...	...
Pulmonary Tuberculosis ... (Voluntary)	33	10	5	...	...	...
Totals ...	109	73	42	31	28	22

Small-pox.—Of the 49 cases notified 2 were under 5 years of age, 3 were 5 and under 15, 9 were 15 and under 25, and 35 were between 25 and 65 years old. The cases which proved fatal were all persons of upwards of 25 years of age. The case which was under a year old was only vaccinated 5 days before exposure to infection, and too late for vaccination to cut short the disease. The other patient who was under 5 years of age was said to have been vaccinated but no scars were visible on its admission to hospital. A patient, aged 8 years, whose eruption was very confluent, had not been vaccinated at all, a child aged 10 years had a remarkably mild attack; and another child, notified to be suffering from small-pox was found to have chicken-pox only.

Macclesfield M. B.

The outbreak of small-pox commenced on June 24th, a woman living in Lunt Hill being the first notified case. She had been lodging the previous fortnight in a common lodging-house, where small-pox was epidemic. The attack was not severe, and permitted the patient to ramble about. She thus infected her sister and a boy living next door. The sister communicated the disease to her father and mother, all living in a dirty crowded neighbourhood. The disease spread from house to house up and down the squalid street, like wildfire. As most of the inhabitants of this quarter were staunch anti-vaccinators, it was practicably impossible to prevent an extension of the malady in such quarters. The inevitable result was that infection began to manifest itself outside the poor neighbourhood (Watercotes), and amongst a better class, who had in various ways been brought into contact with persons suffering from the disease, and on August 17th, a woman was notified as having small-pox in Union Street, West Macclesfield. On August 30th, the disease had spread to Allen Street, East Macclesfield, and shortly after, a barber in Chester Street, West Macclesfield, was attacked with confluent small-pox. By this time it was almost impossible to trace the source of infection.

During the earlier stages of the epidemic it was comparatively easy to follow the spread of the disease from case to case, but later, as sources of infection multiplied, and some cases apparently escaped recognition altogether, it was almost impossible to say how new cases of the disease originated. The Medical Officer of Health is satisfied that there was much wilful concealment of the truth, and much deliberate misrepresentation, as to the source of infection in some cases. Perhaps one of the chief influences in spreading the disease may be set down to missed cases. Such cases were so mild that no medical advice was sought for, and the disease was not recognised until it had been communicated to someone else.

Small-pox was most active during three periods. The first period begins with the week ending July 16th, and continues to the week ending August 20th, this represents the Watercoats outbreak. The next period begins with the week ending September 3rd, and represents Allen Street outbreak. Infection was handed on by a few mild straggling cases mis-diagnosed or diagnosed late, till the end of November. In December a smaller outbreak occurred.

The procedure adopted in dealing with this epidemic has been as follows :—

(1) Immediate removal of the patient to hospital. In almost every case the Medical Officer of Health has seen the patient before admission into the wards.

(2) Visitation of the house infected and neighbourhood by the Medical Officer of Health and the Sanitary Inspectors, and as

full and complete a list as possible of contacts having been obtained, it was at once forwarded to the Public Vaccinator, so that re-vaccination might be offered to those who had been exposed to infection.

(3) Cleansing and disinfection of the premises, and of the bedding and clothing of contacts, etc.

(4) Bills and placards were extensively circulated, urging vaccination on unprotected people, instructing persons on the signs and symptoms of small-pox, and showing the importance of seeking medical advice as soon as the disease was suspected.

The experience of the Medical Officer of Health has shown him the supreme importance of having all cases of small-pox promptly removed to hospital, and all contacts re-vaccinated. If any considerable delay occurs in carrying out either of these measures, then means subsequently taken to prevent the spread of the disease are futile.

One person was prosecuted for exposing himself in a public place whilst wearing clothing he had worn when nursing another patient.

One of the most notorious of the overlooked cases was that of a man who had the disease in a mild form, and did not consult a doctor till the pustules were beginning to dry up. He infected his wife, and while the eruption was out visited a club on several occasions, and there infected three men. It was principally through this man that the disease was not stamped out before the end of December. One of the three men infected at the club died of confluent small-pox three days after admission to Hospital. The medical man in attendance delayed notifying until the pustules were fully developed, although he had been seeing the case daily for nearly a week. There was delay also in notifying another case. The patient was known to have been in contact with a case of small-pox a fortnight before he was taken ill with backache, etc., and yet the medical man in attendance delayed notifying until the eruption had been out three days, and the man had been visited by friends, two of whom subsequently developed the disease, and these in turn communicated it to others.

The Medical Officer of Health much regrets these delays in notifying. He is always willing to assist Medical Practitioners in arriving at diagnosis.

Vaccination Returns.—The following returns may be of some interest :—

Number of cases vaccinated in West Macclesfield	350
do. do. East Macclesfield	278
Cases postponed owing to ill health	21
Cases insusceptible	3
Cases which left District unvaccinated ...	9
Cases exempted	8

It is pointed out that full protection against epidemic small-pox will only be afforded when the re-vaccination of all children about 12 years old is obligatory.

Measles.—The great increase in the zymotic death-rate is largely due to the mortality from measles in 1904. As there were 36 deaths from measles the death-rate from this disease only was equal to about 1.04 per 1000 living.

The Medical Officer of Health suggests that the first case occurring in a household might with advantage be notified. Parents and school teachers should be expected to notify the first suspicious case noticed in the house or school. More careful home isolation is needed, and notification would assist the Authority in obtaining this. At present there is much reckless disregard of the simplest precautions needed to prevent the disease spreading. It is no unusual thing to see children freely mixing with others whilst the rash of measles is still out. Careful home isolation should be continued for three weeks or a month.

As regards closure of schools, the Medical Officer of Health is fully convinced, after five years' experience, that the view held by Dr. Niven, the Medical Officer of Health for Manchester, is correct, viz.: "Unless the infant departments of schools are closed when the proportion of children suffering from measles reaches 10 per cent., the next best thing is not to close the schools at all."

Whooping-Cough.—All those who died from Whooping-Cough were under five years of age, and six had not yet completed their first year.

Every effort should be made, and constantly repeated, to impress on parents the gravity of the disease, and their duty to use every means in their power to shield young children from infection, and, when the disease is present, to enforce strict home isolation of the sufferer. This work might well engage the attention of the Ladies' Public Health Society, who by verbal warnings and the distribution of sheets of "Precautions against Whooping Cough," would do valuable work.

School teachers might also help by excluding from school suspicious cases, and children coming from infected households. Any illness in the infant department following on the occurrence of whooping-cough should be viewed with suspicion, and the child sent home for observation for a few days.

On June 16th, 1904, the following circular letter was forwarded to every head teacher in the Borough :—

Health Department,
Town Hall,
Macclesfield,
June 16th, 1904.

Dear Sir, or Madam,

Whooping-Cough.

This disease is at present threatening to become epidemic. It is therefore very desirable that all children suspected of sickening with the disease should be excluded form school.

I beg to remind you that this disease is very infectious from its commencement, even before the characteristic crowing cough is fully developed, and when there may be nothing to indicate its onset except perhaps a feverish cold, with increased frequency of coughing.

At the present time any appearance of illness should be considered sufficient ground for sending a child home for a few days.

It is particularly in the Infant Department that cases are likely to occur.

In the interest of the public health I invite your co-operation in assisting to prevent the disease gaining a hold on the children of the town, and to assure you of my willingness to help you in the matter in any way I can.

Yours faithfully,
J. Hedley Marsh.

Epidemics of measles and whooping-cough are frequently associated, or follow one another, the most serious complication is both diseases being broncho-pneumonia during the early stages, and during the period of convalescence, consumption or pulmonary tuberculosis.

Diphtheria and Membranous Croup.—Taking these as representing one disease the number of cases notified in 1904 was 8, and 2 proved fatal. Four cases occurred in West Macclesfield (two of which were notified from the Infirmary), one case occurred in East Macclesfield, and three cases occurred in Sutton. The drains were defective in two blocks of property where cases occurred.

The Medical Officer of Health points out that the symptoms of this disease are caused by a specific poison (Toxin), and that diphtheria antitoxin neutralises this poison, and prevents it from harming the vital structures, but it does not repair any harm which the toxin may have done. Thus, one of the most essential requirements in connection with diphtheria is the early injection of antitoxin, a supply of which is always kept at the Isolation Hospital.

No doubt a large number of cases notified are not true diphtheria but cases of follicular tonsillitus, ordinary quinsy, or other forms of septic sore throat. Bacteriological examination should be made in all cases to verify the diagnosis. The Sanitary Authority recognise that it is their duty and privilege to provide for the bacteriological investigation of supposed diphtheria cases free of charge to the doctor and patient, and outfits are accordingly supplied to be used for taking samples of morbid material and transmitting them to the Laboratory of the Lister Institute of Preventive Medicine.

The term membranous croup should be omitted from the list of notifiable diseases, as probably all cases of membranous croup are really diphtheria, and should be known by that name. The Medical Officer of Health concludes by calling attention to the wisdom of administering antitoxin to those exposed to infection from diphtheria. In most cases 2,000 units would serve to render a person immune for a few weeks.

Bacteriological Examinations.—Forty specimens were sent to the Lister Institute in 1904. In 39 of these specimens the bacillus of bacteria was not found, in one specimen it was found. In 6 cases a second specimen was sent, and in one case 3 specimens were sent, the result in all being negative. A negative result may mean:—

(a) That the patient was not suffering from diphtheria, or

(b) That an antiseptic was used shortly before taking the swab, or

(c) That the diseased portion of the throat was not touched.

Three consecutive failures to find the bacteria bacillus are required before any importance attaches to the results.

Every case of sore throat should be regarded as possible diphtheria until there is good evidence that it was not. As regards the pseudo diphtheria bacillus, it is safe to regard any patient who has these bacilli as infectious, but he should not on this account be sent into a diphtheria ward, unless protected by a full dose of diphtheria antitoxin.

Scarlet Fever.—Although there were 56 cases notified none proved fatal. As 29 cases were removed to hospital, 51 per cent. were thus dealt with. Twenty-eight of the cases occurred in West Macclesfield, 20 in East Macclesfield, and 8 in Sutton. All but four of the cases were children under 15 years of age. Thirty-four of the cases occurred in houses provided with privy middens, and of these 24 were offensive. In four cases the house drains were defective. In three instances two

cases were reported from the same house, and in two instances three cases were reported from the same house. "Return cases" were most carefully looked for, but none were discovered. However, the Authority protect themselves by giving the child's parents or guardians a signed notice that the Corporation will not be liable for future infection, following on the discharge of a child from hospital.

Although the total number of cases of scarlet fever among school children has been considerable, it has not been thought necessary to close any school on that account.

The severity of scarlet fever is dependent to no small extent on the nutrition of the children attacked. Low mortality or no mortality is due to the milder character of the disease.

So far as Public Health work is concerned, it is important to note that scarlet fever is a disease capable of assuming a more malignant aspect than it now presents, and of causing a high mortality. It must be remembered that scarlet fever, like measles, is liable to leave formidable sequelae of a permanent character. The most important of these are ear disease, which may lead to deafness or fatal brain disease, and heart disease.

Untraced cases of scarlet fever have been shown to have a closer connection with defective closets than other common zymotic diseases, except perhaps enteric fever. It is probable that the urine of a scarlet fever patient contains this specific organism from a comparatively early period. It appears also that the micro-organism of scarlet fever has the property of multiplying in milk

The improvements which have taken place in recent years in the disposal of excreta, may possibly serve to explain in some measure the great reduction in the fatality of scarlet fever.

Enteric Fever.—Of the 12 cases notified, 2 proved fatal, none of the cases were removed to Hospital. This is the smallest number of cases that have been notified for a number of years. The Medical Officer of Health is of opinion that the decline in enteric fever is in some extent due to the reduction of privy middens in the Borough. Six cases were notified from Parkside Asylum. These were carefully investigated, and samples of the water supply were submitted for bacteriological examination, but the outbreak was not explained. There is however in all large Asylums, "a certain amount of Asylum dysentry" constantly present, and it is possible to conjecture that under certain conditions, the baccillus coli or other closely allied organism, may give rise to a disease clinically indistinguishable from enteric fever. It seems probable that this disease is most frequently conveyed to those in personal contact with patients by means of polluted hands. The only way of preventing this is by the exercise of the most rigid cleanliness by nurses and all who minister to the sick.

On receiving notification of a case of enteric fever, a pail, and an abundant supply of disinfectants are sent to the house, with instructions that all excreta from the patient are to be put in the pail, which is frequently emptied, and thoroughly cleansed. However, all these precautions are of little use if there is delay in notifying, and the midden gets infected. In such cases the midden is ordered to be carefully emptied, and the walls and the floor scraped and thoroughly saturated with chlorinated lime-wash. In some cases, when the midden is old and dilapidated, and resembles a huge cavern with many recesses, cleansing and disinfecting it adequately seems almost impossible.

The one outstanding fact in most of these cases is the presence near the dwelling of an accumulation of putrifying human excreta contained in a pit called an ashpit. The ashpits (!) harbour and breed flies, to which may reasonably be assigned an important part in the spread of infection.

Bacteriological Diagnosis.—The Health Committee provide, free of cost, to all Medical Practitioners in the Borough, complete outfits for taking specimens of blood serum from persons suspected of having enteric fever, and swabs from the throats of persons suspected of having diphtheria. Practitioners are thus enabled to abridge as far as possible the period of doubtful diagnosis. Of course, specimens from throats should be taken before an antiseptic preparation has been applied.

Twenty specimens of serum were sent to the Lister Institute for examination, from cases where enteric fever was suspected. In three, a distinct typhoid reaction was obtained. In one a marked typhoid reaction was obtained, in 2 the reaction was feeble, and in 1 very feeble. In the last named case a second specimen was sent after a few days, and gave a distinct reaction. Although this reaction is a general one, produced in serum from patients suffering by most, if not all bacterial diseases, in enteric fever it is a reaction of infection, and occurs sufficiently early to be of great value in assisting diagnosis, and thus shortening the period before notification. If the Practitioner declines to avail himself of this test, and awaits development, probably no special precautions are taken in dealing with the patient's excreta, and spread of disease may take place which might have been avoided.

Influenza.—Under this heading are included deaths due to true epidemic influenza, as distinguished from deaths due to ordinary influenza, cold or catarrhal fever. The number recorded in 1904 was 4, but probably this figure does not represent all the deaths for which influenza is responsible, many such deaths in aged persons being assigned to pneumonia, heart disease, etc.

To prevent the spread of this disease, which is extremely infectious, strict isolation of the sufferers is essential, as well as careful disinfection of the sputum and nasal discharges. The disease seems specially fatal to the aged, who should therefore be most carefully protected from infection. After the recovery or death of a patient, his rooms and clothing need disinfecting.

Elementary Schools.—There are 16 Elementary Schools in the Borough. The average number of scholars attending these schools last year appears to have been 5,277. The numbers on the registers on November 1st, 1904, was 1,750 in the Infants' Classes, and 4,270 in the standards.

During the year the Medical Officer of Health was invited to meet a Committee of the Education Authority, to confer on the measures which should be taken to prevent the spread of measles and whooping cough amongst the scholars, and it was decided that the head teachers should be asked to notify, on forms specially provided, the names and addresses of any scholars who appeared to be suffering from, or threatened with attack by these diseases.

The notification asked for was given to some extent. If systematically and promptly done, it will supply the Medical Officer of Health with most valuable information, on which he can advise the Sanitary Authority to Act.

Unless all suspected cases are notified promptly, very little benefit will result.

School Closure.—The following Schools were closed on accounts of measles for the periods stated :—

Duke Street National School (Infants' Department) closed from 5th September until 26th September.

St. George's Branch School, London Road (Infants' Department), closed from 5th September until 26th September.

Lord Street School (Infants' Department) closed from 19th September until 10th October.

Centenary School (Infants' Department) closed from 23rd September until 14th October.

St. Alban's School (Infants' Department) closed from 14th October until 4th November.

Mill Street Wesleyan School closed from 24th November until 8th December.

Owing to the prevalence of whooping cough the Infants' Department of Christ Church School was closed from 21st November until 19th December.

The Infant Departments of all the Elementary Schools in the Borough, except Broken Cross, were closed from 28th

November until 22nd December, the commencement of the Christmas holidays, to check the spread of measles and whooping cough.

In almost every case it will be noted that it was the Infant Department which was closed, and this fact points strongly to the unwisdom of sending very young children to school. No child under five years of age should be allowed to attend a Public Elementary School. Gathering very little children into school is a waste of public money from an education point of view, and involves reckless exposure of the little ones to infection.

Such premature school attendance tends to "force" functions of the brain which should only come into activity at a later age, and so favours mental deterioration. It also greatly increases the liability to near-sightedness and general ill-health. It is argued that apart from the excessive incidence of infectious diseases, the children of the poor are more favourably placed in a large warm schoolroom than in their homes. In naturally ventilated schools this is the exact opposite of the truth. Even in mechanically ventilated schools sixty to seventy infants cannot be collected in a classroom without some fouling of air. The atmosphere of even the bedrooms of the vast majority of the poor is less polluted than that of the vast majority of schools.

Erysipelas.—19 cases occurred in West Macclesfield of which 2 were fatal; 15 cases occurred in East Macclesfield of which 1 was fatal; and 13 cases occurred in Sutton, of which 4 were fatal.

It is questionable whether much advantage results to the community from the notification of erysipelas. Many of the notified cases in the Borough are inflamed wounds, or cases of facial erysipelas. A few are cases of infected osteo-myelitis. Others are lymphangitis and adenitis, due to infection of minute wounds. Others again are cases of phlebitis. When such cases are notified there is little or nothing which the Medical Officer of Health can do except to attempt disinfection, which in the majority of these cases is quite unnecessary. The sole advantage of notifying erysipelas appears to be when there is a parturient woman or one approaching confinement in the house. In such a case the Medical Officer of Health may be able to prevent the spread of infection. However, there is in most towns no available accommodation for the isolation of a woman under such circumstances.

Puerperal Fever.—Four cases were notified and two deaths were recorded.

The greater control which will be exercised in future over midwives, and the greater cleanliness which will be ensured, cannot fail to reduce the number of cases of puerperal

fever, and the mortality therefrom. At present the disease is very irregularily notified, and it is certainly of more frequent occurrence among those who, from poverty or otherwise are without skilled medical attendance and good nursing. It thus happens that numbers of cases are never seen by a Medical Practitioner, and in many instances the Medical Officer of Health knows nothing about them, till the Registrar sends him a record of the death of the patient.

In Macclesfield the Medical Officer of Health on receiving a notification of puerperal fever, at once enquires into the case, and visits the midwife, requiring her to discontinue practice till she has submitted herself and her appliances to cleansing and disinfection. This is done at the Isolation Hospital. No difficulty has been found in getting infected midwives to submit to the process prescribed.

Probably an increased amount of infection will be discovered henceforward, as a certified midwife will be required to notify to the Local Supervising Authority any case which she is attending, where after delivery a temperature rises to 100.4 Fah., with quickening of the pulse, for more than 24 hours.

Tuberculosis.—There were 47 deaths from phthisis and 31 deaths from other forms of tubercular disease. The 31 deaths include 8 from tabes mesinterica, 3 from tubercular meningitis. Thus the mortality from phthisis was equal to 1.3 per 1,000 living, and the mortality from all tubercular diseases was equal to 2.2 per 1,000 living. It is noteworthy that these figures are higher than those given for 1903. However, the Medical Officer of Health does not think that they represent the whole of the deaths from tuberculosis. He is convinced that many cases of so-called bronchitis are really tubercular in origin.

Voluntary notification of Phthisis.—There were 48 notifications received during the year, but 3 had been previously notified. Visits were made in 29 cases, 7 of the cases were notified from the Parkside Asylum, and 2 from the General Infirmary. Evidence of direct infection was obtained in 22 cases, that is to say, 15 of those affected had lived with or frequently visited consumptive relatives, 4 had worked with men who had died from consumption, and 3 had lodged with consumptives. The Medical Officer of Health has a high opinion of the voluntary notification in throwing light on the incident, mode of spreading of tuberculosis. The difficulties in the way of taking steps to prevent infection spreading are enormous, owing to (1) the incubation period of phthisis, averaging from 12 to 18 months, and (2) the average length of life from the first manifestation of the disease being from 3 to 4 years. Patients are occasionally encouraged to

remain in the factory or workshop when they are freely expectorating tubercle bacilli, on the plea that the patient has to earn her living. This is not fair to the sufferer and certainly not to the fellow-workmates. An open-air occupation of a light nature is the only rational form of occupation for a consumptive, and so employed he will be able to continue earning wages for a much longer period than if employed within doors. Again, on economic grounds, a consumptive man or woman should be removed from close contact with others in a hot factory or workshop. The serious problem will have to be faced by Sanitary Authorities of how to provide for consumptives. Sanatoria are needed, or open-air colonies. Several Authorities might combine for the purpose of providing a suitable sanatorium.

The two most common sources of infection are a consumptive relative or a consumptive workmate, and the conditions under which infection is most likely to be spread are such as are obtained in houses which are dark, dirty, damp, the backyards of which are badly paved, and where overcrowding is not infrequent; intemperate habits also undoubtedly weaken the body, and render it more liable to be infected.

Action taken to prevent the spread of Phthisis.—The action which has been taken may be summarised as follows:—

(1) Cards have been printed and distributed warning persons against indiscriminate spitting.

(2) A Bye-law has been passed imposing a penalty on any person who shall spit on the floors, side, or wall of any public carriage, or of any public hall, public waiting room, or place of public entertainment.

(3) The Ladies' Public Health Society have had a leaflet printed, giving instructions for consumptives and those in charge of them.

(4) The officials of the Health Department arranged for the disinfection of any house or clothing used by consumptives on request.

During 1904 25 houses in which deaths from phthisis had taken place were visited, and disinfection offered and advised. In 11 cases the relatives' consent was obtained and disinfection carried out, and in 14 the relatives refused their consent on one pretext or another. In one instance the bed, without being disinfected, had been sent to an upholsterer to be unpicked and cleansed. In the majority of instances some precaution had been taken, the bed clothes and bed tick having been boiled, floors having been scoured, etc.

This cannot by any means be considered a satisfactory record. If the spread of phthisis is to be effectively dealt with notification must be systematic and regular, and contaminated houses and clothing must be thoroughly disinfected.

Again it must be borne in mind that to properly combat the infectiousness of a consumptive patient involves combating that infectiousness during the whole period of infection. The most important preventive measure is thorough disinfection of the expectoration or other discharges from persons suffering from the various manifestations of the disease. The patient should be impressed with the fact that he is a possible source of infection to others, and that it is quite within his power to control the spread of the disease from himself by attention to a few simple details that will in no way interfere with his comfort. If he be suffering from Pulmonary Consumption, the expectoration should be spat into covered vessels containing a disinfectant fluid, or into handkerchiefs that are afterwards disinfected. There are various other details that require attention, such as the scalding of bedclothing soiled by tuberculous sputum; he should be provided with his own eating utensils, etc., to be used by him alone, and these should be scalded immediately after use. Scrupulous cleanliness is required in the living and bed room; and under no circumstances should spitting be permitted.

"Dusting" should not be practised, but all cleansing should be effected by a cloth moistened with a disinfectant.

For the effective carrying out of compulsory disinfection all medical men practising in the town, it is suggested, should be provided with a form of certificate, which they should be requested to fill in on the termination of an illness, or the removal of a patient suffering from any infectious form of tuberculosis.

Examination of the Sputum of Consumptives.—During 1904 12 specimens of sputum were sent to the Lister Institute for examination, and tubercule bacilli were found in none. Bacilli not being present in a specimen does not disprove the diagnosis of tuberculosis. Several specimens should be sent before a negative opinion as regards the case can be given.

Diarrhœa.—By this term is meant those acute specific attacks of illness in which diarrhœa is the most prominent symptom, which occur in persons of all ages, but especially in infants and young children, towards the middle or close of a hot dry summer. The enfeebled in health appear to be especially liable to this disease, the immediate cause often being the consumption of tainted food or impure water. The presence or absence of diarrhœa in a community, as a cause of death, indicate the sanitary or insanitary condition of a District, and thus the diarrhœa death-rate frequently serves to shew the need of more efficient sanitary supervision being exercised by the Authority.

Macclesfield M. B.

In 1904 there were 24 deaths ascribed to diarrhœa. So large a number indicates the need of more sanitary measures in the localities where diarrhœa has most prevailed. Of those who died 15 were infants who had not completed their first year, and 8 were between one year and five years. On investigation it was found that 75 per cent. of the infants were bottle-fed. This is not surprising considering the many contaminations to which milk is liable, and that during the third quarter of the year the possibility increased a hundredfold.

For the reduction of the diarrhœa death-rate, the Sanitary Authority should do what can be done to secure the paving and draining of backyards, the abolition of privy-middens, and that all rooms are properly ventilated. Provision should also be made for keeping milk clean and sweet, and care should be taken that the milk is quite fresh and clean when delivered.

To do all this may be, and doubtless is, difficult, but if it could be done, it would not only diminish the diarrhœa death-rate, but improve the physical, mental and moral condition of the people.

As flies may be the means of infecting milk and other food, these should be stored so as to protect them from flies. Greater cleanliness should be exercised, especially in regard to infants and their clothing. When any one is suffering from diarrhœa, the excreta should be disinfected.

The importance of boiling all milk previous to use should not be forgotten.

In warm weather the streets and passages should be properly watered, with a view to cleanliness, and also to cool the air. The bottle used for feeding infants should be of a kind easily cleansed, and the long rubber tube should under no circumstances be used.

Cancer.—The number of deaths from cancer was 37, i.e., 1.06 per 1000 living. This disease seems to be claiming an increasing number of victims. At present the Authority is helpless to prevent its spread; however, it certainly seems desirable that rooms in which people suffering from cancer have lived and died should be cleansed and disinfected.

Disinfection.—The Medical Officer of Health has commenced using formic-aldehyde spray for the disinfection of premises. A 5 per cent. solution of formalin in water is used (formalin being a 40 per cent. solution of formic-aldehyde gas in water). Spraying appears to be a better way of disinfecting than mere ærial disinfection by sulphurous acid gas, or formalin vapour. The routine method of disinfection now is, to remove from the room all the bedding, clothing, etc., to the Thresh-disinfector, then to liberally spray the room, and afterwards to leave a formalin lamp burning in the room for some hours.

The Thresh-disinfector has proved most valuable. In the early part of the year it is difficult to conceive what would have been done without it. The following is a list of the articles dealt with :—

Number of beds disinfected by steam	324
,, pillows disinfected by steam	509
,, blankets and counterpanes disinfected by steam	418
,, carpets, etc., disinfected by steam ...	337
,, articles of clothing disinfected by steam	9932

The Isolation Hospitals.—Separate provision is made for the isolation of small-pox and of other cases of infectious disease. There were in all 85 patients admitted during 1904. Fifty-two (3 being from Bollington) were suffering from small pox, 29 were suffering from scarlet fever and 3 from diphtheria. One doubtful case makes up the 85. In one instance a woman was admitted with her child. Of the 85 patients, 6 died, viz. : 4 (including one Bollington patient) from small-pox, 1 from scarlet fever, and 1 from diphtheria.

There remained in Hospital on December 31st, 1904, 5 cases of small-pox and 7 cases of scarlet fever.

All the patients were professionally attended by the Medical Officer of Health, necessitating many hundreds of journeys to the Hospitals. Twelve nurses and 11 maid servants were employed at different periods of time at both Hospitals. In all 4,184 daily diets had to be provided for patients, nurses, and servants. The total cost of food for the two Hospitals in 1904 (exclusive of soda water and stimulants) was £227 10s. 10d. ; that was about 1s. 1d. per day. The cost of stimulants was £5 2s. 6d. The cost of drugs and appliances was £44 3s. 1d. Thus the entire cost of food, stimulants, drugs and appliances, was very moderate.

The value of these hospitals lies primarily, not in the work they accomplish, but in the prevention of the spread of disease. When an infectious disease becomes seriously epidemic, it shows that the hospital has failed to carry out its prime object—the checking of its spread in the early stage.

The Medical Officer of Health has not been able to discover any "return cases," although they have been most carefully looked for. The Sanitary Authority protect themselves by giving to the child's parents or guardians a signed notice that the Corporation will not be liable for future infection after the child's discharge from hospital.

Cost of Medical Attendance—The Medical Officer of Health receives £20 per annum for attendance on the patients, 82, after deducting the Bollington patients. The

cost was, therefore, about 4s. 10d. per case, or a few pence per day for each patient.

Cost of Nursing.—This has been excessively heavy, and might easily be reduced. Under present arrangements nurses are engaged as required from private Nursing Homes. Nurses for infectious diseases other than small-pox cannot be engaged for less than two guineas a week, and nurses for small-pox cases require three guineas a week. It would be much more economical, and very materially conduce to the better working of the general Isolation Hospital if there were two assistant nurses, one to take charge at night and one to help the Matron during the day, and to be on duty during her occasional necessary absence from the hospital. One permanent Assistant Nurse has been engaged, at a salary of £30 per annum, and has so far proved satisfactory. However, the Matron and one Assistant, are quite insufficient to nurse more than four or five cases of one infectious disease. As a minimum there should be two permanent Assistant Nurses. The Hospital provides 26 beds and 6 cots, and can isolate simultaneously three varieties of infectious disease.

There is also the small-pox hospital, having two wards, each furnished with 6 beds.

Conditions as to admission of Patients.—As mentioned in the Report for 1903, a joint committee consisting of members of the Health and Finance Committees, met to consider the arrangements as to charge for maintenance of patients in the hospitals. It was resolved that the Council be recommended not to make any charge, in future, for the maintenance and treatment of persons suffering from small-pox, other than the cases received on behalf of public authorities.

It was also resolved that the Council be recommended not to make any charge for infectious cases admitted to the Isolation Hospital, where, in the opinion of the Medical Officer of Health, there is not proper lodging or accommodation for isolation at home with the exception of cases admitted on the request of any person who undertakes to pay.

The conditions upon which cases are received into the Small-pox Hospital from the Workhouse was decided earlier in the year 1903, as follows:—

That, provided the Medical Officer of Health considers there is sufficient accommodation, the terms for allowing cases arising within the Workhouse to be treated at the Small-pox Isolation Hospital be one guinea per day per case.

Value of Vaccination.—Of the 4 patients who died of small-pox during 1904, two had not been vaccinated at all, and

two had been vaccinated in infancy only. There were 6 nurses and 5 maid servants, at one or other time in close attendance on the patients, and not one developed small-pox, as all had to submit to vaccination, or produce evidence of efficient vaccination within the last five years.

Observation Ward and Contact Shelter.—Attention is again drawn to the need of a proper observation ward, where doubtful cases can be kept for a few days, until a decision can be given thereon. During 1904 two cottages were purchased on a plot of land adjoining the site of the Small-pox Hospital, in Moss Lane. It is proposed to fit up one for use as an observation hospital, and to use the other as a "contact shelter."

Improved Ambulance needed. — Throughout the epidemic in 1904, the removal of patients was effected by means of an old "family bus," or by borrowing from the Guardians a vehicle resembling a hearse. Under such conditions patients, however ill they might be, have been taken to hospital. "In the interests of common decency, humanity, and for the credit of the Borough, a modern up-to-date ambulance is needed." The strongest objections made to the removal of patients to hospital have arisen in consequence of the miserable arrangements made for removal. A new ambulance should be obtained, and the machine now in use would be of service for the removal of infected clothing, bedding, &c., to the disinfector.

The Water-supply has been abundant and unrestricted during the whole year. Samples have been taken and submitted to chemical and bacteriological analysis. It must always be borne in mind, when considering the relative value of these analyses, that the chemical analysis gives no indication of specific pollution, and that only the bacteriological examination actually shows the number of organisms, and their kind, present in the waters. The waters submitted for examination were from three sources :—

(1.) Town's water, collected from a tap at the Town Hall, and being the water as supplied to the town generally.

(2.) Hollins Road water. This is water which has undergone a certain amount of purification by sedimentation in the Langley reservoirs ; but has not (like the town's supply) passed through the filter beds. Only a few houses receive this water.

(3.) Hurdsfield water is a private supply, which is distributed up Hurdsfield Road and to some houses in Commercial Road.

The Report received from the Lister Institute of Preventive Medicine on the examination of the 3 samples which reached the Institute on May 11th, 1904, is as follows :—

Macclesfield M. B.

No. 1.—Town's water.

Total number of organisms growing on agar at 20° C.—count on 6th day ...	60 per c.c.
Organisms of an intestinal type were found in ... ... but not in 50 c.c.'s. or less.	140 c.c.'s.

No. 2.—Hollins Mount water.

Total number of organisms growing on agar at 20° C.—count on 6th day ...	300 per c.c.
Organisms of an intestinal type were found in ... ... but not in 10 c.c. or less.	25 c.c.

No. 3.—Hurdsfield water.

Total number of organisms growing on agar at 20° C.—count on 6th day ...	200 per c.c.
Organisms of an intestinal type were found in ... ... but not in 1 c.c. or less.	10 c.c.

The Town's water shews great improvement when compared with the results obtained previously, but the water from Hollins Mount and Hurdsfield seem to be in the same condition as they were when the last examination was made.

The Report received from the Borough Analyst on his analysis of samples taken on April 27th, 1904, is as follows :—

No. 1.—Town's water.

Chlorine combined ...	1.34	in 100,000 parts of water.
Ureal Ammonia	0.028	,, ,, ,, ,,
Albuminoid Ammonia ...	0.002	,, ,, ,, ,,
Nitrogen as Nitrates, etc.	0.0367	,, ,, ,, ,,
Oxygen absorbed from permanganate of potash in 4 hours	0.142	,, ,, ,, ,,
Hardness	7.2	degrees.
Total solids	8.7	,,
Mineral solids	5.9	,,
Volatile solids	2.8	,,

No. 2.—Hurdsfield water.

Chlorine combined ...	1.5	in 100,000 parts of water.
Ureal Ammonia	0.002	,, ,, ,, ,,
Albuminoid Ammonia ...	0.002	,, ,, ,, ,,
Nitrogen as Nitrates, etc...	0.0640	,, ,, ,, ,,
Oxygen absorbed from permanganate of potash in 4 hours	0.112	,, ,, ,, ,
Hardness...	11.7	degrees.
Total solids	17.0	,,
Mineral salts	14.3	,,
Volatile salts	2.7	,,

No. 3.—Hollins Mount water.

Chlorine combined ...	1.2	in 100,000 parts of water.
Ureal Ammonia	0.0020	,, ,, ,, ,,
Albuminoid Ammonia ...	0.0120	,, ,, ,, ,,
Nitrogen as Nitrates, etc...	0.0498	,, ,, ,, ,,
Oxygen absorbed from permanganate of potash in 4 hours...	0.114	,, ,, ,, ,,
Hardness	7.0	degrees
Total solids	8.6	,,
Mineral solids	5.7	,,
Volatile solids	2.9	,,

The Borough Analyst, commenting on these results, says :—

"These three waters are free from odour or taste. They are neutral. No poisonous metals were present. Samples No. 1 and 3 (Hurdsfield and Town's water) contain a slight sediment.

"I am of opinion that these waters are of excellent quality, and well suited for all purposes."

The Purification of Water by Copper Salts.—During 1904 some attention was given to the use of copper salts in purifying water from low forms of vegetable life.*

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* This question was the subject of a paper by Dr. Hewlett, Professor of Bacteriology of King's College, London, read at a recent Sanitary Congress. The paper was entitled "The use of Copper Salts for the purification of water." A few brief extracts from this paper are appended.

"The announcement has been made by George Moore, of the scientific staff of the United States Government, that it is possible to make use of copper salts, preferably copper sulphate, for the purification of water-supplies from algal growths and also from bacterial contamination, such as by the typhoid bacillus, and this without the slightest danger to the human organism from the copper. Dr. Moore's investigations, if they should be confirmed, will be of the greatest practical value, not only to the hygienist, but also to the engineer.

"Fresh water algæ, but only about a dozen species, are troublesome in water supplies. Of all the substances tested for purifying water from fungi, algæ or allied forms, copper sulphate proved to be the most efficient, acting in dilutions of from 1 in 10,000,000 to 1 in 50,000,000, and this suggested trying this agent on the large scale to see whether it would be effectual, and also what might be its action on the higher forms of vegetable life. The first trial was n some water-cress beds in Virginia which were becoming overgrown with algæ. Copper sulphate in the proportion of 1 in 50,000,000 was added to the water of the beds, with the result that the algæ was all killed, and the bed completely freed from it while the watercress was uninjured.

"Copper salts are, as is well known, markedly poisonous, and the important question arises as to whether copper sulphate in the proportion named (1 in 100,000) would be deleterious. In the first place, a solution of such strength is quite tasteless and colourless; secondly, in water which has had copper sulphate added to it, and has been allowed to stand, no trace of copper can be detected (500 c.c. of the treated water was tested for the presence of copper). The copper is quickly precipitated as a hydrate and carbonate, and perhaps also in an organic combination, so that after sedimentation the whole of the copper is removed from the water.

"Goldfish and minnows are not affected by solutions of copper of a strength of 1 in 200,000, and, in general, animal life seems to be less susceptible to the injurious effects of copper than plant life.

"There can be no question, however, that the whole matter requires re-investigation."

Refuse Removal.—The major part of the night-soil and dry-ash refuse is deposited in the Dane Moss tip, and a certain quantity is sold to farmers. The danger of all tips in the neighbourhood of towns is, that as the area of a town increases, these muck-heaps often become the sites for building long before natural agencies have succeeded in purifying the "made soil." The contents of the dust bins and dry-ash pails are removed once a week. A more frequent removal is needed during the summer months, particularly in the more congested parts of the town.

The number of loads of night-soil removed, and the cost of removing it in the ten years 1895–1904 is given below :—

Year.	Number of Loads.	Expenditure.
1895	12,289	£1.652 16 8
1896	12,407	£1,807 12 6
1897	13,283	£2,006 2 3
1898	13,619	£2.104 2 4
1899	13,040	£2,169 16 10
1900	12,057	£2,093 10 0
1901	11,215	£2,425 4 2
1902	12,532	£2,334 10 9
1903	11,912	£2,260 10 5
1904	10,371	£1,999 6 4

The expenditure includes the cost of the Dane Moss Farm.

Numerous and repeated complaints having been received during 1904, as to the unsatisfactory way in which privy-middens were emptied, the Sewage and Night-soil Sub Committee resolved to offer the work for tender. A tender to empty and cleanse privies and ashpits for three years from October 1st for £500 per annum, and to cart night-soil, offal and other refuse from the Borough for £676 per annum was accepted. The Medical Officer of Health expresses his opinion that, from a sanitary point of view, it is most unsatisfactory to do this work by contract.

Privy-middens and their abolition.—During 1904 there were 182 privy-middens converted into water-closets. The following tabular statement shews that the number of water-closets in the town is being annually increased, but it also shows the large proportion of houses in the Borough at which the sole sanitary accommodation provided is the privy-midden.

Year.	No. of Privy Closets.	No. of Waste-water Closets.	No. of Clean-water Closets.
1897	4,319	260	674
1898	4,157	301	710
1899	3,942	309	815
1900	3,862	309	940
1901	3,825	309	1,038
1902	3,705	309	1,205
1903	3,569	309	1,378
1904	3,387	309	1,628

During the year an effort was made to oppose the policy of substituting water-closets for privy-middens, and strong opposition was brought to bear in a case which was taken before the magistrates, the opposers being principally interested property owners and their tenants. Several persons were produced as witnesses for the defence, who swore that a large privy-midden which served a common lodging-house and some other dwelling-houses situated in a confined back-yard, was not a nuisance. However, the magistrates found that it was a nuisance, and ordered it to be removed and water-closets substituted. This has been done, greatly to the improvement of the neighbourhood, and to the satisfaction of the people who actually opposed the change.

Since this case was decided there has been much less opposition from property owners.

Sewering.—During 1904 the following streets were sewered :—

(1) Chester Road, from Pinfold Street to Anderson Street.
(2) Half Street, from Pitt Street to High Street.
(3) Bridge Street, from Mill Lane to Lowe Street.
(4) Clowes Street, from Main Sewer to William Street.
(5) William Street (short length.)
(6) Black Lane (re-laid short length.)

The Sewage Disposal Works.—During 1904 a Local Government Board Inquiry with reference to an application of the Town Council for sanction to borrow £14,000 for alterations and extensions at the Sewage Disposal Works at Butley, and sanction was obtained. This important work was commenced in August, 1904.

Housing of the Working Classes.—The Medical Officer of Health made a representation to the Health Committee that the following buildings are in a state so dangerous or injurious as to be unfit for human habitation.

Nos. 1, 2, 3, 4, 5, and 6, Court 1, Princess Street.
Nos. 3, 4, and 5, Court 3, King Street. No. 4 is at present used for storing.
Nos. 5, 6, and 7, Court 4, King Street.

The Health Committee visited and inspected the property, and it was subsequently resolved that notice be given to the owners in the form prescribed by the Housing of the Working Classes Act, 1890, to make such buildings fit for habitation within two months. All the houses were afterwards closed.

Common Lodging-Houses.—During 1904 there were 399 visits paid to these houses. The number of nightly lodgers accommodated in 1904 was 34413, in 1903 the number was 31406.

No steps have been taken to provide a Municipal Common Lodging-house, although one is much needed.

Factory and Workshop Act, 1901.—This Act came into force on January 1st, 1902. The Medical Officer of Health does not consider the provisions of the Act are as fully carried out as they should be, and is of opinion that this may be due to the fact that the Town Council have not yet by resolution definitely deputed anyone to carry out the sanitary provisions of the Act. The Sanitary Inspector has made 172 visits of inspection to Factories and Workshops during 1904, but this, as is pointed out, cannot be sufficient sanitary supervision.

There are in the Borough 136 workshops all duly registered. As the result of inspection 2 were found in an uncleanly condition, and, after notice, both were put in order. In one the sanitary accommodation was insufficient and this also was put in order. At three workshops the sanitary accommodation was defective, the owners of two removed the defects, the owner of a third was prosecuted, and the required alterations are in hand.

Dairies, Cowsheds and Milkshops.—There are 71 persons registered as cowkeepers or milksellers in the Borough. All these have been visited to see that they are kept in a cleanly state and periodically whitewashed.

Slaughter-houses.—There are 27 slaughter-houses and premises used for tripe-dressing in the Borough, all under regular inspection. During the year 2 slaughter-houses have been put in repair, and one has had the floor re-laid.

In three instances the middens have been repaired, and reduced in size. Two persons were cautioned for slaughtering animals in un-registered premises.

Unsound Food.—There were 163 lbs. of fish and 50 lbs. of mutton submitted for inspection, and destroyed as unfit for human food. About 2580 lbs. of beef, 112 lbs. of veal, and 25 lbs. of lamb were submitted for inspection and passed. One person was prosecuted and fined £5 and costs for attempting to prepare for human food the belly and feet of a cow unfit for food.

Sale of Foods and Drugs Act.—A large number of samples were taken for analysis in 1904, they were as follows:—30 milk, 24 butter, 14 cheese, 11 coffee, 3 bi-carbonate of soda, 3 pepper, and 1 turpentine, 2 port wine. One sample of milk was adulterated with 5 per cent. of added water, and the seller was summoned accordingly, but the case against him was dismissed. Two samples of coffee from the same shop were adulterated with 30 per cent. of chicory, and one summons was taken out against the vendor, who was fined one shilling and cost.

New Houses.—During the year plans for 43 houses were submitted and passed.

Nuisance Abatement.—Mr. Williams Jenkins, the Sanitary Inspector, reports fully on matters coming within his department. His Report on nuisance abatement shows that much useful work has been done. In all 710 nuisances were satisfactorily abated, and 693 nuisances have been entered on the books, and are being dealt with, of which 433 were discovered by the Inspector, and 260 were complained of. There were 698 preliminary notices and letters sent in connection with this work. Sixty statutory notices were served, and four persons were summoned for not complying with the notices.

The occupiers of 61 dirty houses have been made to cleanse houses, furniture and bedding, and 3 nuisances due to overcrowding have been abated. Three cases of smoke-nuisance were reported and dealt with.

The Inspector has cautioned fishmongers and greengrocers not to put offal in the ashpits or to throw it in the streets or back-passages. Bad fruit thus thrown away may be eaten by little children.

Canal Boats.—The Inspector inspected 72 boats, 60 of which complied with the requirements of the Acts and the regulations made thereunder. On 2 boats there was no certificate of registration. One certificate did not identify the boat with the owner. On 2 boats the mark was obliterated, 2 boats had dilapidated cabins, one boat required painting, and 4 had no proper water vessels. A notice was sent the owner in each case, and the requirements were carried out. The 72 boats were registered to accommodate 217 adults and 1 child. There were on the boats 164 adults and 1 child.

STALYBRIDGE

Municipal Borough.

Medical Officer of Health— Dr. F. J. Roberts-Dudley.
Population at Census, on April 1st, 1901—27,673.
Estimated Population in middle of 1904—28,415.
Area in acres—3,130.
Birth-rate per 1,000 living—23.7.
Death-rate per 1,000 living—18.6.
Death-rate from seven principal Zymotic Diseases—3.1.
Deaths under one year to 1,000 births—210.

This Borough is divided into four Wards, the population of which, as enumerated at the Census in 1901, was as follows:—

Dukinfield Ward	...	...	7,907
Lancashire Ward	...	...	5,983
Millbrook Ward	...	...	4,039
Staley Ward	...	...	9,744

The population was 26,783 at the Census in 1891, and 27,673 at the Census in 1901. The increase in the population during the decennium 1891-1901 was thus 890, that is 3.3 per cent. The estimate of the population made for the middle of the year 1904 is 28,415.

The births registered in the Borough, during the year ending December 31st, 1904, numbered 675. The deaths of persons belonging to the Borough during the same period, numbered 529. The deaths include 33, which took place in the Workhouse, Ashton-under-Lyne, 10 deaths at the Infirmary, and 4 deaths at the Ashton-under-Lyne Borough Hospital. The birth-rate is about 3 below the average in the ten years, 1894-1903, and the death-rate is 3.2 below the average in the same ten years.

The death-rates in the four Wards were as follows:—

Dukinfield Ward	...	...	17.8
Lancashire Ward	...	...	16.4
Millbrook Ward	...	...	11.4
Staley Ward	...	...	18.1

There were 90 deaths from the principal zymotic diseases, viz., 4 small-pox, 48 measles, 3 scarlet fever, 6 whooping-cough, 8 diphtheria or membranous croup, 6 enteric fever, and 15 diarrhœa. There was 1 death from erysipelas, and there were 21 deaths from enteritis. There were 32 deaths from phthisis, and 3 from other forms of tubercular diseases, 20 from cancer, 97 from bronchitis, pneumonia, and other diseases of the respiratory organs, 2 from alcoholism or cirrhosis of the liver, 8 from premature birth, 3 from diseases and accidents of parturition, and 42 from diseases of the heart.

Mortality of Infants.—Among those who died in 1904 were 142 infants under one year old. This is equal to 210 per 1,000 births. The proportion in this Borough during the ten years, 1894-1903, was 206 per 1,000 births. The number of deaths of infants under one year of age to each 1,000 births registered in 1904, in the four Wards of the Borough, were as follows:—

Dukinfield Ward	...	...	201
Lancashire Ward	...	...	210
Millbrook Ward	...	...	100
Staley Ward	...	...	234

Thus the general death-rate and infant mortality rate of Millbrook Ward are very much lower than in the rest of the Borough.

Stalybridge M. B.

The Medical Officer of Health states that no one can deplore more than he does "this awful slaughter of the innocents." On many occasions during past years has the subject occupied the attention of the Sanitary Committee of the Borough. He again calls attention to the instructions to mothers on the feeding of their infants, &c., issued by the Sanitary Committee.

Handbill on the Management and Feeding of Infants.—A copy of the following handbill is given by the Registrar to each person registering a birth. The Medical Officer of Health hopes that as mothers become more alive to the interests and welfare of their infants the high infant mortality will diminish.

BOROUGH OF STALYBRIDGE.

The Sanitary Committee of the Borough of Stalybridge recognising how largely dependent upon improper feeding and unskilful management is the

HEAVY MORTALITY OF INFANTS

in the Borough, make the following recommendations, which they trust may be of service to all those who have the care and rearing of infants.

MANAGEMENT OF INFANTS.

1—Wash the child all over in warm water every day, and dry it thoroughly.

2—Let the clothing be warm and loose. Soft flannel should be worn next the skin.

3—Let the child have plenty of fresh air. Open the windows and air the rooms every day, and send or take the child out as often as you can (when the weather is fine), but in Winter—from November to April—only for a short time in the middle of the day.

4—The Committee especially wish to call attention to the great danger in taking young children to and fro in the early morning and the late evening to be nursed, and where this is unavoidable, see that the greatest care is taken against all exposure to cold.

FEEDING OF INFANTS.

5—Let all food be given at regular times and in regular quantities.

6—If possible, let the child have nothing but the breast until it is seven months old, and then begin to wean it, and wean it entirely before it is a year old.

7—If the child cannot be suckled, feed out of a bottle on warm milk and water slightly sweetened with lump

sugar. Wash the bottle with hot water every time it has been used; brush the tube and teat twice a day, and keep all parts in clean cold water. See that it draws easily. Be careful to see that the milk is not sour. At first give the child half milk and half water—half a breakfast cupful every two hours. When a month old give it two parts of milk to one of water—one cupful every three hours; and gradually lessen the quantity of water until the child is six months old, when it may take pure milk. If the milk does not agree, try boiling it, or add a spoonful of lime-water to it.

8—Give the child no other food until it is seven months old, when it may have, besides the milk one or two meals a day of milk thickened with well boiled bread, oatmeal, or any of the recognised infants' foods. The food must be thin enough to pass through a fine strainer.

9—When good fresh milk cannot be obtained, condensed milk can be used instead, one teaspoonful to four teaspoonfuls of water will be sufficient for infants up to three months when the quantity of condensed milk should be gradually increased up to two teaspoonfuls for children of six months and over.

10—Children should not be allowed to eat any solid food until they have cut their double teeth.

11—All food should be freshly prepared for every meal.

12—Never give any child beer, wine, spirits, new bread, or unripe fruit, and never give it such things as "soothing syrups."

Special attention is called to the fact that "convulsions" and "wasting" are the most common causes of death among infants, and are most often brought on by improper feeding, hence the necessity of suitable food.

By order of the Sanitary Committee,

JNO. MILLER,
Town Clerk.

19th July, 1904.

Infectious Disease notified.—There were 145 cases of infectious disease notified, viz., 13 small-pox, 9 diphtheria, 6 membranous croup, 19 erysipelas, 80 scarlet fever, 17 enteric fever, and 1 puerperal fever.

The compulsory notification of cases of infectious disease has given serviceable direction to much of the work of general inspection in the Borough. All premises in which cases of infectious disease are reported are at once visited by the Medical Officer of Health and Inspector of Nuisances, and many sanitary defects are thus discovered and remedied

Stalybridge M. B.

Small-pox.—All the cases were promptly removed to the Small-pox Hospital, situated in the grounds of the Ashton-under-Lyne Borough Hospital. The houses from which these patients were removed were then fumigated, and the bedding, &c., was burned. The inmates of the houses were re-vaccinated, and kept under observation for a fortnight.

Of the 4 who died of small-pox, 2 were unvaccinated infants. No second case occurred in any of the houses, "showing that there is only one way of stamping out small-pox, and that is by vaccination and re-vaccination" The Sanitary Committee met and approved of all that had been done to prevent the spreading of the disease, and ordered the following handbill to be delivered at every house in the neighbourhood where the outbreak of small-pox occurred :—

Handbill on Small-pox and Re-vaccination.—

PUBLIC NOTICE.

SMALL-POX.

Any person who—

(1) While suffering from any dangerous infectious disorder wilfully exposes himself without proper precautions against spreading the said disorder in any street, public place, shop, inn or public conveyance, or enters any public conveyance, without previously notifying to the owner, conductor, or driver thereof that he is so suffering ; or

(2) Being in charge of any person so suffering, so exposes such sufferer ; or

(3) Gives, sells, lends, transmits, or exposes, without previous disinfection, any bedding, clothing, rags, or other things which have been exposed to infection from any such disorder, shall be liable to a penalty not exceeding FIVE POUNDS, and proceedings will be forthwith commenced against all persons offending in this respect, and the full penalty enforced as far as possible.

NOTE.—This disease is chiefly spread by NEIGHBOURING, and all persons are hereby WARNED against this practice.

The Sanitary Committee particularly request that all persons suffering from small pox be kept indoors and warm, as cold is the chief cause of death from this disease. When small-pox exists in any house, children in such house are prohibited from attending school.

RE-VACCINATION.

Vaccination and Re-vaccination are the only safe-guards against taking the disease.

The Statistics of the last Sheffield Epidemic of small-pox prove this fact beyond doubt.

Out of 20,000 persons who had been re-vaccinated, no deaths oocurred.

Out of 15,000 persons who had not been vaccinated, 97 deaths occurred, or 64 deaths per 10,000 inhabitants.

In other words, there were ten times as many deaths amongst those who had not been vaccinated, as amongst the vaccinated, whilst those who had been re-vaccinated were free from deaths.

Dr. R. Thorne Thorne, late Chief Medical Officer of the Local Government Board, Whitehall, London, says in his official circular, dated August 26th, 1892—"Where small-pox is the prevailing disease, it is essential that all un vaccinated persons (unless they previously have had small-pox) should very promptly be vaccinated; and that re-vaccination should be performed in cases properly requiring it."

The Sanitary Committee are anxious that all persons within the Borough should be re-vaccinated, according to the requirements of the Local Government Board, and to facilitate this course being taken, they have made arrangements whereby any person can be re-vaccinated from Calf Lymph, free of charge, on applying to any of the Medical Practitioners in Stalybridge.

By Order of the Sanitary Committee.

F. J. Roberts-Dudley,
Medical Officer of Health for the
Borough of Stalybridge.

Town Hall, Stalybridge.

The Medical Officer of Health reprints this handbill in full in his report in the hope that other towns, where small-pox occurs, will follow the example of Stalybridge, and make, for the time being, at any rate, all Medical Practitioners, Public Vaccinators. In presence of small pox people willingly go to their own Medical men to be re-vaccinated, but will not go to the Public Vaccinator appointed by the Guardians of the Poor. Since the Sanitary Committee adopted this course, many years ago, they have never failed to stamp out small-pox at once, when it has been imported into the Borough.

Small-pox Hospital.—Stalybridge has now a Small-pox Hospital, situated at Hartshead, and managed by the Ashton-under-Lyne District Joint Small-pox Hospital Board, on which Stalybridge is represented by two members.

Measles.—Although this is not one of the diseases required to be notified, 48 deaths occurred therefrom. In August the Local Government Board requested the Medical Officer of Health to make a Special Report on these deaths. The following is a copy of the Report sent to the Board:—

Stalybridge M. B.

Sanitary Department,
Stalybridge, 31st August, 1904.

To the Chairman and Members
of the Sanitary Committee.

Gentlemen,

Referring to the communication, dated the 16th of August inst., received from the Assistant Secretary of the Local Government Board, relative to the 40 deaths from Measles, which occurred within the Borough of Stalybridge during the quarter ended the 2nd July last, I have the honour to report as follows :—

That as previously reported by me, an epidemic of Measles arising from some unknown cause appears to have visited Stalybridge each alternate year during the last ten years, as will be seen from the following figures :—

Deaths :

1894,	1895,	1896,	1897,	1898,	1899,	1900,	1901,	1902,	1803,
3	49	5	43	19	32	14	0	32	1

I have already, under your instructions, asked for the assistance of the School Attendance Officers, and they have been requested to report to me any cases of Measles which may come to their knowledge, in order that I may at once inspect the premises in which the persons affected reside, and take such action as may be considered necessary with a view to prevent the spreading and recurrence of the disease.

Although 40 deaths have occurred from Measles during the quarter ended the 2nd July last, there have only been eight deaths notified to me during the month of July last, and two deaths notified during the month of August instant.

I would further beg to refer the Committee to the fact that only one death from Measles occurred during the whole of last year.

Although the sanitary condition of the Borough has undoubtedly been lately improved generally, still it is not only very advisable, but also really necessary, that greater care should be exercised by the parents of children suffering from this disease, by carrying out more vigilantly than at present the requisite sanitary arrangements, and cleanliness, in some of the homes in which the children affected live, in order that the present large number of deaths may be materially reduced.

F. J. ROBERTS-DUDLEY,
Medical Officer of Health for the Borough of Stalybridge.

The Board acknowledged the receipt of this Report, but said they did not find therein information as to the manner in which the disease spread, and as to the measures adopted to prevent its spread ; and requested the Medical Officer of Health to

furnish the Board with this information. To this communication the following reply was sent :—

Enville House, Stalybridge,
10th September, 1904.

To the Chairman and Members
of the Sanitary Committee.

Gentlemen,

Referring to the communication, dated 9th September, 1904, received from the Assistant Secretary of the Local Government Board relative to the manner in which Measles is spread, and as to the measures adopted to prevent the spreading of the disease, I beg to say :—

1.—Measles is an epidemic disease that appears in Stalybridge almost without exception every two years, and is spread chiefly by ærial infection, and also by contagion from child to child.

2.—The measures adopted to prevent the spreading of Measles were as follows :—I called at all the schools and advised the schoolmasters and schoolmistresses to pay particular attention to the children's health, and if they saw any of the children appeared to be ill, to send them home at once. I also asked the Education Committee to allow their Visiting Officers to notify all cases of Measles coming to their notice, so that I could visit the houses and examine as to their healthy condition or otherwise, and also to advise the mothers to pay particular attention to their children when they were suffering from the disease. I do not see that I could do more in the absence of an Infectious Hospital to remove the children suffering from Measles, and I question very much whether this would have in any degree stayed the epidemic.

I have never, after 30 years' experience as a Medical Officer of Health, thought it advisable to recommend to my Committee the closing of schools on account of Measles, for the children come in contact with one another just as much in their homes as they do at school.

The Visiting School Officers have not reported a case of Measles for the last two weeks, and we have had no death for the last four weeks.

However perfect our Sanitary arrangements might be, I believe Measles would come just the same, and the great number of deaths that always occur during an Epidemic of Measles arises from the ignorance of mothers in not looking after their children in the early stage of Measles.

F. J. ROBERTS-DUDLEY,

Medical Officer of Health for the Borough of Stalybridge.

Diphtheria and Membranous Croup.—Of the 13 cases notified, 8 proved fatal, *i.e.*, 61.5 per cent. of the known patients died.

Scarlet Fever.—Of the 80 cases notified, 3 proved fatal, *i.e.*, 3.13 per cent. of the known patients died.

Whooping-cough.—The number of cases is not known. There were only 6 deaths in 1904. There were 19 deaths in 1903, and an average of 15 per annum in the ten years 1893-1902.

Enteric (or Typhoid) Fever.—There were 17 cases of this disease notified, of which 6 proved fatal. *i.e.*, 35.5 per cent. of the known patients died.

The Medical Officer of Health remarks that typhoid fever exists in the Borough, in an intermittent form, all the year round. He believes, as he stated in his previous Annual Reports, that the cause is "the old-fashioned privy and ash-pit which exists so extensively" in the Borough. The "arrangement is universally condemned by all Medical Officers of Health and by the Local Government Board, and the chief ground of condemnation is, that the accumulation of filth close to the back doors of cottage houses must be, and is, detrimental to the health of the people." Some of the old privies have been converted into water-closets during the year, and others are in course of conversion. No less than 607 privies have been altered during the seven years 1898—1904, and of these 211 privies were converted in 1904. Now that the main drainage is completed the Sanitary Committee will be in a position to deal satisfactorily with the large number of old privies remaining.

Mr. Bradbury, the Inspector of Nuisances, sees that all ashpits, in connection with property where typhoid fever has been notified, are emptied at once, and the walls and all surroundings washed with the following solution :—

One ounce of corrosive sublimate.
One ounce of hydrochloric acid.
Four grains of aniline blue.
Three gallons of water.

On receipt of a notification of typhoid fever, a pail hermetically sealed, is supplied to each house to receive all discharges from the patient, and the following special instructions are left at each house, viz. :—

BOROUGH OF STALYBRIDGE—HEALTH DEPARTMENT.

TYPHOID FEVER INSTRUCTIONS.

1. A person suffering from typhoid fever should, if possible, be placed in a separate room, and all unnecessary furniture and articles must be removed.

2. The room must be thoroughly ventilated and disinfectants freely used.

3. No person must enter the room except those attending upon the patient, and such persons must keep their hands thoroughly clean.

4. All discharges from the patient must be at once disinfected, by chloride of lime being freely put into the utensil receiving the discharges, and the discharges, whether arising from vomiting or otherwise, must be fully covered over with the chloride of lime.

5. All bed-clothes and body-linen taken from the patient must, before removal from the room, be forthwith placed in a tub or vessel containing water mixed with some disinfectant.

6. Any food left by the patient must be burned at once.

7. Disinfectants and all necessary assistance to carry out these instructions will be given free of charge by the Corporation Officials.

8. All persons failing to carry out the above requirements are liable to heavy and serious penalties.

F. J. ROBERTS-DUDLEY,

Medical Officer of Health
for the Borough of Stalybridge.

Phthisis.—The number of deaths from phthisis was 32. This is equal to a death-rate of 1.12 per 1,000 living—a high death-rate.

Handbill of Instructions to Consumptive Patients, &c.—The Sanitary Committee, in March, 1904, issued the following handbill. This was distributed at all Factories and Workshops with a request that it should be placed in a prominent place, so that the workpeople might see that Phthisis was a distinctly infectious disease :—

This Handbill should be nailed up for reference.

BOROUGH OF STALYBRIDGE.

INSTRUCTIONS FOR CONSUMPTIVE PATIENTS AND THOSE ATTENDANT UPON THEM.

Consumption is an Infectious Disease which is usually communicated from person to person by the Phlegm coughed up by the Consumptive.

The great danger lies in the drying up of this Phlegm and its being scattered about as dust.

The breath of the consumptive is not directly infectious, but whatever is coughed up should be received into pieces of

rag or paper which should be at once burned, or into a vessel containing water, which vessel should be cleansed at least twice a day by pouring in boiling water, emptying the contents down the drains, and again scalding out the vessel with boiling water.

The Phlegm should on no account be swallowed, for so the disease may pass to other organs of the body.

Consumptive persons should avoid kissing and should not suckle.

Anything which has been in the mouth of a Consumptive person should never be used by another person until it has been thoroughly washed with boiling water.

Cleanliness in person and abode, along with fresh air and sunshine, are the best means of preventing and of aiding the cure of Consumption. Consumptives should therefore spend as much time as possible out of doors.

By day the Consumptive should occupy as airy and as bright a room as possible, and by night should sleep alone with the bedroom window open more or less, according to the season.

In cleansing rooms damp dusters should be used, and wet tea leaves or sawdust should be put down before sweeping, so that the dust will be removed without being spread through the air. The dusters should be boiled, and the sawdust or tea leaves burned.

Any clothing or bedding soiled with the Phlegm should, if possible, be washed with boiling water, or where this cannot be done should be thoroughly cleansed with a disinfectant.

Carpets and floors accidently soiled must have the Phlegm wiped up and burned, and then be cleansed with strong disinfectant.

Rooms which have been occupied by a Consumptive person should, before occupation by any one else, be carefully disinfected, as after other infectious disease, and this will be done by the Sanitary Authority on notice being sent to the Sanitary Inspector.

Persons attending upon Consumptives should thoroughly wash their hands after waiting upon them.

By order of the Sanitary Committee,

F. J. ROBERTS-DUDLEY,
Medical Officer of Health.

Town Hall, March, 1904.

Cancer.—There were 20 deaths from cancer, that is equal to 0.7 per 1000 living.

Stalybridge M. B.

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 Members of the Sanitary Committee.

The Infectious Disease (Prevention) Act, 1890, is in force in the Borough, having been adopted in July, 1891.

Water-supply.—The water-supply of the Borough is abundant and absolutely pure.

Sale of Food and Drugs Acts.—Under these Acts 40 samples were collected by the Chief Constable and sent for analysis. Ten samples were of milk, 9 of butter, 3 of tea, 2 of lard, 2 of coffee, 2 of pepper, 2 of cheese, and one each of mustard, barm, oatmeal, sago, sugar, golden syrup, ground rice, cocoa, jam and brandy. The Borough Analyst certified the articles of food, &c., pure, except certain samples bought as butter.

Proceedings were taken in 3 cases against one person, for selling margarine as butter, and he was fined £20 and costs in each case. The same person was fined £20 and costs for exposing margarine without being labelled as directed by law.

Insanitary Property.—A long list of houses reported in an insanitary condition is given by the Medical Officer of Health, in all of which sanitary improvements have been carried out, under the supervision of the Borough Surveyor.

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

Owing to the prevalence of small pox in neighbouring Districts in 1904 the Medical Officer of Health visited all registered lodging-houses weekly, and required each lodging-house keeper to furnish a list of persons resorting to the house on Sunday night.

Inspector's Report.—The Inspector, Mr. Bradbury, reports that during 1904 there have been 524 nuisances discovered or reported, and all have been dealt with. There were 70 smoke observations taken, and 16 notices were served for the abatement of smoke nuisances.

Refuse Removal.—During 1904 the number of loads of ashpit refuse removed was 7,113½. The number of emptyings effected was 31,675. This work is supervised by the Inspector.

Factory and Workshop Act, 1901.—In his Annual Report for 1902 the Medical Officer of Health gave an account of his inspection of all the Factories, Workshops, Bakehouses, &c., in the Borough. The premises then visited numbered 173, and a register was made. During 1904 most of these premises were visited, and found fairly clean and in order.

As regards air space, in workshops and workplaces notices must be exhibited in each room specifying the maximum number of persons employed therein. Each person in a factory or workshop must be allowed 250 cubic feet of air-space, or 400 during overtime. Last year very few of the occupiers of workrooms, &c., had complied with this requirement, but now most of them have done so.

All bakehouses in the Borough were twice inspected by the Medical Officer of Health, and found in a satisfactory condition.

In respect of closet accommodation, the Act requires every factory and workshop to have suitable sanitary conveniences, with separate provision for each sex, where necessary. In some instances this regulation is carried out, in other instances it is not. The Borough Surveyor has been supplied with a list of the premises requiring further sanitary accommodation, and will take steps to obtain it.

Provision of a Destructor.—During 1903 the Sanitary Committee had under consideration the provision of a destructor, and in October the Town Council unanimously agreed to the recommendation of the Committee to accept a tender to erect one. The necessary plans, specifications, etc., are now prepared, but the Local Government Board have raised objections to the site and the work has been delayed.

Proposed Disinfecting House.—The Sanitary Committee have also decided to erect a small house to contain a steam disinfector and bathroom, to give facilities for the thorough disinfection of persons who have been exposed to any infectious disease, and of their clothing. Delay has been caused in this matter also.

Slaughter-houses.—There are 15 slaughter-houses in use within the Borough, all of which have been visited at various times during the year.

Ten of these premises are not of an entirely satisfactory character, but taken as a whole they are kept in as cleanly and sanitary state as circumstances permit.

Canal Boats.—The Inspector, Mr. Bradbury, has during 1904 inspected 17 boats registered for sleeping accommodation.

On these boats were 33 men. No women or children were sleeping in any of the boats. During the year 2 notices were served for offences under the Canal Boats Acts. One boat was in want of repairs and another boat did not carry a certificate.

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 :—

1904.	Temperature.		Rainfall. 12 inches above ground.
	Maximum in Shade.	Minimum in Shade.	
January	43	34	2·77
February	45	33	3·67
March	53	34	1·17
April	53	40	2·22
May	50	44	1·96
June	63	47	1·35
July	71	54	1·31
August	64	50	3·71
September ...	61	50	1·03
October	56	44	1·81
November ...	46	35	2·86
December ...	42	32	2·88
			26·74

ALDERLEY EDGE

Urban District.

Medical Officer of Health—Dr. G. W. Dowling.
Population at Census, on April 1st, 1901—2856.
Estimated Population in middle of 1904—2916.
Area in acres—599.
Birth-rate per 1,000 living—22.6.
Death-rate per 1,000 living—12 6.
Death-rate from seven principal Zymotic Diseases—1.0.
Deaths under one year to 1,000 births—106.

The Urban District of Alderley Edge was formed by Local Government Board Orders, which came into operation on September 5th, 1894, and September 30th, 1895, respectively. The Urban District of Chorley was renamed Alderley Edge, and extended to include a further part of the Civil Parish of Chorley, the part of that parish within the Urban District, being renamed Alderley Edge by a County Council Naming Order.

The population of this Urban District was 2,856 at the Census in 1901, and the population of the same area was 2,281 at the Census in 1891. The increase in the population during the decennium 1891-1901 was thus 575, that is 25.2 per cent. The estimate of the population made for the middle of the year 1904 thus appears too low.

In 1904 the number of births registered was 66, and the number of deaths registered was 37. The birth-rate was 2.3 above the average birth-rate in the ten years 1894-1903, and the death-rate was 1.2 above the average death-rate in the same ten years.

Seven of those who died were infants under a year old, and 14 were persons upwards of 65 years old.

Three of the deaths were due to diarrhœa, one was due to enteritis, three were due to phthisis, one was due to other tubercular disease, two were due to cancer, seven were due to bronchitis or pneumonia, one was due to alcoholism, and ten were due to heart diseases.

Infectious Disease Notified.—There were 65 cases of infectious disease notified, viz.:—55 measles, 5 scarlet fever, and 5 erysipelas. Measles has been notifiable in this District since 1893. Five of the scarlet fever patients were removed to the Isolation Hospital at Baguley.

Influenza.—Several cases occurred during the year, but most of them were of a mild type.

Whooping-cough was prevalent during the latter portion of the year.

Alderley Edge U. D.

Diarrhœa.—Numerous cases occurred during the very hot weather. The three who died were all infants under a year old.

Measles.—The type of this disease appears to have been mild, as no fatal case occurred.

Diagnosis of Diphtheria.—The arrangements which were made in 1897 with Professor Delépine, of the Public Health Laboratory, Manchester, for the bacteriological examination of specimens taken from the throats of persons suspected of having diphtheria, have proved very satisfactory.

Antitoxin.—The District Council have authorised the Medical Officer of Health to keep a supply of this, so that if a case of diphtheria should be notified the antitoxin may be used without delay. A supply has accordingly been always ready.

Isolation Hospital Accommodation.—The Bucklow Joint Hospital Board on which Alderley Edge is represented have made arrangements for cases of infectious disease, other than small-pox, to be treated at the new Isolation Hospital at Baguley. The same Joint Hospital Board have also arranged for the isolation and treatment of cases of small-pox.

Water-supply.—The water for the District is supplied by the Stockport Waterworks Company. The supply was good in 1904, but complaints were occasionally received of discoloration. There are only a few houses in the District which have pump well supplies.

Dairies are registered and inspected, and were found in good sanitary condition in 1904. The new regulations have been in force since January, 1899.

Slaughter-houses have been inspected and found in proper sanitary condition.

Factory and Workshop Act.—Effect has been given to this Act. There are in the District 1 factory and 25 workshops. Of the latter four are occupied by joiners, two by cabinetmakers, ten by milliners, dressmakers, and tailors, seven by bakers and confectioners, one by a saddler, and one by a boot repairer. One case of overcrowding was remedied. There is one underground bakehouse, which should be closed if possible.

Refuse Removal.—The emptying of ashpits has on the whole been well done.

Insanitary Houses.—A few houses reported as unfit for habitation have been put into proper order.

Midden-privies.—During the year a few of these have been converted into water-closets and dry ashpits. In other cases ashbins have been provided, and are in use.

Sewage Treatment.—The filter beds appear to be acting satisfactorily. In the last Annual Report it was stated that plans were being prepared for the further improvement of the filter beds. These plans have since been completed and approved. The contract for the work required has been let, and the work commenced.

Disinfection.—It has been mentioned in previous Annual Reports that the District does not possess any apparatus for disinfecting the bedding and clothing of infectious patients. The Medical Officer of Health now reports that a van, belonging to the Bucklow Joint Hospital Board, is available for the removal of bedding and clothing for disinfection.

Cemetery Needed.—It was mentioned in the last Annual Report that the Wilmslow Urban District Council, having been informed by the Wilmslow Church Authorities that there is only space for a few more graves in the churchyard, had communicated with the Alderley Edge District Council, asking them to consider the advisability of making a Cemetery for the combined Districts. As Alderley Edge is not well provided for, an arrangement for providing a joint Cemetery for the two Urban Districts may prove suitable.

ALSAGER

Urban District.

Medical Officer of Health—Dr. H. Crutchley.
Population at Census, on April 1st, 1901—2,597.
Estimated Population in middle of 1904—2,700.
Area in acres—2,241.
Birth-rate per 1,000 living—22.2.
Death-rate per 1,000 living—11.3.
Death-rate from seven principal Zymotic Diseases—0.3
Deaths under one year to 1,000 births—33.

The population of the area which now forms the Alsager Urban District was 1,912 in 1891. At the Census in 1901 the population of this District was 2,597. The increase in the populations during the decennium 1891–1901 was therefore 685, that is 35.8 per cent. The estimate of the population made for the middle of the year 1904 is 45 less than the estimate of the population for 1903.

Alsager U. D.

In 1904 the number of births registered in the District was 60, and the number of deaths registered in the District (including in the Workhouse) was 31. The birth-rate is 3.6 below the average in 1895–1903, and the death-rate is about the average in the same nine years.

Two of the deaths were of infants under one year old, and 9 were of persons 65 years old and upwards.

One death was due to scarlet fever, 1 to puerperal fever, and 1 to enteritis. Two deaths were due to phthisis, 4 to other tubercular diseases, 2 to cancer, 4 to bronchitis, pneumonia or pleurisy, 6 to heart diseases, 3 to accidents, and 1 death was due to suicide.

Cases of Infectious Diseases notified.—There were 13 cases of Infectious Diseases notified, viz.:—5 diphtheria, 7 scarlet fever, and 1 puerperal fever. Almost all these cases occurred in the first quarter; during the remaining three-fourths of the year the District has been practically free from Zymotic diseases.

Isolation Hospital Accommodation.—There are no means at present of isolating infectious cases other than smallpox. However, during 1903, application was made to the Local Government Board to issue a Provisional Order forming the Borough of Congleton, the Urban Districts of Sandbach, Alsager, Buglawton, and Biddulph, and the Rural District of Congleton into a united District, for the purpose of the provision, maintenance, and management, for the use of the inhabitants of the united District, of hospital accommodation for infectious disease other than smallpox. The Local Government Board Inquiry with reference to this application was held at Congleton Town Hall on January 22nd, 1904.

Water-supply.—The Medical Officer of Health re affirms what he has stated in previous reports as to the inadequacy of the existing water-supply. Linley is still unsupplied with water. The need of an improved supply has been considered by the District Council. The cottagers in Linley are compelled to carry the water they require from a considerable distance, and yet this portion of the District could be easily and economically supplied from the present station, if a small supplementary reservoir were placed in its neighbourhood for its separate use.

Sewers and Sewerage Disposal.—The sewerage of Alsager has very little fall, and those portions of the sewers which require flushing from the mains, were only flushed three times in each two months instead of once a week. Since October 25th, the pump has been kept working day and night, stopping only for three-quarters of a day each fortnight for boiler cleansing. The

water was turned off during the last fortnight of the year from 11-30 p.m. till 5-30 a.m. During the last ten weeks of the year sewer-flushing was interrupted. An average of below 46,000 gallons has been kept in the reservoir, and for this incessant pumping has been needed, yet the amount has been less than two days' supply at 10 gallons per head for the District.

The District Council proposes to sink another shallow well close to the present one, and are advertising for an estimate. The Medical Officer of Health hopes that they will undertake no important work of this kind without the recommendation and moral support of an experienced and competent Water Engineer.

There has not been much complaint of the effluvia from the sewers. The manholes have been properly cleansed and kept. The Talke Alsager Road sewer is in an unsatisfactory condition, as previously reported. The filteration area has been better attended to during the year. The settling tanks are frequently emptied, and their contents carted away.

Dairies and Milkshops.—These were carefully inspected twice during the year. All appear to be in good condition. Nothing was required beyond the usual periodical whitewashing.

Factories and Workshops.—These were inspected in January and July. It was found that the improvements previously suggested had been carried out.

There are, in the district, 2 factories, 2 workshops, 2 working places and 2 homeworkers' premises.

Slaughter-houses.—These also have been duly inspected.

ALTRINCHAM.

Urban District.

Medical Officer of Health—Dr. A. Golland.
Population at Census, on April 1st, 1901—16,831.
Estimated Population in middle of 1904—17,561.
Area in acres—662.
Birth-rate per 1,000 living—24.5.
Death-rate per 1,000 living—17.4.
Death-rate from seven principal Zymotic Diseases—2.2.
Deaths under one year to 1,000 births—183.

The population of this Urban District was 12,440 at the Census in 1891, and 16,831 at the Census in 1901. The increase in the population during the decennium 1891-1901 was thus 4,391, that is 35.3 per cent. The estimate of the population made for the middle of the year 1904 is therefore reasonably low.

Altrincham U. D.

In 1904, the number of births registered was 431, and the number of deaths registered (excluding 9 of persons not belonging to the District and including 14 of residents which took place elsewhere) was 306. The birth-rate is 5.9 below the Altrincham average in 1894-1903, and the death-rate is 0.6 above the Altrincham average in 1894-1903.

The number of deaths from the seven principal zymotic diseases was 39, viz.: 7 measles, 3 scarlet fever, 8 whooping-cough, 3 diphtheria and membranous croup, 1 enteric fever, and 17 diarrhœa. There were 3 deaths from epidemic influenza, 2 from croup (other than membranous croup), 5 from enteritis and 1 from puerperal fever. There were 29 deaths from phthisis, 22 from other tubercular diseases, 14 from cancer, 55 from bronchitis, pneumonia or pleurisy, 8 from alcoholism or cirrhosis of the liver, 8 from premature birth, and 23 from heart diseases.

The deaths include 79 of infants under a year old. This number is equal to 183 per thousand births. In 1894-1903 the deaths of infants in Altrincham were equal to 161 per 1000 births.

Cases of Infectious Disease Notified.—There were 135 cases of infectious disease notified, viz.:—1 small-pox, 51 diphtheria, 1 membranous croup, 64 scarlet fever, 8 enteric fever, and 10 erysipelas. Of these, 3 cases of diphtheria, 60 cases of scarlet fever and 1 case of enteric fever were removed to Lloyd's Fever Hospital.

The monthly incidence of infectious sickness is shown in tabular form below:—

	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.
Smallpox					1							
Scarlet Fever	8	5	4	12	8	7	4	1	10	2	1	2
Diphtheria	13	1	8	2	1		4	5	1	10	4	2
Enteric Fever	1				2	1	2			2		
Erysipelas								1	1		3	5
Membranous Croup			1									

Small-pox.—The only case of small-pox which occurred was notified on May 2nd. It was in a cottage in Chapel Street. The patient was at once removed to Woodcote Hospital and all the inmates of the cottage were re-vaccinated. The bedding was

promptly destroyed and the cottage was stripped and thoroughly disinfected. Happily the disease did not spread.

During January a considerable number of persons who had been in contact with cases of small-pox in Manchester and Stretford were notified by the Sanitary Authorities. All these were kept under careful observation until risk of infection had passed away.

Diphtheria.—The 51 cases notified occurred in 44 houses. In the great majority of cases the disease was of the mildest kind. As 3 of the patients died, the mortality was only equal to 5.5 per cent. of the cases notified.

Scarlet Fever.—The 64 cases notified were from 52 houses. As already stated all but 4 were removed to Hospital. As 3 of the patients died, the mortality was only equal to 4.6 per cent. of the cases notified.

Enteric Fever.—Though there were 8 cases (1 fatal) the disease was at no time epidemic. Two or three of the cases were clearly imported.

Erysipelas.—The 10 cases do not appear to have been important. They were mainly facial erysipelas.

Measles.—There was a pretty sharp epidemic of measles during the latter half of the year. The seven deaths recorded were mainly due to pneumonia.

Whooping-cough.—This disease, which was epidemic during the last two or three months of 1903, continued prevalent in the early months of 1904, but passed away in the Spring.

Diarrhœa was exceptionally prevalent and fatal in 1904. As usual the disease prevailed during the hot dry summer.

Tubercular Diseases.—The twenty-nine deaths from phthisis recorded in 1904 are equal to a death-rate of 1.65 per thousand living. There were also twenty-two deaths from other forms of tubercular disease. The entire death-rate from tubercular disease was equal to 2.9 per 1000 living.

Isolation Hospital Accommodation.—During 1904 Lloyd's Fever Hospital was in regular use, but almost entirely for cases of scarlet fever. It has already been reported that the County Council consider this Hospital inadequate, and the scheme for its replacement by a new Hospital is still under consideration. Various Architects have been instructed to prepare plans for a suitable Hospital to contain 30 beds, and so arranged as to enable the Authority to deal simultaneously with two or three distinct diseases.

Small-pox Hospital Accommodation is provided at Woodcote in a temporary building furnished with 8 beds for patients. The site is remote from dwelling-houses, and yet convenient of access.

Bacteriological Diagnosis.—Arrangements have been made with Professor Delépine, of Victoria University, Manchester, for the examination of morbid products in suspected or doubtful cases of diphtheria and typhoid fever.

Diphtheria Antitoxin.—A store of this is now kept by the Medical Officer of Health, and will be given free of charge to Medical Practitioners in the District requiring it for use among the poor.

Disinfection.—Careful disinfection of premises after infectious disease has been carried out, including houses in which deaths from phthisis have occurred.

Water Supply.—This is derived from Manchester and distributed by the North Cheshire Water Company. It has been tested from time to time and found to be satisfactory. During 1904 the supply appears to have been sufficient.

Public Baths.—In the Annual Report for 1901 it was stated that Public Baths had been opened. The cost was partly met by a sum of money subscribed to do honour to the late Queen's Jubilee, and the Baths were handsomely and satisfactorily completed by the District Council. These Baths have proved so successful that it has been decided to enlarge them. A new plunge bath is to be added.

Common Lodging-houses.—These have been inspected on 47 occasions, beside occasional special inspections made by the Medical Officer of Health. The lodging-houses were found clean and in good order. The lime-washing was regularly done in accordance with the requirements.

Slaughter-houses.—These have been inspected 58 times. With some exceptions as regards cleanliness, the premises were found in good condition. The Notices served with reference to lime-washing, etc., were duly complied with.

Improved Slaughter-houses and Lairages.—In the Annual Report for 1902 it was noted that a loan for providing new slaughter-houses and lairages had been sanctioned, and that the District Council had possession of a suitable site. During 1903 good progress was made. The new Abattoir was completed in 1904, and the District Council now have the regulation of the meat-supply of the District directly within their own control.

Dairies and Milkshops.—These, 28 in number, have all been inspected twice during the year. They were found clean and in a satisfactory condition.

Factory and Workshop Act.—This Act has had full attention. Eleven inspections have been made of factories and 3 Notices served in respect of defects. The number of workshops inspected was 164, and 96 Notices were served in respect of defects. As regards workplaces, 31 inspections were made, and 7 Notices served in respect of defect. Two home-workers premises, were inspected, and found satisfactory. The Notices were attended to, and no prosecutions were required. There were at the close of the year 200 workshops on the Register.

The bakehouses are now generally satisfactory. Of the underground bakehouses, three have been certified, and the remainder have been done away with.

Housing Scheme.—The housing scheme makes progress, and what seem to be very suitable plans have been got out for 11 pairs of small dwelling-houses, and two larger dwelling-houses, for the very poor, at small rents.

The Mortuary, which (with post-mortem room attached) was built at the back of the Town Hall in 1901, is a great improvement on the premises previously used as a mortuary.

The Inspector of Nuisances, Mr. D. C. Moody, who has been relieved of some of his former duties, is thus able to give the whole of his time to his work as inspector, and reports on matters coming under his supervision.

Nuisance Abatement.—Many nuisances were abated during 1904, a large proportion of the work being done without the serving of formal notices. For the most part notices were served in respect of defective drains, insanitary privies and back-yards and passages needing paving. Notices were served in respect of 9 dirty houses, 8 over-crowded houses, 123 houses in which the yard drains and passage drains were out of order, 39 houses in which the yards, passages, and floors needed repair, and in respect of 26 accumulations of manure; 7 notices were served in respect of chimney-firing. Eleven notices were served for the abatement of miscellaneous nuisances not included in the above list.

Refuse Removal.—The removal of night-soil and other refuse from ash-pits, has been efficiently carried out during the year, under the supervision of Mr. Thomas Kenyon, the Council's outdoor foreman.

Extension of Sewage-disposal Works.—During 1901, the new works in connection with the extension of the sewage

farm were begun, and during 1902, 1903 and 1904 much progress was made. At a portion of the new works sewage is now being received and dealt with.

Canal Boats.—During the year 81 visits of inspection were paid in respect of 50 boats. All but 10 of the boats were quite satisfactory, and notices were served on the owners of the 10 boats to have the defects in connection with the same duly amended. The cabins of these boats were registered to accommodate 270 persons, and were occupied by 143 viz. :—102 males and 26 females upwards of 12 years of age, and 15 children under 12 years of age. No case of sickness was found on board.

ASHTON-UPON-MERSEY

Urban District.

Medical Officer of Health—Dr. C. J. Renshaw.
Population at Census on April 1st, 1901—5,563.
Estimated Population in middle of 1904—5,650.
Area in acres—1,622.
Birth-rate per 1,000 living—25.5.
Death-rate per 1,000 living—13.2.
Death-rate from seven principal Zymotic Diseases—3.3.
Deaths under one year to 1,000 births—97.

The Urban District of Ashton-on-Mersey was constituted early in 1895. This is therefore the Tenth Annual Report of the Medical Officer of Health. The population of the area forming the Urban District was 4,234 in 1891. At the Census in 1901, the population of the District was 5,563. The increase in the population during the decennium 1891-1901 was thus 1,329, that is 31.38 per cent. The Medical Officer of Health estimates that the population has increased by 87 between the taking of the Census in 1901 and the middle of the year 1904.

During 1904 the number of births registered in the District was 144, and the number of deaths registered in the District (including deaths of residents registered elsewhere) was 75. The birth-rate is 1.6 higher than the mean birth-rate in 1895-1903, and the death-rate is 0.2 lower than the mean death-rate in 1895-1903. Only 14 deaths were of infants who had not completed their first year, and 23 were of persons above 65 years of age.

Nineteen deaths were due to the principal Zymotic diseases, viz. :—3 to measles, 2 to scarlet fever, 3 to whooping-cough, 2 to diphtheria or membranous croup, 3 to enteric fever, and 6 to diarrhœa. The zymotic death-rate was there-

fore exceptionally high. There were 9 deaths from phthisis, 2 from cancer, 11 from bronchitis or pneumonia, 7 from heart diseases, and 1 from premature birth.

Cases of Infectious Disease.—There were 101 cases of infectious disease notified, viz.:—3 small-pox, 3 diphtheria, 3 erysipelas, 9 scarlet fever, 6 enteric fever, 64 measles, and 13 whooping-cough. Of these 1 case of small-pox, 1 of scarlet fever, and 2 cases of enteric fever were removed to the Isolation Hospital at Baguley.

Small-pox.—The 3 cases of this disease occurred in October. Two were treated at home, and all recovered.

Measles was epidemic in the early part of the year. The case-mortality was just under 1 in 21. Of the 64 who were attacked, 30 were under 5 years old.

Enteric Fever.—The 6 cases occurred in November. The rainfall had been small during the summer, so that bacilli of the disease getting into the drains would not be promptly washed away, but remain in the sewers, where they would multiply.

Disinfection is carefully carried out when required. In fatal cases of tuberculosis, the premises are disinfected. As this disease is not notifiable, knowledge of cases is rarely obtained by the officials of the Authority, except in the event of death. Otherwise disinfection of rooms during life would be of use to phthisical patients and their friends.

Isolation Hospital Provision.—As Ashton-upon-Mersey is one of the Districts forming the Bucklow Joint Hospital District, infectious cases (including small-pox) can be efficiently isolated and treated.

Bacteriological Examinations. — Arrangements were made in 1899 for having material from suspected cases of diphtheria, enteric fever and phthisis examined at Owen's College Laboratory.

Antitoxin has, for the past four years, been kept for use in cases of diphtheria. Proof of its efficiency in lessening the number of fatal cases is rapidly accumulating.

Water Supply.—The water supplied by the North Cheshire Water Company continues of good quality. The quantity was scanty in 1904.

Considering that the rainfall was deficient the dust has been kept down better than might have been expected. This is important, as infected material is carried about with the dust, and thus infects food and water.

Ashton-upon-Mersey U. D.

Ashpit Contents.—More care than usual appears to have been exercised in keeping vegetable matter out of the ashpits. Such refuse in ashpits encourages flies.

More attention should be given to the destruction of flies in summer.

Dairies and Cowsheds have been kept under supervision throughout the year, and are in good condition.

Factory and Workshop Act.—The provisions of this Act have been carried out. During the year 2 factories have been inspected, 21 workshops, and 6 workplaces. Four of the workshops were wanting in cleanliness, and one was inefficiently ventilated. Steps were taken to put these shops in order.

New Houses, &c.—Twenty-eight places have been approved by the Plans Committee during the year. These plans were for 53 houses, 4 stables, 3 alterations and additions, and one new street. Only 25 of the houses were erected during the year.

Nuisance Abatement. — Nuisances complained of or discovered have been abated. In 13 houses the drains have been taken up and relaid. In 4 houses the cellar drains have been removed and the cellars made to drain to gullies fixed outside.

Slaughter-houses have been inspected and found in good condition.

Ventilation of Sewers being not altogether satisfactory, the effect of upcast shafts is to be tried. Three shafts (each 40 feet high) are to be erected on the main sewer, with a view of testing the effect.

Flushing of Sewers.—This is at present done by means of a water cart, holding 350 gallons. The Medical Officer of Health points out that this would be better done by fixed flushing tanks to hold about 3,000 gallons apiece.

Sewage Disposal.—The willow-beds, where the sewage is treated, continue to act efficiently. However, the land is now taking all the sewage it will take. In the near future there will have to be a considerable extension of area, or a new system will have to be adopted.

HIGHER BEBINGTON

Urban District.

Medical Officer of Health—Dr. G. A. Kenyon.
Population at Census, on April 1st, 1901—1540.
Estimated Population in middle of 1904—1576.
Area in acres—699.
Birth-rate per 1,000 living—22.2.
Death-rate per 1,000 living—12.0.
Death-rate from seven principal Zymotic Diseases—0.6.
Deaths under one year to 1,000 births—85.

The population of this Urban District was 1,421 at the Census in 1891, and 1,540 at the Census in 1901. During the decennium 1891-1901 the population increased by 119—that is, 8.3 per cent. The estimate of the population made for the middle of the year 1904 is, therefore, not excessive.

In 1904 the number of births registered in the District was 35, and the number of deaths registered in the District was 17. To the deaths must be added one which occurred at the workhouse, and one which occurred at the Royal Southern Hospital, Liverpool, making 19. The birth-rate is 5.9 below the average in the ten years 1894-1903, and the death-rate is 1.1 below the average in the same ten years.

Three of those who died were under a year old, and four of those who died were upwards of 65 years old.

There was one death from diarrhœa, and one from septic disease. There were three deaths from phthisis, two from cancer, two from bronchitis, and three from pneumonia. There was one death from alcoholism, one from premature birth, one from parturition, and one from heart disease.

Infectious Disease Notified.—Only one case of infectious disease was notified—an adult suffering from diphtheria. The patient was treated at home, and disinfection was attended to. This case was notified on December 26th, 1904, and the last case of infectious disease notified was on September 25th, 1903. The District was, thus, free from notifiable infectious disease for more than a year.

Inspection.—The Medical Officer of Health has visited the District on several occasions during the year, to make inspections, and has advised thereon.

Water Supply.—The District is supplied throughout with water by the West Cheshire Water Works (deep wells). Though otherwise of good quality, this water has of late become exceedingly hard, and caused great inconvenience by furring up boiler

pipes, and being unsuitable for washing purposes. Endeavours are being made to soften the water.

Sewerage and Sewage Disposal.—The District is, on the whole, well sewered, and the sewers are flushed as required. There are, however, some outlying houses which require to be connected—a difficult matter, owing to their distance from the sewers. Thus, the removal of excreta, except in the case of a few remote houses, is by water-carriage.

Refuse Removal.—Ashes and house refuse are removed by a contractor employed by the District Council; 515 ashpit emptyings were effected in 1904. 42 houses have dust-bins, and these are emptied weekly.

Inspector's Report.—Mr. Lloyd, the Inspector of Nuisances, has made a careful and satisfactory report. He states that, during the year, 10 complaints of nuisance were received and dealt with, five orders were issued to remedy sanitary defects, and four houses, premises, &c., were repaired or cleansed. In 16 houses the drains were repaired or cleansed. There were 39 houses specially inspected, and 18 re-inspected. At 11 houses the drains were tested with water-pressure. In 16 instances nuisances due to accumulations of animal refuse were abated. One case of over-crowding was reported and attended to.

Dairies, &c.—Eight cowsheds and premises belonging to purveyors of milk were inspected to see that they were kept in order and lime-washed twice a year. Regulations, made under the Dairies, Cowsheds, and Milkshops Orders, came in force on June 11th, 1899.

Factory and Workshop Act.—The only premises coming within the provisions of this Act are a joiner's shop and a bakehouse. The joiner's shop has been inspected. The bakehouse was reconstructed, above ground, in 1903. The air-space, ventilation, and sanitary accommodation are satisfactory.

A Slaughter-house was built during 1903, and has been duly inspected.

Isolation Hospital Accommodation.—The District is contributory to the Wirral Joint Hospital Board, having thus good accommodation for infectious cases.

LOWER BEBINGTON

Urban District.

Medical Officer of Health--Dr. G. A. Kenyon.
Population at Census, on April 1st, 1901—8398.
Estimated Population in middle of 1904—9352.
Area in acres—1051.
Birth-rate per 1,000 living—37.4.
Death-rate per 1,000 living—13.9.
Death-rate from seven principal Zymotic Diseases—2.2.
Deaths under one year to 1,000 births—134.

The population of this Urban District was 5,261 at the Census in 1891, and 8,398 at the Census in 1901. Thus during the decennium 1891-1901 the population increased by 3,182, that is 61 per cent. The estimate of the population made for the middle of the year 1904 is arrived at by adding to the Census population three-tenths of the increase during the decennium 1891—1901.

In 1904, the number of births registered in the District was 350, and the number of deaths registered in the District (excluding 3 not belonging to the District and including 2 in the Fever Hospital, 6 in the Workhouse, and 8 in Hospitals in Liverpool or Birkenhead) was 130. The birth-rate is 4.6 above the average in 1894-1903, and the death-rate is 1 above the average in the same ten years.

There were 47 deaths under a year old, *i.e.*, equal to 134 per 1000 births. In 1894-1903 the deaths of infants were equal to 106 per 1000 births.

The deaths include 21 from the principal zymotic diseases, viz. : 2 scarlet fever, 8 whooping-cough and 11 diarrhœa. There was 1 death from epidemic influenza. There were 2 deaths from enteritis, 6 from phthisis or other forms of tuberculosis, 7 from cancer, 8 from bronchitis, 12 from pneumonia, 8 from premature birth, 2 from diseases and accidents of parturition, 12 from heart diseases and 6 from accidents.

Cases of Infectious Disease notified.—There were 41 cases of infectious disease notified, viz. :—5 small-pox, 1 diphtheria, 19 scarlet fever, 5 enteric fever, and 11 erysipelas. Of these 30 were isolated in Hospital, viz. :—5 small-pox, 1 diphtheria, 18 scarlet fever, 3 enteric fever, and 3 erysipelas. Thus 73 per cent. of the known cases were isolated in Hospital.

None of the cases appeared to be due to infected milk or contaminated water, and there was little evidence of spread of infection.

Small-pox.—Of the 5 cases of small-pox, 4 were discovered in one house on January 12th. It appeared that the outbreak

must have commenced three weeks before, but the earlier cases were so mild that they escaped notice. The last of the four attacked was a lodger who had never been vaccinated, and he had the disease severely. The fifth case occurred in June. The origin was not traceable, but the subject had been in frequent communication with Liverpool. All "contacts" were re-vaccinated and kept under observation. The bedding of the patients was burned and compensation allowed therefor.

Action taken to prevent spread of Infection.—All houses where infectious cases occurred were visited, disinfectants supplied as required, and measures taken to prevent the attendance at school of pupils from these houses. Insanitary conditions when discovered were removed, and cases which could not be isolated at home were promptly sent to Hospital. As soon as patients were removed, or had recovered, disinfection of premises, &c., was carried out.

Inspection.—The Medical Officer of Health has visited the District from time to time, and advised the District Council and the Inspector on various points of detail in connection therewith.

Water-supply.—The District is supplied with good water from the West Cheshire Water Works (deep wells).

Though this water is very pure as regards freedom from animal or vegetable matter, it has of late became unduly hard. Efforts are being made to arrange for having the water softened, which will be a great advantage. The Water Company are willing to soften the water, if empowered to recover the extra expense by an addition to the water-rate.

Dairies, &c.—There are 9 cowhouses and 15 dairies, to which about 300 visits of inspection have been made. Notices have been served upon the occupiers to lime-wash their premises.

Factory and Workshop Act.—There are 17 workshops registered, and these were visited every month. In all 22 notices were served on the occupiers for uncleanly premises, defective drainage, insufficient ventilation, &c.

Slaughter-houses.—There are 3 licensed slaughter-houses in the District. These have been inspected regularly, and occasionally the occupiers have needed admonition. The licences are granted annually.

Common Lodging-houses.—There were 5 Common Lodging-houses on the register at the beginning of the year. These have all been systematically inspected.

New Houses.—Sixty-one new houses have been built, and all have their drains tested.

Drain-testing.—The apparatus for testing new drains by smoke, was on 12 occasions used for testing drains in old houses.

Main-drainage.—In the report for 1901, it was stated that the main-drainage scheme had been completed, and was in operation.

Sewer-flushing.—This has been duly attended to, and sewers are flushed every fortnight.

Refuse Removal.—Ashpit refuse is removed at regular intervals, premises being taken in rotation, by the District Council's servants. The movable bins in use in the new houses at Port Sunlight are emptied weekly.

Inspector's Report.—Mr. Westmorland, the Inspector of Nuisances, has made a very careful and satisfactory report. He states that house-to-house inspection has been made as far as possible. All houses, in respect of which complaints have been received, have also been inspected, and houses in which infectious diseases occurred. In all 919 house inspections and re-inspections have been made, and 273 notices for the abatement of nuisances have been served. In many instances owners, agents, or contractors have been met by appointment on the spot. In addition to the nuisances discovered, 39 complaints of nuisances were received and dealt with. The nuisances discovered or complained of, include 45 caused by obstructed or defective drains, 13 caused by defective soil pipes, 31 caused by defective water-closets, 29 due to defective putty-joints, 26 due to defective sink waste-pipes, 15 to broken gullies, 7 to dirty houses, and 2 to over-crowded houses. In 124 instances the yard-paving was defective. In 29 instances roofs were defective.

House Unfit for Habitation.—One house was found to be unfit for habitation, and dealt with accordingly.

Infected Library-books Destroyed.—Books belonging to Public Libraries on infected premises are reported and destroyed.

Hospital Accommodation.—The District is contributory to the Joint Hospital Board, having thus excellent accommodation for infectious diseases.

BOLLINGTON.

Urban District.

Medical Officer of Health—Dr. D. W. Main.
Population at Census, on April 1st, 1901—5,245.
Estimated Population in middle of 1904—5,245.
Area in acres—1291.
Birth-rate per 1,000 living—21.9.
Death-rate per 1,000 living—15.4.
Death-rate from seven principal Zymotic Diseases—0.3.
Deaths under one year to 1,000 births—182.

The population of the area which now forms Bollington Urban District was 5,335 at the Census in 1891. At the Census in 1901 the population of this District was 5,245. The decrease in the population during the decennium 1891-1901 was, therefore, 90—that is 1.68 per cent.

It is estimated that the population at the middle of the year 1904 was equal to the population enumerated at the Census in 1901.

Bollington is situated at an altitude of from 440 feet to 700 feet above sea-level.

The Village proper lies in a valley running east and west between the Nancy and Nab Hills. The character of the soil and sub-soil is various and difficult to describe. Generally it is sandy, alternating with gravel and clay, and in places is very boggy. To the west it is sandstone.

The number of inhabited houses is 1,172. Three houses which were in the course of erection last year have been completed, and one shop is now in the course of erection.

In 1904, the births registered in the District numbered 115, and the deaths registered in the District (including 7 deaths of residents registered in Public Institutions outside the District) numbered 81. The birth-rate is 1.5 below the Bollington average in 1894-1903, and the death-rate is 0.1 below the Bollington average in the same ten years.

Infant Mortality.—Twenty-one of those who died were infants under a year old, a number equal to 182 per 1,000 births. This is a high rate of mortality. In 1894-1903 the deaths of infants in Bollington were equal to 126 per 1,000 births.

The main causes of a high rate of infant mortality are :—

1.—The employment in factories of those about to become mothers, and those who have been recently confined and should be nourishing their infants.

2.—The infants of factory employed mothers being badly cared for and ill-fed during the hours their mothers are at work.

3.—The environment of the infant being insanitary, frequently caused by the storage of refuse and filth close to the house, and the soil about the house becoming polluted through badly paved yards.

4.—No proper provision being made for isolation and disinfection.

5.—Ignorance of mothers as to feeding and clothing children.

Cases of Infectious Disease notified.—There were 10 cases of infectious disease notified during 1904, viz. : 3 small-pox, 1 scarlet fever and 6 erysipelas. The three cases of small-pox were removed to the Small-pox Hospital, Macclesfield. The other cases were treated at home.

Small-pox.—The three cases notified occurred in the Church Street District in June and July. The wife of a man working at the bleachworks was found to be suffering from confluent small-pox, and was immediately removed to the Isolation Hospital at Macclesfield, where she died. The husband of this woman had been working for some days previously, while suffering from a rash, of which he thought of no account. He did not consult a doctor, but, from the description of the rash given by him, and some other symptoms he suffered from, he evidently had a mild attack of small-pox. This man's occupation at the works was to sort and pack into bags waste rags. These bags were then sent to Bury, and when empty returned from there. As the man could not account in any way for the rash, the Medical Officer of Health for Bollington wrote to the Medical Officer of Heal h for Bury, giving him an account of the outbreak, and asking if the disease could be traced to any work people at the Mill from which the bags had been returned. The reply received was that "there had been no case of small-pox having any connection with the Mill." Thus it seems highly improbable that infection had been brought to Bollington by means of the bags. However, the owners of the bleachworks had the bags handled by this patient destroyed, and further had all their hands re-vaccinated.

As a number of the neighbours had been visiting and sitting with the patient, it was expected that other cases would be discovered, however, only two more cases were notified. Both were promptly removed to hospital, where they recovered. Re-vaccination was freely offered from house to house in the immediate neighbourhood, and to a fair extent accepted. The houses were all disinfected by the Assistant Sanitary Inspector under the supervision of the Medical Officer of Health.

The total expense incurred by the Council in dealing with the outbreak of small-pox amounted to the sum of £55 5s. 7d., as shewn under :—

	£	s.	d.
Cost of Maintenance, Medical Fees, &c., in Hospital	35	14	0
Disinfecting of Houses and Replacing of Goods Destroyed	14	16	7
Funeral Expenses (share)...	4	15	0
	£55	5	7

In addition to this there must be mentioned the annual fee of £30 payable to the Macclesfield Corporation for retaining for our use the two beds in their Small-pox Hospital.

Measles.—An outbreak occurred in the late summer at the Cross. No deaths were notified, and it was not necessary to close the school.

Antitoxin.—By direction of the District Council a supply of Antitoxin for use in diphtheria cases has been obtained.

Needed Hospital Accommodation.—A reference has just been made to the agreement come to with the Macclesfield Corporation for two beds in their Small-pox Hospital to be at the service of Bollington Urban District Council. However, the Medical Officer points out that no provision has been made for the isolation in Hospital of cases other than small-pox, and that such provision is needed. It will be remembered that the offer from a private donor of £2,000 for the purpose of erecting an Isolation Hospital in the District was allowed to be withdrawn. It is almost impossible to isolate infectious cases in the houses of the people, and the fact that the number of infectious cases has been small during the last few years, whilst creditable to the District, indicates that there are a greater number liable to infection, should any disease obtain hold in the neighbourhood. On this account it is not only advisable but necessary to have some means of isolating the early cases of infectious disease, and to this end some steps will have to be taken sooner or later.

Disinfection of houses after infectious disease has been carried out during 1904. The rooms infected by the small-pox patients had the paper stripped off the walls, and walls, ceilings, and doors were brushed over with chlorinated lime and water. The premises infected by scarlet fever were fumigated with sulphur.

The Medical Officer of Health recommends that chlorinated lime be used generally for the disinfection of premises, or else that formaldehyde lamps be used.

Adoptive Acts.—During 1899 the District Council adopted (1) part 3 of the Public Health Acts Amendment Act, 1890,

(2) the Infectious Disease (Prevention) Act, 1890, with the exception of clauses 6, 8, 9, 10 and 12, and (3) the Private Street Works Act, 1892. These came in force on September 1st, 1899.

Water-supply.—This continues to be in every way satisfactory. The pipes from the supplementary service from Dane Bent are now connected up, and it is hoped that the amount from both services will be sufficient for all emergencies.

New Building Bye-laws have been submitted to the Local Government Board for approval, and returned to the District Council. They were passed on December 19th, 1903, and have since been printed.

Houses Unfit for Habitation.—Two houses were examined by the Medical Officer and Inspector and were reported as being both unfit for habitation. The owner was informed and he immediately agreed that they should not be let in future as dwelling houses.

Sewerage.—The work of laying the sewers and making the outfall works has proceeded satisfactorily since their commencement in June last. In all about four miles of pipes have been laid.

Systematic Inspection.—House to house inspection of the District has not been carried out on any definite plan, but the Medical Officer of Health hopes that arrangements will be made for carrying it out efficiently in the future.

Abatement of Nuisances.—Where nuisances have been found to exist the offenders have been duly notified and abatement obtained in all cases to the satisfaction of the Council.

A case of overcrowding has been reported, and after Notice was served the nuisance was duly abated. The Medical Officer of Health regrets that efficient steps are not taken to check nuisances from smoke. Owing to effluvium nuisances from the sewers in Greenshaw Lane and Henshall Road, ventilation was found to be absolutely necessary, and was carried out. In Turner Street and Chapel Street the use of rubble sewers is being discontinued.

Report of Sanitary Inspector.—In connection with the Sewerage Scheme the Sanitary Inspector reports as follows:—

> As the borrowing powers of the Council are practically exhausted, the scheme has had to be cut down as low as possible, and the two most important items to be cut down, are means of ventilating the Sewers, and reduction of filter beds.
>
> It will therefore have to be borne in mind when dealing with nuisances arising from defective privies, that both the

Water and Sewerage Schemes (which of course have received the sanction of the Local Government Board) have been based on the fact that waterclosets were not in general use in the District, and provision is not made for their becoming general.

Further, the old sewers emptied in the brook at the nearest possible point and in no case was the sewer more than a few hundred yards in length before it discharged in the open air, and this combined with quick gradients to the sewers and an almost constant flow of ground water, kept the old sewers in a clean condition and sewer gas was practically unknown.

Under the new system all the sewers will be connected together, and there is a probability of more trouble from the sewers themselves than has yet been experienced.

With the new condition of things it will be more essential than ever that house drains should be in good condition, and the utility of intercepting traps and ventilating shafts will be more apparent than it has been hitherto.

It will be a mistake to allow any house drains to be connected to the sewers without an intercepting trap being provided. This is provided for in the Council's Bye-laws and such has been the practice for some years now in any drainage work which has been carried out.

During the year in 15 cases combined privies and ash-pits were re-placed by water-closets and ashbins. Thus the number of houses provided with water-closets was 121 at the end of 1894. The number of houses supplied with water-closets was 106 at the end of 1903, and 56 at the end of 1902.

Obstructive Buildings Removed.—Two houses and a scullery belonging to old property in Church Street have been removed. This work and the opening up of a closed passage will much improve the ventilation of a block of 19 houses.

Refuse Removal.—The collection and removal of house-refuse is undertaken by the District Council's men at intervals of a month. Nightsoil is now also removed regularly under the superintendence of the Inspector of Nuisances. This is a much more satisfactory way of dealing with the stuff than leaving it to be collected by the farmers.

The Workshops and Factory Act has had attention. Generally speaking everything has been found satisfactory. In one case however the structural management seem to be very defective.

Bakehouses.—Three Bakehouses have been reported for not being limewashed as required by the Workshops Act, in one case this has been attended to, and the other two are being dealt with.

Cowsheds.—Cowsheds have been frequently inspected and breaches of the Regulations have been remedied at 6 of these Buildings.

Slaughter-houses.—The three Slaughter-houses have been kept in a clean condition, which to some extent modifies structural defects which exist.

A portion of a carcase of beef affected by tuberculosis weighing 44lbs. was destroyed.

Offensive Trade.—As mentioned in last year's report tripe is boiled by one butcher in the village—though not to the extent it was a year ago. A special Sub-Committee visited the premises and reported on it. As a result of this report the Council agreed to grant a licence to boil tripe subject to certain necessary sanitary alterations being carried out. Some alterations have been effected, and communications from the butcher are now awaited before either granting or refusing the licence.

BOWDON

Urban District.

Medical Officer of Health—Dr. M. Duggan.
Population at Census, on April 1st, 1901—2788.
Estimated Population in middle of 1904—2800.
Area in acres—850.
Birth-rate per 1000 living—11.4.
Death-rate per 1000 living—10.0.
Death-rate from seven principal Zymotic Diseases—1.4.
Deaths under one year to 1000 births—93.

The population of this District was 2,792 at the Census in 1891, and 2,788 at the Census in 1901. The decrease in the population during the decennium 1891-1901 was thus 4.

It is estimated that the population has slightly increased since the Census.

The number of births registered in the District in 1904, was 32; and the number of deaths registered in the district in 1904, was 28. The birth-rate is about 2 below the average, and the death-rate is about 1.2 below the average.

Three of those who died were infants under a year old, and 11 were persons over 65 years of age.

Four of the deaths were due to the principal zymotic diseases, viz.:—1 measles, 2 whooping-cough, and 1 diarrhœa. There was also a death from puerperal fever. Two deaths were from phthisis, 1 from other tuberculous disease, 1 death from cancer, 9 deaths from bronchitis and pneumonia, and 2 deaths from heart disease.

Bowdon U. D.

Cases of Infectious Disease notified.—There were 10 cases of infectious disease notified, viz.: 1 diphtheria, 7 scarlet fever, 1 puerperal fever and 1 erysipelas.

Scarlet Fever.—Three of the cases of this disease occurred in one family. Two of the 3 appeared 10 weeks after the first, and a few days after the return home of the first case. The other 4 cases were not connected, one occurred in January, one in October, and two in December.

Diphtheria.—The only case of diphtheria notified probably arose from the insanitary condition of the premises, which has since been remedied.

Measles was epidemic in the Autumn. The Bowdon Parish Schools were, in consequence, closed for a month, with good effect.

Influenza, of a mild type, was present during the last two months of the year.

Phthisis.—The phthisis death-rate was equal to 0.7 per 1000 living. The Medical Officer of Health is of opinion that this disease ought to be notified, as are other infectious diseases, so that steps could be taken to prevent its spread.

Isolation Hospital Accommodation.—Lloyd's Fever Hospital was again used by the Bowdon District Council for the isolation of infectious patients early in 1904. However (as was mentioned in the Annual Report for 1903) the District Council have made arrangements for infectious cases from Bowdon to be taken into the Sanatorium at Baguley.

Water Supply.—This appears to be sufficient, and in quality quite satisfactory.

Inspection.—The Medical Officer of Health has inspected the sanitary arrangements of the District from time to time during 1904, and found improvement in some respects. There is, however, some property in Vicarage Lane which requires to be put in better condition; for example, the road behind Wiseman's and Oxley's in Vicarage Lane ought to be paved and channelled. The earth-closets of Vine Cottages ought to be repaired and the ash pits roofed in. Some of the yards in Davison's property in Priory Street require paving, and the ash-pits require roofing. Pigeons should not be allowed to be kept in yards so close to houses, as in Hicks's house, Priory Street.

Overcrowding.—The nuisance of overcrowding requires to be abated at Mrs. Dane's property, Priory Street.

Bowdon U. D.

Dairies and Cowsheds have been inspected. As a rule they are clean, well kept, and ventilated ; however, Motterhead's dairy in Vicarage Lane is in so bad a state that it ought to be closed permanently.

Refuse Removal.—Ashpits, etc., are regularly emptied by contract. The contractors perform their work satisfactorily.

The Sewage Farm appears to be kept in fair working order.

BREDBURY AND ROMILEY

Urban District.

Medical Officer of Health—Dr. F. Cant.
Population at Census, on April 1st, 1901—7,185.
Estimated Population in middle of 1904—7,752.
Area in acres—3,986.
Birth-rate per 1,000 living—24.9.
Death-rate per 1,000 living—17.9.
Death-rate from seven principal Zymotic Diseases—1.8.
Deaths under one year to 1,000 births—119.

By Local Government Board Order, No. P. 1,711, which was confirmed by Local Government Board Provisional Orders Confirmation (No. 11) Act, 1901, and came into operation on November 9th, 1901, part of the Civil Parish of Bredbury, in the Urban District of Bredbury and Romiley, was added to the Civil Parish and County Borough of Stockport. The area of the Urban District of Bredbury and Romiley and of the Administrative County of Chester was thus reduced by 192 acres, inhabited by 20 persons.

By another Local Government Board Order which came in force on September 29th, 1902, a large portion of North Brinnington was added to Bredbury and Romiley District. This addition consists of 451 acres, and has an estimated population of 120. It is situated on the north-west border of Bredbury, and extends down to the River Tame, which bounds it on the west and north. It consists almost entirely of farm land, the houses (20 in number) being much scattered. The ground is generally level, but slopes down to the river at the edge. As the added portion of Brinnington adjoins Bredbury, and has been added to the same registration area, it will, for the purposes of this Report, be taken as part of Bredbury. The area and estimated population of Bredbury and Romiley are, therefore, as follows:—

Bredbury ...	2,797 acres	... estimated population	5,178
Romiley ...	1,189 „	... „ „	2,574
	3,986		7,752

Bredbury and Romiley U. D.

There are separate registration areas for Bredbury, (including Woodley and Brinnington), and Romiley.

The estimate of the population made for the middle of the year 1904, is based upon the number of occupied houses at that time, and assumes that the number of persons per house will be the same as at the Census in 1901.

In Bredbury there were registered 130 births and 96 deaths, and there were 49 cases of infectious diseases notified, of which 5 proved fatal.

In Romiley there were registered 63 births and 43 deaths, and there were 6 cases of infectious disease notified, of which 1 proved fatal.

The number of births in the whole District was thus 193, and the number of deaths in the whole District (including 6 deaths in the Stockport Union Workhouse, 2 in Stockport Infirmary, and 1 in St. Mary's Hospital, Manchester) was 139. The birth-rate for 1904 was about 0.2 below the average in 1894-1903, and the death-rate for 1904 was about 3.3 above the average in the same ten years.

Twenty-three of those who died were infants under a year old. These equal 119 per 1,000 births. In 1894-1903 131 infants died to each 1,000 births.

Infectious Disease.—The cases notified at Bredbury were as follows:—4 small-pox, 5 diphtheria, 37 scarlet fever, 3 enteric, and 4 erysipelas. The cases notified at Romiley were as follows:—2 diphtheria, 4 scarlet fever, and 1 erysipelas. The 4 cases of small-pox which occurred in Bredbury were removed to the Hospital at Hyde. Seven of the scarlet fever cases at Bredbury and one of the scarlet fever cases at Romiley were removed to the Hospital at Hyde.

Small-pox.—The first case of this disease was notified in the middle of July, and on visiting the house where it occurred the Medical Officer of Health found another case. Both patients were at once sent to Hospital. One was a girl, seven years old, and the other was her father, aged 46 years. The child had been vaccinated in infancy, the eruption was discrete, and she recovered. The man had been vaccinated in infancy, but the indication of it was very slight, and he had not been re-vaccinated. He developed a confluent eruption and died.

Every one in the house was at once re-vaccinated, and escaped infection. The house and premises were thoroughly disinfected, bedding, etc., being sent to Hyde to the disinfecting apparatus in connection with the Hospital. Unfortunately, two young women living in the house had been allowed to continue going to their work up to the time of

notification, and had mixed with over a hundred others there. The employers acted with commendable promptness in urging all to be re-vaccinated, and the Medical Officer of Health believes every person in the factory was re-vaccinated within a few days. A month later another man showed signs of the disease. He was 55 years old, and bore signs of having been poorly vaccinated in infancy. He had not been re-vaccinated. The eruption in his case was confluent, but he recovered. This case was reported in August. It was followed by a fourth case, which was reported in September. The Medical Officer of Health was able to trace two ways by which infection could have travelled. The patient was a young man (24 years old) who had not been vaccinated at all. He developed a confluent eruption, and eventually recovered. All proper precautions were taken, and there were no fresh cases. On the whole, especially considering the number of contacts who had never been vaccinated, and the number only vaccinated in infancy, the Medical Officer of Health thinks that the District is fortunate in having escaped so lightly.

Measles.—On April 7th, the Medical Officer of Health saw the first of an epidemic of measles at Romiley, the disease being of a fairly severe type. Within the next few days there was such a rapid increase of the disease among the children attending St. Chad's School especially, that it was closed (on the advice of the Medical Officer of Health) for a fortnight, and afterwards for a week longer. This appeared to have a decidedly beneficial effect. Through some children attending one day school and another Sunday school, there followed an epidemic among the scholars at Hatherlow British School, which was near, and the Medical Officer of Health promptly advised the closure of this School for three weeks. In each case the school rooms were cleaned and disinfected. As far as could be ascertained about 200 children had the disease. Seven cases terminated in death. The rapidity with which measles spreads among school children is remarkable, and seems to be due to the highly contagious catarrhal period of the disease, just before the rash breaks out, and therefore before the child is removed from his companions.

Scarlet Fever.—All but two of the scarlet fever cases were notified between July and the end of the year, yet the disease was at no time epidemic. In several instances there were two or three cases in the same family or among playmates, but as a rule the cases were scattered all over the District, and it was not possible to find any cause of infection common to them, such as milk supply or school attendance.

Isolation Hospital Accommodation—Arrangements are made with the Hyde Corporation for two beds in their Isolation Hospital to be reserved for the use of this District. Should

more accommodation be required the Hyde Corporation will take in the patients, provided there is room. This arrangement has worked very well so far, and it is intended to retain two more beds, making four in all, this new agreement to come in force as soon as the new hospital is finished.

Whooping-cough.—There were a few cases in the spring at Woodley.

Phthisis was the registered cause of ten deaths. The phthisis death-rate was thus equal to 1.29 per 1,000 living.

There were also 8 deaths from other forms of tubercular disease.

Action taken to Prevent Spread of Infection.—As soon as the Medical Officer of Health was made aware of any case of infectious disease, he visited the house, made inquiries as to the probable source of infection, and took steps to prevent the spread of disease. The disinfection of clothing and of the premises was attended to during, and after, sickness, and all children in the house were prevented from attending schools and meetings. Helpful information has often been given by school teachers and by attendance officers. The premises and surroundings were inspected, and any defects noticed were remedied.

Disinfecting Rooms has been done by means of the formaldehyde lamp. This method has been in use since 1901, and the Medical Officer of Health thinks highly of it. He believes it to be more efficient and less offensive than disinfection by sulphur, which used to be relied on. In this way also the rooms (and clothing) of patients suffering from phthisis have been disinfected.

Bacteriological Diagnosis.—Arrangements have been made with Professor Delépine, of the Victoria University, Manchester, for the examination of morbid products in suspected or doubtful cases of diphtheria or typhoid fever. The medical attendant forwards the sample, the Council pay the fee, and the result is made known to the Medical Officer of Health. Regret is expressed that more use is not made of this help to diagnosis.

Water Supply.—There is a good supply of wholesome water to the District, obtained through the Stockport Corporation from the Woodhead Reservoirs. During the year the water mains were extended by laying down 290 yards of pipes to supply 127 houses and outlying property. Nearly the whole of the District is now supplied with Manchester water through the District Council's water mains.

The Stockport Corporation is also extending its mains into the portion of Brinnington, recently added to Bredbury, to supply the farms and cottages.

Dairies, &c.—Regulations under the Dairies, Cowsheds and Milkshops Orders were made by the District Council on May 25th, 1898. The dairies and cow-sheds in the District are visited by the Inspector once a quarter. He reports them to be generally satisfactory. As, however, some of them are not so well situated and provided as they ought to be he is preparing a special report of them, which will be considered by the Council in due course.

Vaccination.—The Vaccination Act has been carried out very successfully. There has been a decrease in objectors, and the number of re-vaccinations keeps up well.

At the time of the outbreak of small-pox, when the extra number of applicants for re-vaccinations was suddenly largely increased, the work was arranged for without difficulty.

The Factory and Workshop Act has had attention. Inspection has been made, and the required particulars have been duly entered in the books provided for the purpose. Every factory, workshop, or workplace has been inspected, especially with regard to cleanliness, air-space, ventilation, draining, and sanitary conveniences. Where anything has been found unsatisfactory, improvements have been made. Houses and places where home-work has been carried on, have been kept under observation, and no home-work has been allowed on premises where infectious cases were housed. Lists of out-workers have been made, and where out-workers have resided in other Districts, lists have been forwarded to their District Councils.

The registers have been produced to and examined by the Sanitary Committee of the Council.

The Sanitary Inspector reports that he is satisfied with the means of escape in case of fire at all places where work-people are employed, and that they are suitable to the buildings and number of employees.

There is one underground bakehouse in the District. This and the other bakehouses have been inspected, and all were reported to be clean and in satisfactory condition.

Slaughter-houses.—There are 5 in use in the District All have been inspected and are reported on satisfactorily. One new slaughter-house has been erected during the year, and an old one has been closed.

Main Drainage and Out-fall Works.—The sewering of the greater part of the District is now complete. Outfall works have been opened for treating the sewage of Bredbury, at Wharf Meadow, Lower Bredbury. There are now 705 houses drained to this Works, and 736 to Romiley Outfall Works. Both works have been favourably reported on each time samples of effluent were taken for analysis. The Medical Officer of Health is satisfied that it would be to the advantage of the public health if every house could be connected with the main drains, and more of the existing old-fashioned ashpit privies done away with. Efforts have been continued during the year in this direction, and two privies have been converted into w.c.'s, whilst 47 houses have been connected up to the mains in Bredbury, and 17 in Romiley.

Ventilation of Sewers.—Complaints having been received of effluvia from street grids, two more ventilating shafts were erected with good effect.

New Buildings.—Twenty-two buildings plans were passed in 1904. There were 67 houses erected in Bredbury, and 10 houses erected in Romiley, and several additions to existing houses.

Building Bye-laws.—The revised building bye-laws are in force. These were returned by the Local Government Board, duly approved, on February 8th, 1901.

Inspection.—The Medical Officer of Health and Inspector have during the year, made many systematic visits of inspection in various parts, defects noticed were reported, and steps taken to remedy them.

In some instances a Sub-Committee of the Sanitary Committee have accompanied the Medical Officer of Health and Inspector to decide questions of alterations anl improvements on the spot. In this way a great deal has been done to correct defects, and bring about a more healthy state of the District.

Nuisance Abatement.—Sixteen notices to abate nuisances have been served during the year. In all 31 nuisances have been abated.

Refuse Removal.—The work of removing nightsoil and ashpit refuse is carried out under contract. The receptacles are emptied once a quarter, or oftener as may be deemed necessary by the officers of the Authority.

BROMBOROUGH

Urban District.

Medical Officer of Health—Dr. G. A. Kenyon.
Population at Census, on April 1st, 1901—1,891
Estimated Population in middle of 1904—1,960.
Area in acres—1,678.
Birth-rate per 1,000 living—25.5.
Death-rate per 1,000 living—13.8.
Death-rate from seven principal Zymotic Diseases—1.5.
Deaths under one year to 1,000 births—100.

By a Local Government Board Order, which came into operation on September 30th, 1895, the Urban District and Civil Parish of Bromborough were extended to include part of the Civil Parish of Poulton-cum-Spital.

The population of the area which now forms the Bromborough Urban District was 1,740 at the Census in 1891. At the Census in 1901 the population of this District was 1,891. The increase in the population during the decennium 1891-1901 was therefore 151, that is 8.67 per cent. The estimate of the population made for the middle of the year 1904 is therefore not in excess.

In 1904 the births registered in the District numbered 50, and the deaths belonging to the District numbered 27. The birth rate is 3.1 above the average for the ten years 1894-1903, and the death rate is 2.6 above the average for the same ten years.

Five of those who died were under a year old—not a large proportion.

The year's mortality includes 2 deaths from diphtheria or membranous croup, 1 death from whooping-cough, 1 from chicken-pox, 1 from epidemic influenza, 1 from erysipelas, 1 from phthisis, 1 from cancer, 2 deaths from diseases of the respiratory organs, two deaths from premature birth and three deaths from heart diseases.

Cases of Infectious Disease.—There were 18 cases of infectious disease notified, viz:—1 small-pox, 9 diphtheria, 4 scarlet fever, 2 enteric fever and 2 erysipelas. All these were isolated in Hospital, except the two cases of erysipelas. There was at no time any general spread of infection, the removal of patients to Hospital having had the effect desired.

Every case of infectious disease notified was duly investigated, disinfection was attended to, and action was taken for the discovery and remedy of sanitary defects on premises.

Small pox.—This case occurred in the Pool Works Village, on May 28th. The patient was a man, 26 years old, who had been well vaccinated in infancy (as was indicated by a large

characteristic cicatrix), and he was promptly removed to Hospital. It was not ascertained from whom he was infected. The eruption was discrete. The premises were disinfected, and the re-vaccination and quarantine of contacts was obtained. Notices were posted at the Pool Works urging the importance of re-vaccination and offering facilities for it.

Chicken-pox.—The fatal case of this disease occurred at Bromborough Village, the subject being an infant under one year old.

Inspection.—The Medical Officer of Health has visited the District from time to time, and advised the District Council and the Inspector on various matters of detail in connection with the ordinary sanitary work.

Special advice was given at the time the case of small-pox occurred, and the cases of diphtheria, &c., were investigated.

Sewers and Sewage-disposal.—The District is, on the whole, well provided with sewers.

Bromborough Village is sewered throughout, and the sewer is flushed regularly and ventilated. Additional ventilators were put in during 1903. The sewage is treated by means of septic tanks and bacteria beds at the Dibbensdale and Tile Yards outfalls. The sewers at Bromborough Pool and the Magazine Village deliver into tidal water.

At the Pool Works Village all the houses and cottages have water-closets, and the sewers are maintained in good order.

Refuse Removal.—The District Council contract for the emptying of ashpits and privies monthly, and for the emptying of ashbins as frequently as required. At the Pool Works Village movable bins are provided, which are emptied weekly.

Water-supply.—The Pool Works Village is supplied with water from Price's Patent Candle Co.'s deep wells. The remainder of the District is supplied with good water from the West Cheshire Water Works (deep wells).

Inspector's Report.—Mr. Howard, Inspector of Nuisances, has made a careful and satisfactory Report. During the year there were 13 complaints received. There were 280 premises inspected and 180 re-inspected. In 4 cases orders were issued for structural amendment of premises. The amendments were carried out. Two nuisances from over-crowding were reported and abated. Eleven houses were cleansed and whitewashed, &c. At 15 houses defective drains were cleansed and repaired; they were tested before being covered up. Sixteen house drains were ventilated. Three privies were converted into water-closets, and 9 privies or water-closets were repaired.

Bromborough U. D.

Dairies and Cowsheds.—There are seven registered dairies and cowsheds inspected. They are periodically whitewashed and kept in cleanly condition. The cowsheds are limewashed twice a year.

New Cottages.—The building of 10 new cottages has been under supervision during the year. All have water-closets. New drains are tested with water-pressure.

Factory and Workshop Act, 1901.—Twelve premises come under this act, viz.: 3 bakehouses, 2 blacksmiths' shops, 2 joiners' shops, 1 painter's shop, 1 plumber's shop, 1 shoemaker's shop, 1 cabinet maker's and 1 laundry. In all 18 men and 3 apprentices are engaged on these premises. They are in good order, but in two instances separate closet-accommodation has not yet been provided.

Isolation Hospital Accommodation.—The District is contributory to the Joint Hospital Board, and thus able to isolate infectious cases. The Pool Works Company have their own Hospital for infectious cases.

BUGLAWTON.

Urban District.

Medical Officer of Health—Dr. P. M. Davidson.
Population at Census, on April 1st, 1901—1,452.
Estimated Population in middle of 1904—1,452.
Area in acres—2,911.
Birth-rate per 1,000 living—35.1.
Death-rate per 1,000 living—14.4.
Death-rate from seven principal Zymotic Diseases—0.
Deaths under one year to 1,000 births—117.

The population of this Urban District was 1,382 at the Census in 1891, and 1,452 at the Census in 1901. The increase in the population during the decennium 1891—1901 was thus 70, that is 5 per cent. The estimate of the population made for the middle of the year 1904 assumes that the population has not increased since the Census.

In 1904 the number of births registered was 51, and the number of deaths registered (including one which took place at the workhouse at Arclid) was 21. The birth-rate is 5.2 above the average in this district in the ten years 1894—1903, and the death-ra te is 0.2 above the average in this District in the same ten years.

Among the deaths recorded were the following: 2 from enteritis, 1 from phthisis, 2 from other tubercular diseases, 1 from cancer, 3 from pneumonia, 3 from bronchitis and pleurisy, 1 from premature birth and 2 from heart disease.

Cases of Infectious Disease notified.—Eleven cases of infectious disease were notified, viz.: 4 small-pox, 6 scarlet fever and 1 enteric fever.

Small-pox.—With regard to the outbreak of small-pox. On the evening of the 12th of August, a man belonging to Key Green, and working in Manchester, returned from the latter place to his home not feeling well enough to continue his employment. The following night he went to consult a medical man in Congleton, when it was observed he had a small-pox eruption on the face. He was immediately sent direct from Congleton to the small-pox hospital, and next morning his home, and all the inmates, consisting of his wife, aged 46 years, an unvaccinated child three years of age, three daughters and two sons, aged respectively 19, 20, 22, 15 and 24 were disinfected. All were vaccinated or re-vaccinated, except the daughter aged 22, who had been successfully re-vaccinated a year before, and the son aged 24, who refused to allow himself to be operated upon.

The vaccinations were subsequently found to be successful, except in the case of the wife, in whom the result was not very decided or typical. On the 24th August, the wife and three years' old child were found to be infected, and were sent to the hospital. The next morning the son 24 years of age developed small-pox eruption, was removed to hospital early the same day, and the house thoroughly disinfected for the third time. The first patient was undoubtedly infected in Manchester, and infected the others during the short time he was at home. The cases were all of a comparatively mild form of the discrete variety of the disease, the attacks of the father and mother, aged 45 and 50, being the least severe.

If it be assumed that vaccination, in the incubation stage of small-pox does not prevent or modify an attack, then from the facts stated, the inference is inevitable that vaccination did not exercise any influence on this outbreak. Those attacked suffered very much alike whether vaccinated 50 or 24 years before, or not vaccinated at all, and the escape of the re-vaccinated daughter should not necessarily be ascribed to her re-vaccination, since her brother and sister, who were only vaccinated in infancy, also escaped.

The disease appeared to be of a mild type, independently of any protection; the limitation of the outbreak was due solely to the prompt removal of the infected, and to thorough disinfection of the house and its inmates.

Measles was epidemic in September and October, but no cases terminated in death

Influenza was prevalent in the District three times during 1904.

Scarlet Fever.—The 6 who suffered from scarlet fever were all under 15 years old. The disease was of a very mild type. The cases were scattered over the District, and no two occurred in the same house. The source of infection was not traced; it was thought to be some very mild cases attending school, but the examination of a large number of school children did not confirm this view.

Enteric Fever.—The case of this disease occurred at a house in Johnson Square, at the back door of which was a defective and offensive drain. Owing to the want of a proper sewerage system there is often great difficulty experienced in draining houses; but this difficulty seems likely to be removed shortly.

Sewerage Scheme.—An arrangement with the Borough of Congleton, for Buglawton to be drained to the Congleton outfall-works, and the sewage treated there, is all but completed. Proper sewers will of course be laid throughout Buglawton.

Isolation Hospital Accommodation.—Early in 1902, the Buglawton District Council, in conjunction with the Town Council of Congleton, and several neighbouring District Councils, arranged provision for the isolation of small-pox cases at Arclid.

Disinfection of infected houses, clothing, &c., was attended to, as far as practicable.

Factory and Workshop Act.—One bakehouse and 8 workshops (all in the District) were inspected and found in proper order.

Dairies.—The premises of the 3 retail milk-sellers in the District have all been inspected and found in satisfactory condition.

Ashpits, &c.—The ashpits and privies are emptied regularly, and kept in as good order as is practicable.

The Medical Officer of Health inspected the whole District several times in the course of the year.

CHEADLE AND GATLEY

Urban District.

Medical Officer of Health—Dr. J. H. Godson.
Population at Census, on April 1st, 1901—7,916.
Estimated Population in middle of 1904—8,469.
Area in acres—5,086.
Birth-rate per 1,000 living—25.1.
Death-rate per 1,000 living—12.2.
Death-rate from seven principal Zymotic Diseases—1.3.
Deaths under one year to 1,000 births—111.

This Urban District was constituted by a Local Government Board Order, which came into operation in August, 1886. It was formed by uniting Stockport Etchells (including Gatley) with part of Cheadle (including Cheadle Hulme, Outwood, and part of the former parishes of Cheadle Bulkeley and Cheadle Mosley). The area of these two portions of the District and their Census population in 1901 were as follows :—

	Area in Acres.	Census Population.
Stockport Etchells ...	1572 ...	1776
Part of Cheadle	4240 ...	9044
	5812	10820

By Local Government Board Order, No. P. 1,711, which was confirmed by Local Government Board Provisional Orders Confirmation (No. 11) Act, 1901, and came into operation on November 9th, 1901, part of the Civil Parish of Cheadle and the Urban District of Cheadle and Gatley was added to the Civil Parish and County Borough of Stockport. The area of the Urban District was thus reduced by 726 acres, and the Census population was thus reduced by 2,904 persons. The figures at the date of the Census for the reduced areas were therefore as follows :—

Area in Acres	5086
Census Population (1901)	7916

The population of the whole District includes 140 enumerated at the Barnes Convalescent Hospital (Branch of the Manchester Royal Infirmary) and 431 enumerated at the Manchester Royal Lunatic Hospital, including St. Anne's Hospital, Brookside House, and Beech House. The Census population, exclusive of these institutions, was therefore 7345.

It is estimated that from the date of the Census to the middle of the year 1904, the population has increased by 553. The entire population of the District at Midsummer, 1904, was thus 8,469. Exclusive of the two institutions named above it was 7,794. The population of the Barnes Convalescent Hospital was 148, and the population of the Manchester Royal Lunatic Asylum was 527.

The population of the Warehousemen and Clerks' Schools was 268. Deducting this also, the Medical Officer of Health calculates his birth-rate and death-rate on a population of 7526.

During 1904 the number of births registered in the District was 189, and the number of deaths registered in the District (excluding 41 at the public institutions just referred to) was 92. Owing to the area of this District having been so much reduced in November, 1901, the statistics of the last three years cannot be properly compared with an average based on years prior to 1902. However, taking the figures for what they are worth, the birth-rate for 1904 is about 0.4 above the average in 1894-1903, and the death-rate of 1904 is about 2.0 below the average in the same ten years. The number of deaths from the seven principal zymotic diseases was 12, viz. :—3 measles, 3 scarlet fever, 1 diphtheria, and 5 diarrhœa, but 2 of the fatal cases due to scarlatina occurred at the Warehousemen and Clerks' Schools. There was also a fatal case of epidemic influenza and a fatal case of erysipelas.

The District is mainly residential and agricultural. The portion which has been taken from the District contains most of the local manufactories There only remain two bleach works, and these are well constructed. There are also a few brickmaking yards, mostly at Cheadle Hulme and Adswood.

Infant Mortality.—Twenty-one of those who died in 1904 were infants under one year old. This number is equal to 111 per 1,000 births. Of these deaths, 5 were due to diarrhœa, 3 to bronchitis, and 2 to premature birth.

Cases of Infectious Disease Notified.—During 1904 there were 105 cases of infectious disease notified, viz. :—7 diphtheria, 85 scarlet fever, 2 enteric fever, and 11 erysipelas. Sixty-two of the cases of scarlatina were at the Warehousemen and Clerks' Schools, and 1 of the cases of enteric fever was at the Barnes Convalescent Hospital. No case of infectious disease was notified at the Royal Asylum.

Action taken with reference to Infectious Disease.—As soon as a case of infectious disease is notified, the Medical Officer of Health at once visits the house, and with the Medical Practitioner in attendance, and the help of the Inspector, takes all possible precautions to prevent the spread of infection. When the Practitioner in attendance on the case reports that the house is ready for disinfection, it has been usual to fumigate it with sulphur or formaldehyde. This is the only means available at present, but is not reliable. Bedding and articles of clothing are sometimes sent to the Stockport Disinfecting Station, to be disinfected by steam; but this method of dealing with infectious material is expensive and inconvenient.

A Disinfecting Apparatus needed.—To insure that bedding and clothing are thoroughly disinfected, they ought to be disinfected by steam. A steam disinfector is greatly needed, and the Medical Officer of Health (who presented a Special Report upon the subject in February, 1898) hopes that the District Council will obtain one for the use of the District.

Bacteriological Examinations.—At the end of the year 1899 the District Council resolved that arrangements be made with Professor Delépine, of the Victoria University of Manchester, for having material from suspected cases of diphtheria and typhoid fever examined bacteriologically. This will be of great assistance in the diagnosis of doubtful cases, and may be the means of checking serious outbreaks of disease. During the year 11 specimens of pathological material were sent to Professor Delépine.

Vaccination.—There appears to have been no falling off in the efficiency of the arrangements made for the vaccination of children.

Measles and German Measles.—There were 7 outbreaks of German measles and ordinary measles. The first outbreak began in January at Cheadle Heath Day School, and spread to Cheadle Day Schools. So many children were prevented from attending school, and the disease was spreading so rapidly, that the Medical Officer of Health advised the District Council to order the schools to be closed for 3 weeks. The measure checked the spread of disease. Directly after the schools had re-opened, a few cases of ordinary measles were reported from Cheadle Heath Infant Schools, and the disease soon spread to Cheadle Day Schools. The disease was of rather a severe type, and the District Council were again advised to order the schools to be closed for 3 weeks. Later, advice was given for the closing order to be extended, and the schools were closed for a further period of 3 weeks. In July the disease spread to Long Lane, and the Medical Officer of Health had to advise the District Council to close this school for 3 weeks. Many of the children attacked suffered from both diseases, and in a great many cases pneumonia and bronchitis supervened on the second attack. There is no doubt that the disease would not have been so prevalent but for the carelessness of parents who allowed their children to run about while in an infectious state.

Scarlet Fever.—During the last half of the year many cases were notified, but as already stated, 62 of them were at the Warehousemen and Clerks' Schools. Of the 22 cases belonging to the District, 14 occurred at Cheadle Hulme, 8 at Cheadle, and 1 at Adswood. Of the 14 cases in Cheadle Hulme, 8 occurred among children attending one of the day schools, the source of infection could not be ascertained, but, after a few cases had been

notified, the Medical Officer was informed that a child had been sent home from school "peeling." The Medical Officer visited the child, and found that this was the case, and that the parents had not the least idea as to what disease this symptom indicated. The attack must have been very mild. The child was isolated, and other children in the family were not allowed to attend school for six weeks. The Medical Officer of Health frequently visited the schools, examined the children, and did all that he could to prevent the infection from spreading, with the result that no further cases were notified in connection with this school. In one case the patient had been staying in the same house with a relative who had just recovered from the disease. In another case the patient was a schoolmistress, and appeared to have contracted the disease outside the District. Other cases occurred in which infection was certainly received outside the District. Of the 8 cases in Cheadle, 3 occurred in one family, the infection having been imported from outside. The only fatal case among those belonging to the District was that of a child 2 years old. In this case the source of infection could not be traced. The patient notified at Adswood belonged to a farm, and special precautions had to be taken to prevent the milk becoming in any way infected. The case was removed as soon as possible to the hospital at Baguley. In all 5 cases were sent to this hospital.

At the Warehousemen and Clerks' Schools there were two distinct outbreaks, that is 31 cases occurred from April to June, and 31 from September to December. On receiving the first notification inquiries were made from the Medical Officer of the institution as to the origin of the disease, but he was unable to give any information. In June, during the summer vacation, the bedding and clothing of the whole institution were thoroughly disinfected. Yet, about 4 weeks after the school re-opened, the disease broke out again, and cases were being notified up to the middle of December. The cause of the re-appearance of the disease was not traced. All the cases were treated in the School Sanatorium, 2 in the first outbreak proved fatal.

Diphtheria or Membranous Croup.—7 cases were notified, 5 being in Cheadle Hulme, and 2 in Cheadle. Of the 5 cases in Cheadle Hulme 2 occurred in the same family, but it was not ascertained from whom the patient contracted the disease, which was mild in type. The diagnosis was confirmed by the bacteriological examination. Three other cases occurred among members of one family, and one case proved fatal. It was thought that the disease was caused by one of the patients having been exposed to foul air from a drain which was opened up. All possible precautions were taken to prevent spread of the disease. Eight specimens of material from suspected cases were sent for bacteriological examination, and, of these, seven gave negative results. The two cases at Cheadle were sent to the Hospital at Baguley.

Antitoxin.—In one case of diphtheria the Medical Officer of Health was asked to supply antitoxin. As no antitoxin has been provided by the District Council the Medical Officer of Health suggests that a supply should be obtained for the convenience of medical practitioners, who do not store it, and that it should be issued gratuitously in suitable cases.

Enteric Fever.—Two cases were notified including one at the Convalescent Hospital. The case at the Convalescent Hospital was removed to Monsall Fever Hospital. The other case occurred in Cheadle, and was of a very mild type: no specimen was taken for bacteriological examination. In two very suspicious cases specimens were sent for bacteriological examination, but in each case it gave a negative result.

Erysipelas.—In most of the 11 cases notified the head and face was affected. Generally, the type of disease was mild. However, in one case, the patient was over 80 years of age, and complications arose, the disease proving fatal.

Influenza was prevalent during the spring of the year and also in December. It was of a mild type. One death was registered as due to influenza and its complications.

Diarrhœa was prevalent in the summer and early autumn, especially among infants and young children under five years of age. The 5 who died were infants who had not completed their first year.

Isolation Hospital Accommodation.—The District Council have been in negotiation with the Withington Urban District Council as to retaining beds for scarlet-fever and enteric fever at the new Isolation Hospital at Baguley. Arrangements have been made to retain three beds, which will be sufficient for the needs of the District.

The District Council have also, jointly with Heaton Norris Urban District Council, erected an Iron Hospital, of eight beds, on the vacant land near the Sewage Outfall Works, for cases of small-pox. Although quite ready for the reception of patients it has not been used.

The Barnes Convalescent Hospital, by agreement, send their infectious cases to the Monsall Hospital; and the Warehousemen and Clerks' School have their own Sanatorium. The Manchester Royal Lunatic Hospital isolate their infectious cases in one of their own cottages.

Water-supply.—The supply is from the Stockport Corporation Water Works, and is sufficient for the needs of the District. There was a curtailment of supply during the prolonged

dry weather in September and October. At times it was very discoloured and turbid, being hardly fit for domestic purposes.

New Houses.—Thirty-one new houses were built and occupied during the year. They were nearly all cottages situated in Cheadle Ward.

The Medical Officer of Health notes that there are now several streets in which the houses have not been numbered. It would facilitate the work of his department if this numbering were done as soon as possible.

Schools.—The Medical Officer of Health inspected the elementary schools from time to time, and found the sanitary arrangements satisfactory, and the playgrounds dry and well drained. In one instance the playground was noticed to be too small.

Schools have been frequently visited, at the request of the Masters, to examine pupils suspected of being infected, when any infectious disease is prevalent.

Main Drainage and Outfall Works.—The sewerage scheme was completed during the year 1901. However, some extensions were effected during 1903 and 1904. The District is now provided with an efficient sewerage system in good working order.

The effluent from the filter-beds has been reported good each time a sample had been analysed for the Mersey and Irwell Joint Committee.

There are still 14½ acres which can be used for land filtration when occasion arises. At present this land is not wanted, owing to a portion of the District having been incorporated with Stockport.

Pollution of a Stream.—Several complaints have been made of effluvia from a stream, known as the Micker Brook, during the hot weather in the summer. The Inspector was instructed to take samples at various parts of the stream, and it was found that the stream most probably was being polluted by the effluent from some works on the banks. Steps have been taken to abate the nuisances. The Mersey and Irwell Joint Committee have the matter in hand.

Improvements.—The work of paving, sewering and channelling several private streets in Cheadle Hulme was begun at the end of the year. There are still a few private streets which are in a very bad condition, especially in wet weather. The sewers in several streets have been connected up with the main sewer, and the lighting of a few has been improved.

Factory and Workshop Act.—This new Act came in force on January 1st, 1902. It requires Medical Officers of Health to report specifically on the administration of the Act in Workshops and Workplaces. There are 44 workshops in the District, including 9 domestic workshops, 12 retail bakehouses, 1 laundry, and 22 other workshops. The chief workshop industries are bleaching and brickmaking, and silk hand-loom weaving. The premises are all clean, the air-space per head is well above the limit required by the Act, and the ventilation was found sufficient. The sanitary conveniences were found adequate and suitable. All are regularly visited by the Inspector, and occasionally by the Medical Officer of Health.

The general sanitary condition of the bakehouses was found good. There are no underground bakehouses.

Information of outworkers has been received from two employers. The 3 out-workers brought under notice are employed in connection with wearing apparel.

Dairies and Cowsheds (46 in all) have been inspected by the Medical Officer of Health and Inspector. On the whole, the premises have been clean and the animals well kept. Several alterations and improvements as regards lighting and ventilation have been carried out. The Inspector, in 1903, drew up a report on the lighting, ventilation and air-space per cow of every cowshed in the District, and the District Council appointed a Sub Committee to go into the matter. Where they considered alterations necessary suggestions were made. With few exceptions the work suggested has been done.

Sale of Food and Drugs Acts.—One sample of milk, and 6 samples of other food were taken and submitted for analysis. All were found pure.

Slaughter-houses.—These (4) are all still unlicensed. They were inspected and found clean and well kept.

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

No Offensive Trades, so far as is known, are carried on in the District.

No Common Lodging-houses are in the District.

Inspector's Report. — The Inspector (Mr. Fernley) reports that during the year, there were but 9 complaints (exclusive of those in respect of house refuse removal), and that 992 houses were inspected or re-inspected. Fourteen houses were re-drained and connected to the public sewers. The drains in 11 other houses were put in order. Thirteen dust bins were provided, in

place of 13 ashpits abolished on 46 premises. Waste-pipes and rain-pipes have been repaired and disconnected.

Observations were taken by the Inspector on the amount of black smoke emitted from the chimneys of various Works In 1899 the District Council agreed on a time limit for the emission,

Refuse Removal.—The emptying of ashpits, etc, is supervised by the Inspector. The number of loads of refuse removed during 1904 was 3623.

Cemetery.—It has been stated in previous Reports that the various burial grounds in the District are almost full, and in the Report for 1900, that land has been found for a cemetery, and that plans for laying out the same had been prepared. This land was purchased in 1901, and the work of laying it out has since been in progress. The Cemetery was formally opened by the Chairman of the District Council in April, 1903; and the Church of England part was consecrated by the Bishop of the Diocese in June. It has since been used for interments.

COMPSTALL

Urban District.

Medical Officer of Health—Dr. C. H. Hibbert.
Population at Census, on April 1st, 1901—875.
Estimated Population in middle of 1904—880.
Area in acres—903.
Birth-rate per 1,000 living—20.4.
Death-rate per 1,000 living—14.7.
Death-rate from seven principal Zymotic Diseases—1.1.
Deaths under one year to 1,000 births—222.

By Local Government Board Order, No. 42,748, which came into operation on April 1st, 1902, the Civil Parish of Compstall was constituted an Urban District. The population of Compstall at the Census, 1901, was 875, and the population of the same area at the Census in 1891 was 1,012. The decrease in the population during the decennium, 1891—1901, was therefore 137, that is 13.5 per cent.

Before being constituted an Urban District, Compstall formed a portion of Stockport Rural District.

The District lies on the north-west of the River Etherow, which separates it from the Parish of Ludworth, in the County of Derby. On the north is the Borough of Hyde, on the west and south-west is the Urban District of Bredbury and Romiley, and on the east and south-east is the County of Derby.

Compstall U. D.

The District is hilly, and the subsoil is chiefly clay and sand, with underlying rock.

The greater portion of the houses are situate at the lower part, and on the south-east side of the hill on which the District lies. This part is urban in character, the remainder of the District being rural, and consisting chiefly of farmhouses and agricultural land.

During 1904 the number of births registered in Compstall was 18, and the number of deaths registered in Compstall (including the death of one resident registered elsewhere) was 13. The birth-rate is low. The death-rate is above the local average. The causes of the 13 deaths were as follows: 1 measles, 1 tubercular disease, 2 bronchitis, 1 pneumonia, 4 heart diseases, 2 senile decay, 1 convulsions and 1 marasmus.

Infectious Disease.—There were 4 cases of infectious disease notified, viz.: 1 diphtheria, 2 scarlet fever, and 1 enteric fever.

The Medical Officer of Health recommends that measles and phthisis should be made notifiable.

Diphtheria.—The case of diphtheria occurred in January. It was a mild case, and could be properly isolated at home. Disinfection was carried out. No cause could be found.

The District Council have obtained a supply of anti-diphtheritic serum for use in cases of diphtheria.

Scarlet Fever.—One case occurred in August and one in September. The cases were isolated at home, and precautions taken to prevent the spread of infection.

Enteric Fever.—The case occurred in September, and was isolated at home. This patient had been unwell for some days before he consulted a medical man. The contents of the ashpit were removed, and the ashpit was well disinfected. The drains of the premises were not in a satisfactory condition, and defects noticed were remedied.

Measles.—The fatal case of this disease (the only case known to the Authority) was thoroughly isolated at home. The patient died owing to pneumonia supervening.

Action Taken to Prevent Spread of Infection.—On a case of infectious disease being notified, the premises are examined, and if defects are found the owners are required to remedy them. The patients are isolated as far as practicable, and the rooms, bedding, and clothes are afterwards disinfected. Disinfectants are supplied free. Parents are instructed to keep mem

bers of infected families from attending school or mixing with other children till all risk of infection is over.

The Headmaster of the District School also affords much assistance by reporting any suspected cases of infection.

Isolation Hospital Accommodation. — The District Council have made arrangements with the High Peak Hospital Committee for cases requiring isolation to be admitted to the Chinley Isolation Hospital. The Medical Officer of Health is of opinion that the needs of Compstall in this respect will thus be met.

Disinfecting Apparatus needed.—There is no disinfecting apparatus, and one should be provided.

Water-supply.— This is obtained from springs on the upland, and stored in two reservoirs. The water is soft and clear, and of good quality. The supply is ample. The reservoirs are cleaned by lime every spring.

The rural parts are supplied principally from springs and shallow wells. These (especially the shallow wells) require careful protection from contamination.

Industries.—The industry of the District is that of spinning and weaving, which is carried on at Compstall Mills by the Calico Printers' Association. The majority of the inhabitants of the District are employed at these Mills, the remainder of the adult population being employed at Works outside the District, or on the farms.

Factory and Workshop Act, 1901.—The Medical Officer of Health and Sanitary Inspector have carefully inspected the Mills. The rooms, with one exception, were whitewashed and clean. The ventilation was good and the closets were in order. The pails are emptied regularly and disinfected.

Inhabited Houses.—In June, 1904, there were 218 in the District. These are adequate. The houses are well-built and dry, and there are plenty of open spaces. No new houses were erected during the year.

Refuse Removal.—The removal of excreta and other refuse is done regularly, and the ashpits are well disinfected after being emptied. A portion of the household refuse is removed to a tip a good distance away, and buried.

The Sewers, which carry slop-water only, have their outlet in a reservoir, which stores water for a turbine.

Eventually the sewage is discharged into the river.

Dairies and Cowsheds have been inspected, and were found clean, ventilated and in good condition.

Dairies Regulations.—Under the Conforming Order for the Constitution of the Compstall Urban District, any regulations under the Dairies, Cowsheds, and Milkshops Order of 1885, and any Bye-laws of the Stockport Rural District Council or their predecessors, in force on the 14th April, 1902, (the date of the first meeting of the Council), are to be deemed to be in force as if made by the Compstall Urban District Council.

Slaughter-house.—There is only one slaughter-house in the District. This is kept clean and sanitary, but the lair in connection therewith requires draining.

No Offensive Trades are carried on in this District.

Nuisance Abatement.—The Inspector reports that 23 cases of nuisance were entered in his book during the year. Eleven of these were complained of. Three formal notices were served.

The Burial Ground Accommodation is sufficient.

ELLESMERE PORT AND WHITBY

Urban District.

Medical Officer of Health—Dr. G. A. Kenyon.
Population at Census, on April 1st, 1901—4,082.
Estimated Population in middle of 1904—4,157.
Area in acres—1,261.
Birth-rate per 1,000 living—37.9.
Death-rate per 1,000 living—11.6.
Death-rate from seven principal Zymotic Diseases—1.4.
Deaths under one year to 1,000 births—109.

By Local Government Board Order, No. 42,750, which came into operation on April 1st, 1902, the Civil Parish of Whitby was constituted an Urban District named Ellesmere Port and Whitby. The population of this area at the date of the Census in 1901 was 4,082. The population of the same area at the date of the Census in 1891 was 5,107.

During 1904 the number of births registered in this District was 156, and the number of deaths belonging to the District (including one at the Isolation Hospital, and 2 at the Chester Infirmary) was 48.

The birth-rate for 1904 (37.9) compares favourably with the corresponding rate for 1903 (30.8). The death-rate

for 1904 (11.6) compares favourably with the corresponding rate for 1903 (12.7).

Seventeen of those who died were under a year old, and 12 were persons 65 years old and upwards.

Six deaths were due to the principal zymotic diseases, viz., 3 whooping-cough, 2 diphtheria, and 1 enteric fever. There was one death from septic disease and one from cancer. There were 3 deaths from enteritis, 2 from phthisis, 13 from bronchitis or pneumonia, 3 from premature birth, 2 from heart diseases, and 3 from accidents.

Cases of Infectious Disease notified.—There were 44 cases of infectious disease notified, viz.:—3 diphtheria, 9 scarlet fever, 16 enteric fever, and 16 erysipelas. Two cases of scarlet fever, and 10 cases of enteric fever were sent to the Spital Isolation Hospital. Other cases were, as far as practicable isolated at home. Excluding erysipelas, there was no case of infectious disease in the District till June.

Enteric Fever commenced in September, during which month there were 9 cases. These were followed by 5 cases in October. Eight of the cases occurred in Worcester Street, where many patients had been attacked before the disease was recognised. The disease thus got a hold of the locality, especially in this street, where the sanitary accommodation provided consists of privy-middens. Everything possible was done in the way of isolation and disinfection..

There was nothing to suggest conveyance of infection by milk or other article of food, and though all the patients had the same water supply there is no reason to believe that infection was thus conveyed. Had the water been at fault the cases would have been much more numerous.

Isolation Hospital Accommodation is provided for this District and other parts of the Wirral Union by the Wirral Joint Hospital Board.

Inspection.—The Medical Officer of Health visited the District from time to time, and gave advice on points of detail in connection with sanitary work.

Water-supply. — The District is supplied with water from the West Cheshire Water Works.

Sewering.—The District is sewered where built upon, except as regards a few outlying dwellings, such as those at Whitby Heath.

Removal of Excreta.—The disposal of excreta is partly by water-closets, and partly by combined ashpit-privies. The latter are constructed entirely above ground and kept in as good order as practicable.

Report of Surveyor and Contractor.—Mr. Hudson, the Surveyor and Inspector of Nuisances, makes a very complete and satisfactory report. He states that during the year 120 houses were specially inspected and re-inspected, 12 back-yards were repaired and put in sanitary condition, in 5 houses obstructed drains were opened and cleansed, on 8 premises the drains were properly ventilated, at 6 houses new drains were put down, 8 inspection chambers were ventilated, 20 ashpits were rebuilt and cemented over, 40 new dust bins were provided, and 70 privy middens were converted into water-closets, and the pits abolished, being deodorised and filled up. In 3 instances accumulations of refuse were removed. A large number of fowls and pigeons (so kept as to be a nuisance) were removed from 30 houses. Four nuisances from overcrowding were abated.

Private Street Works Act.—Five back passages were paved under the provisions of this Act.

New Houses.—During the year there were 28 plans for new houses submitted to the District Council and approved. The building of 15 new houses was supervised, and the houses were certified to be in accordance with the bye-laws.

Building Bye-laws.—The model Building Bye-laws are in force in the district.

Refuse Removal is done by a contractor employed by the District Council. The contract provides for the emptying of privies and ashpits once a month at least, but it has not been carried out quite satisfactorily.

Sewer Flushing.—The main sewers are regularly flushed once a month.

Dairies, &c.—Six cowsheds have been regularly inspected.

Slaughter-houses. — Two slaughter-houses have been regularly inspected.

Factory and Workshop Act.—Attention is being given to the carrying out of this Act. A register has been formed of the various premises. Four factories, three dressmakers' workshops, one tailor's premises, three bakehouses, and two other workshops have been inspected. They were kept in good order.

Canal Boats have been inspected once a month. In all 30 boats have been inspected. Five boats were found in default. In four boats the cabins were very unclean, in two the cabin floors needed repair, and in one the water from above leaked into the cabin. Notices were served on the owners, and the defects remedied.

HALE

Urban District.

Medical Officer of Health—Dr. C. W. Jones.
Population at Census, on April 1st, 1901—4,562.
Estimated Population in middle of 1904—6,333.
Area in acres—1,288.
Birth-rate per 1,000 living—18.0.
Death-rate per 1,000 living—7.4.
Death-rate from seven principal Zymotic Diseases—1.1.
Deaths under one year to 1,000 births—70.

By a Local Government Board Order, which came into operation on April 1st, 1900, the Civil Parish of Hale was constituted an Urban District.

The population of this District was 4,562 at the Census in 1901, and the population of the corresponding area was 2,575 at the Census in 1891. The increase of the population during the decennium 1892-1901 was thus 1,987; that is 77 per cent. The estimate of the population made for the middle of 1904 (6,333) seems rather high. It is based on the number of inhabited houses.

During 1904 the number of births was 114, and the number of deaths (including 3 deaths of persons belonging to the District, 1 being at Knutsford Workhouse, 1 at Baguley Sanatorium and 1 at Openshaw) was 47.

The number of births in 1903 was 124; in 1902 the number was 100, and in 1901 the number was 83. The number of deaths in 1903 was 42; in 1902 the number was 57, and in 1901 the number was 63. Birth-rate and death-rate were in 1904 below the average.

In 1904 there were 7 deaths from the principal zymotic diseases, viz.:—3 measles, 1 scarlet fever, 2 whooping-cough, and 1 diarrhœa. There was a death from influenza, a death from puerperal fever, and a death from other septic disease. Among other causes of death were the following:—2 enteritis, 4 phthisis, 1 other tubercular disease, 3 cancer, 3 bronchitis, 6 pneumonia, 4 brain disease and 2 heart disease.

Cases of Infectious Disease Notified.—The number of cases of infectious disease notified in 1904, was 35, viz.:—5 diphtheria, 25 scarlet fever, 2 enteric fever, 1 puerperal fever and 2 erysipelas. Of these 17 cases were removed to Baguley Sanatorium, viz.:—2 diphtheria and 15 scarlet fever. One of the cases of scarlet fever proved fatal at Baguley. Three cases of measles were notified voluntarily.

The Medical Officer of Health is in favour of the voluntary notification of measles and chicken-pox, as a mild case of small-pox may be mistaken for either of these diseases.

Notification of Suspected Cases.—The Medical Officer of Health points out that it is desirable to encourage the notification of suspected cases of infectious disease (especially suspected cases of diphtheria) by paying for them.

Small-pox.—When small-pox was in Districts contiguous to Hale, 2 residents were reported as having been exposed to infection. These were visited and kept under supervision, and preventive measures were taken.

Diphtheria did not make its appearance till the end of March, a solitary case then arising in Queen's Road. Entire freedom from this disease then existed till the middle of October, when a case occurred in Ashley Road, two cases occurred in the middle of November in Warwick Drive and Park Road respectively, whilst the last case during the year occurred late in December in Cedar Road. Evidently the cases had separate sources of origin.

Scarlet Fever has existed throughout the year with the solitary exception of the month of February. September had the greatest number of cases, viz. : 6 ; whilst March, July and October had 3 each ; June, November and December 2 each ; 1 case only occurring in each of the remaining months of the year.

Enteric Fever.—The two who suffered from this disease were aged 12 years and 3 years respectively. The diagnosis was not confirmed bacteriologically.

Erysipelas, which comes under the category of compulsorarily notifiable infectious diseases, was responsible for two cases, both mild ones, occurring in adults over 50 years. They were probably cases of erythema rather than true erysipelas.

Measles, taking the form of a sharp outbreak of this disease in the Halebarns area, necessitated the closing of the schools. This was effective in curtailing it. Notwithstanding this, only three informal intimations reached the Medical Officer of Health during the year. Cases elsewhere in the District were not reported. One fatal case occurred and its existence was only discovered by the Registrar's return of the death.

Bacteriological Diagnosis.—Since 1900 facilities have been given to Practitioners to have morbid products from suspected cases of diphtheria and enteric fever tested bacteriologically.

The Infectious Disease Prevention Act, 1890, was adopted by the District Council in November, 1891. This should prove of much value.

Isolation Hospital Accommodation.—The Hale Urban District succeeds to the arrangements already made by the Bucklow Rural District Council and the Bucklow Joint Hospital Board. There has thus been accommodation for cases of infectious disease at Baguley since December 8th, 1902, the day on which the Withington Hospital was formerly opened for the reception of patients.

Ashpit-privies.—The Medical Officer of Health again brings before the authority the pressing need for the discontinuance of ashpit-privies, whenever and wherever possible. The depositing of excremental liquid upon the roadway, which inevitably occurs when these privies are emptied, is most objectionable and certainly dangerous to health.

Water-Supply.—The water supplied to Hale is satisfactory. It is important that the water mains should be regularly flushed; and it is not less necessary that householders should systematically cleanse cisterns and domestic filters.

Milk-Supply.—A systematic inspection of the dairy buildings and cow-sheds in the Urban District has been made by the Medical Officer of Health, accompanied by the Inspector's assistant, and the results have been reported to the Sanitary Committee. Milk being derived from many farms both within and without the District, makes supervision very difficult of accomplishment.

The Urban District Council have made Regulations under the Dairies, Cow-sheds, and Milkshops Order.

New Houses.—In the middle of 1904 the number of inhabited houses was 1,337, which is an increase of 93 on the number of houses in the middle of 1903.

New Streets and Roads.—In the construction of new streets and roads much good work has been done. The roads to the north of Hale Road are completed, or being completed, except Stamford Park Road, the sewering of which had to wait the completion of the first part of the contract. This is now being proceeded with, and ought to be urgently pressed forward.

Halebarns Schools.—The Medical Officer notes that the removal of the insanitary privies from the outbuildings of these schools and providing of water-closets has been accomplished. The schools have also been re-floored and the ventilation improved.

Sewage Treatment.—The treatment of the Sewage at the Outfall Works is twofold, viz. :—

(a) By septic tank followed by bacteria beds, and this by broad irrigation.

(b) By chemical precipitation followed by broad irrigation.

The two methods, as now working, appear to be fairly satisfactory, the report of the Mersey and Irwell Committee on the effluent being favourable.

The re-construction of the bacteria beds belonging to No. 3 outfall was noted in the Report for 1903. These beds the Medical Officer of Health states ought to be worked to the full extent, but they are not. The chemical precipitation (by alumino-ferric) followed by irrigation, is open to the great objection that the effluvium arising from the sludge constitutes a nuisance, and is moreover costly in practice and irregular.

The disposal of the sewage from the north watershed at present constitutes one of the District Council's difficulties, but the new sewer, to deal with this part of the District, is being constructed, and the contractor is making fair progress.

Refuse Removal.—The emptying of ashpits and complaints relative thereto have had the attention of the Inspector. During the year 1,329 cart loads of refuse were removed.

Disinfection—The method of disinfection still in use here is by formaline gas. Strong points in its favour are the absence of deleterious action on household effects, and the facility with which the gas can be generated. The disinfection of bedding and other bulky articles is at present satisfactorily done, upon payment, at the Altrincham steam-disinfector.

The recent proposal of the Bucklow Joint Hospital Board to erect complete Disinfection Premises and Appliances on Hale Moss, if approved and carried out, will greatly add to Hale's facilities in this respect and is to be welcomed.

The Factory and Workshop Act, 1901, which came in force on January 1st, 1902, confers greatly increased powers of Inspection on a Medical Officer of Health in dealing with wash-houses, millinery and tailoring establishments, etc., of a quasi-private nature, and appears to be specially adapted for dealing effectively with such small concerns as may exist in Hale. In this District, bakehouses, builders' workshops, bootmaking and repairing shops, milliners' and tailors' shops, etc., are such as come under the operation of the Act. The special provisions relating to underground bakehouses which came into force on January 1st, 1904, were dealt with by the appointment of a Sub-Committee, which visited, inspected, and reported upon all bakehouses in the District. It was found necessary to condemn one underground bakehouse, and to require alterations in the ventilation, etc., of another one. The underground bakehouse has been replaced by one above ground, and the alterations in ventilation are almost completed.

No Slaughter-houses or Offensive Trades exist in this District.

Periodical Inspections of the whole of the District have been made during 1904 by the Medical Officer of Health.

Nuisance Abatement.—The Inspector of Nuisances, Mr. Thos. Blagburn, reports that the number of inspections made by him in 1904 was 222. Nuisances complained of or discovered received attention.

HANDFORTH

Urban District.

Medical Officer of Health—Dr. J. Watts.
Population at Census, on April 1st, 1901—911.
Estimated Population in middle of 1904—911.
Area in acres—1,312.
Birth-rate per 1,000 living—12 0.
Death-rate per 1,000 living—10.9.
Death-rate from several principal Zymotic Diseases—0.
Deaths under one year to 1,000 births—0.

All that remained in Stockport Rural District in 1903 was the Civil Parish of Handforth. This Parish lies between the Urban District of Cheadle and Gatley, on the north, and the Urban District of Wilmslow on the south. The subsoil is sand and clay.

This District obtained Urban powers, being constituted the Urban District of Handforth in September, 1904 Early in October, an Urban District Council was elected, and in November and December officials were appointed and approved by the Local Government Board.

For the purposes of the Annual Report it is convenient to regard the District as one and the same in 1904, though during the year it has changed its name and been re-constituted.

The District is mainly agricultural. There is one bleach-works (worked by the Bleachers' Combine) which gives employment to about 140 men, women, boys and girls. The works are well-constructed, and the health of the operatives is good. There is also one small brewery in the District.

During 1904 the number of births was 11, and the number of deaths was 10.

Among the deaths was one from phthisis, one from heart disease, one from pyæmia, one from cerebral hæmorrhage, one from epilepsy, one from senile decay, and two from accident.

Handforth U. D.

Cases of Infectious Disease.—Four cases of infectious disease were notified, all being cases of scarlet fever. All occurred in December, 2 being in one house. The disease was of a mild type. The cases were investigated, and proper precautions were taken to prevent the spread of infection. The houses where the cases occurred were examined to ascertain their sanitary condition.

Measles was prevalent during August and September.

Antitoxin has been provided for use should cases of diphtheria be notified.

No Isolation Hospital Provision has been made. "The Council would do well to arrange with some Authority having a Hospital, for the isolation of cases of infectious disease."

Factory and Workshop Act.—The bleach-works and brewery, already referred to, have been inspected. They are clean, well ventilated, have sufficient air-space, and suitable sanitary accommodation.

Housing Accommodation for the working-classes is, with few exceptions, good. There are 193 inhabited houses in the District. There is a sufficiency of open space about the premises, and the surroundings are healthy. Five new houses are in process of erection.

No Common Lodging-houses are in the Handforth District.

Lighting.—Most of the houses are lighted with gas supplied by the Wilmslow Gas Company. The roads are not provided with artificial light, and during winter much inconvenience, and even danger, is caused owing to the want of light.

Water-supply.—The District is supplied by the Stockport Corporation. The water is of good quality and sufficient.

Main drainage Needed—A system of main sewers is still needed at Handforth, and should be provided. The present system of draining into open ditches constitutes a danger to the public health. Owing to these ditches having insufficient fall, foul matter readily accumulates in them, and after being cleaned out they soon become polluted again. The time has come when the proper drainage of Handforth should be taken in hand. The Medical Officer of Health trusts that some definite steps will be taken in 1905.

Cowsheds are regularly inspected, and have been found clean, well ventilated, and well kept.

Slaughter-houses.—There are 2, which are regularly inspected, and kept clean and in order.

Handforth U. D.

Nuisance Abatement.—Mr. H. H. Turner sees that proper steps are taken to abate all nuisances reported or discovered.

No Offensive Trades are carried on in the District.

HAZEL GROVE AND BRAMHALL

Urban District.

Medical Officer of Health—Dr. T. Moore.
Population at Census, on April 1st, 1901—7,934.
Estimated Population in middle of 1904—8,862.
Area in acres—5,448.
Birth-rate per 1,000 living—18.9.
Death-rate per 1,000 living—13.99.
Death-rate from seven principal Zymotic Diseases—0.01.
Deaths under one year to 1,000 births—154.

During the year 1901 the County Borough of Stockport obtained an Extension Order, under which 624 acres belonging to this District, having a population of 1,857, were annexed; but as this Order did not take effect till November 9th, 1901, it was convenient to consider the transferred area and population as belonging to the Urban District and the Administrative County till the close of the year 1901.

The population of the reduced area is estimated to have been 8,862 in the middle of the year 1904. It is calculated that each occupied house would average a population of 4.5 persons.

In 1904 the number of births was 168, and the number of deaths (including 2 of residents who died elsewhere) was 124. The birth-rate does not compare favourably with the birth-rate in 1903 (21.8), and the death-rate does not compare favourably with the death rate in 1903 (12.7).

Among the deaths in 1904 were 26 of infants under a year old. This is a large proportion.

The principal causes of death were as follows:—1 small-pox, 1 influenza, 3 enteritis, 7 phthisis, 21 other tubercular diseases, 5 cancer, 17 bronchitis, 14 pneumonia, 3 alcoholism and 16 heart diseases.

Cases of Infectious Disease Notified.—There were 22 cases of infectious disease notified, viz.: 8 small-pox, 1 diphtheria, 12 scarlet fever, and 1 enteric fever. The cases of small-pox were all isolated in the Whitehill Hospital, Stockport, or in the Hyde Isolation Hospital. As regards the other patients, sufficient accommodation was available at home, and it was not considered advisable to remove them.

Action taken to Prevent Spread of Infection.—Whenever a case of infectious disease has occurred, the Inspector and his staff thoroughly disinfect everything about the house and all clothing. By order of the District Council, leaflets, giving instructions as to the best mode of procedure to prevent the spread of the disease, have been distributed. The Medical Officer of Health emphasises the very great need for close observation of these instructions. In every case of enteric fever the premises are carefully inspected, and all sanitary defects are remedied as far as possible.

In the case of small-pox, if possible, the patients are sent to hospital. Great care is taken to disinfect every "contact." All of those who will submit to it are re-vaccinated.

The "Memorandum on Small-pox and Vaccination," by the County Medical Officer of Health, a circular which is supplied by the County Council, has been distributed.

Isolation Hospital Accommodation.—The District Council have arranged with Hyde Corporation to have two beds in the Isolation Hospital reserved for the use of the District.

Infectious Disease (Prevention) Act, 1890.—This Act came in force in this District on September 6th, 1904.

Small-pox.—The question as to how cases of this disease arise is often very difficult to answer. After careful enquiry it was found that the first case in 1904 was imported from a lodging-house in the adjoining town, where small-pox had been prevalent.

Particulars of the 8 cases are as follows :—

When Notified.	Age.	Sex.	Occupation.	Vaccinated in Infancy.	Re-vaccinated.	Character of Eruption.
May 19 ...	55 yrs.	M.	Collier ...	Yes	No	Discrete
June 4 ...	30 yrs.	M.	Collier ...	Yes	No	Discrete
,, 6 ...	23 yrs.	M.	Collier ...	Yes	No	Confluent
,, 6 ...	50 yrs.	M.	Licensed Victualler	Yes	No	Discrete
,, 11 ...	31 yrs	M.	Nightsoilman ...	Yes	No	Discrete
,, 25 ...	28 yrs.	F.	Housewife ...	Yes	No	Discrete
,, 25 ...	6 yrs.	M.	None ...	No	No	Confluent
,, 30 ...	34 yrs.	F.	Housewife ...	Yes	No	Discrete

As already stated, all these patients were sent to hospital, where one (the third on the list) died. Three were sent to Whitehill Hospital and 5 to Hyde Hospital.

A Supply of Antitoxin.—The District Council have provided a supply of antitoxin for diphtheria cases.

Water-supply—The water supplied to the District is good. It comes from the Disley Reservoirs of the Stockport Corporation.

There are, however, isolated cases where pump well-water is still in use. These wells ought to be discontinued, the growth of the District makes the risk of percolation in such wells more and more each year, and this class of water is often from doubtful sources.

Home Accommodation for the working-classes is good and sufficient.

New Bye-laws.—New Bye-laws with respect to new streets and buildings and to the subjects which come under the general perview of the Council, were approved on the 2nd Dec., 1902, and by the Local Government Board on the 2nd Jan., 1903, and are now in force throughout the district.

These Bye-laws have been favourably commented on by many authorities, and referred to as having been drawn with very great care to bring them up-to-date.

New Houses, &c.—Sixty-six plans were submitted and approved during 1904. These plans were for 58 houses, a new street and a few shops, and 31 miscellaneous buildings, alterations, and additions.

Ashpit-privies.—There still remain many of these pits, which should be done away with. Each receptacle should be roofed, and have a bottom at least six inches above the level of the yard adjoining. House-holders should also see that vegetable refuse, etc., are thrown behind the fire and burned, and not put into ashpits. The privies should be converted into water-closets, or if this is not practicable, into pail closets. If possible, the water-closet is preferable.

Refuse Removal. — Having this work done by the employees of the Urban District Council has effected an improvement. Much of the work is now done in the night time and accumulations of night-soil are no longer thrown into the street in the day time.

Tips have been provided in suitable places, which will satisfy requirements for some years.

During the year 2,381 emptyings were done, and 2,752 loads of refuse were carted away. The annual cost, including manual labour, team labour, and rent and repair of materials, was £337.

Hazel Grove and Bramhall U. D.

Sewerage and Sewage Treatment.—There are two drainage areas, viz.: Hazel Grove and Bramhall. In the Hazel Grove area are included Bosden, Norbury, Torkington, Offerton, and the East Ward of Bramhall. In the Bramhall Area are included the South Ward of Bramhall and a portion of the North Ward. The Hazel Grove sewage is dealt with by precipitation at the Offerton Sewage Works, which are in fairly good condition. The Bramhall Drainage Area System and Outfall Works were completed in 1902, and are in operation. At these works the sewage is dealt with bacteriologically. Practically the whole of the area is connected with the system. In some instances the private drains connected with the sewer have been overhauled and re-arranged.

The defects which formed the subject of complaints during 1903 have been remedied, and the whole sewerage system is now in good working order. The reports received from the Mersey and Irwell Commissioners have been satisfactory. Of 6 samples taken from the Offerton Works 4 were good, 2 fair; and of 3 samples from Bramhall all were good.

The Torkington sewer is now in full work.

All the sewers in the District are periodically flushed.

Nuisance Abatement.—Nuisances complained of or discovered are promptly investigated by the Inspector, and, if desirable, inspected by the Medical Officer of Health Most nuisances are dealt with at once, the owner or tenant accepting the suggestions made. Reports are made at the monthly meetings of the Sanitary Committee, and such action is taken as may be deemed desirable. Only nine statutory notices were served during 1904.

Unpaved Streets.—During wet weather the side streets which are unpaved get into bad condition. The paving of these should be considered by the District Council.

Lighting.—The gas supplied by Stockport Corporation is very often deficient in pressure, or the gas is of bad quality. The light is ordinarily poor, and worse at times.

Factory and Workshop Act.—Effect has been given to the requirements of this Act.

There are 61 workshops on the District Register, of which 46 are ordinary domestic workshops. On one premises a nuisance was discovered and reported. Steps were taken and the nuisance has been abated. On other premises the sanitary accommodation was found to be insufficient, and additional accommodation is being provided.

Dairies, &c.—The District Council have under consideration the making of regulations under the Dairies, Cowsheds and Milkshops Order.

Hazel Grove and Bramhall U. D.

The number of dairymen, cowkeepers or purveyors of milk on the register is 42. These are inspected.

Slaughter-houses have been inspected, and defects noted have been reported, and steps taken to amend them.

Offensive Trade.—There is one tripe-boiling establishment, which is under supervision.

No Common Lodging-houses are in the District.

Steam Disinfector Required.—At the present time clothing and bedding needs to be sent to Hyde to be disinfected. It would be an advantage to have a steam disinfector provided by the Council for use in this District.

Further Ground for Interments Needed.—Space in the graveyard at St. Thomas' Church, Hazel Grove, the only one in the District, generally known as Norbury Churchyard, is getting limited for burials, and some provision for the near future requires the attention of the Council.

The Medical Officer of Health draws attention to the burial of the bodies of non-residents, where the accommodation is so limited :—

1903—Residents, 66 ; Non residents, 37.
1904—Residents, 66 ; Non-residents, 34.

HOLLINGWORTH

Urban District.

Medical Officer of Health—Dr. W. E. S. Burnett.
Population at Census on April 1st, 1901, 2447.
Estimated Population in middle of 1904—2800.
Area in acres—2086.
Birth-rate per 1000 living—20.3.
Death-rate per 1000 living—18.2.
Death-rate from seven principal Zymotic Diseases—5.0.
Deaths under one year to 1000 births—228.

The population of this Urban District was 2,895 at the Census in 1891, and 2,447 at the Census in 1901. Thus during the decennium 1891-1901, there was a decrease in the population of 448*. The estimate of the population for 1903 and 1904

* This is due to the stoppage of the Cotton Factories at Waterside, where a large number of the inhabitants were employed, and to the closing of Dalton's Print Works.

shows an increase, some large Bleachworks having been built in the District, and these being now in full work.

In 1904 the number of births registered in the District was 57, and the number of deaths registered in the District (including the death of persons belonging to the District registered elsewhere) was 51. The birth-rate is 6.1 below the average birth-rate in the District in 1893-1904, and the death-rate is 1.1 above the average death-rate in the District in 1893-1904.

Infant Mortality.—In 1904 the number of infants in Hollingworth who died before completing their first year was 13, that is to say these deaths were equal to a rate of 228 per 1000 births. In the ten years 1894-1903 the infant mortality was equal to 145 per 1000 births. Of the 13 deaths of infants, in 1904, there were 3 ascribed to measles, 4 to whooping-cough, 1 to tubercular disease, 1 to bronchitis, and 1 to premature birth.

Infectious Diseases.—Only 5 cases of infectious disease were notified, viz. :—3 scarlet fever, 1 enteric fever, 1 erysipelas. The case of enteric fever proved fatal.

Measles and Whooping-cough.—The high rate of infantile-mortality is largely due to an epidemic of measles followed by an epidemic of whooping-cough. As neither of these diseases are required to be notified the number of cases is not known, but there were in all 5 deaths from measles and 8 from whooping-cough. All those who died were under five years of age.

Measles began at Tintwistle and spread to Hollingworth, Mottram and Brookfield. The Hollingworth schools were on this account closed for a fortnight. The time was afterwards extended to a month. In many cases the disease was of a very severe type, and, as the weather was unfavourable, and easterly winds prevailed, serious complications (bronchitis, pneumonia or convulsions) occurred in some cases. The District has been remarkably free from measles since 1897.

Whooping cough prevailed for several months. The gravity of this disease is not sufficiently realized by parents, and consequently no attempts were made by them to prevent the spread of infection Several cases were complicated with bronchitis, pneumonia or convulsions, and one case was complicated with meningitis.

Scarlet Fever.—There were 3 cases notified in Woolley Lane, in September and October, two of which were in the same house, and the third in the next house but one. They were all 3 mild in character.

Enteric Fever.—The only case notified occurred in Market Street, and proved fatal. No cause was discoverable.

Tubercular Disease.—Phthisis was the cause of 5 deaths, therefore the phthisis death-rate was equal to 1.78 per 1000 living. There were also 3 deaths from other tubercular diseases.

Preventing the Spread of Infectious Disease.—On receipt of notification of infectious disease the premises are examined, and where defects are found the owners are served with notices to remedy them. The patients are isolated, as far as possible, and their clothes and bedding disinfected by the Inspector. Such disinfectants as are required while the patients are ill are gratuitously supplied. The parents of children suffering from infectious disease are given printed papers, specifying the precautions which should be observed in each case, and are instructed to prohibit all other members of the family from attending school, and other people's children from entering the infected house, until the Practitioner in attendance certifies that all risk of infection is over. Information is also given to the School-masters.

Isolation Hospital.—The Isolation Hospital, erected in 1903, was ready to receive patients in October. It is provided jointly by Hollingworth and Mottram Urban Districts, and Tintwistle Rural District. A nurse has been appointed, and a suitable ambulance has been obtained. The only patient isolated in 1904 was a man from Mottram suffering from small-pox.

Water supply.—This is obtained from the Manchester Corporation. It is of good quality and usually plentiful.

Inspection.—Periodical inspections have been made by the Medical Officer of Health and Inspector, and where defects have been noticed, steps have been taken for their removal.

Common Lodging-house.—There is only one common lodging-house. This has been frequently visited, and generally found clean and in order.

Factory and Workshops Act, 1901.—There are nine factories, viz :—Three cotton factories, one bleachworks, one gasworks, one copper engraving works, one aerated water works, one sausage manufactory, and one cotton-waste works. With the exception of the cotton factory and bleachworks, those are of small dimensions, employing few persons. At one factory the sanitary accommodation was found to be insufficient, and at two factories this accommodation was defective. The owners have promised to make good these defects.

There are 11 workshops. All have been periodically inspected by the Medical Officer of Health and Inspector. They mostly contain considerably more air-space than the Act demands, and the drainage and sanitary conveniences are satisfactory.

There are few bakehouses, and these are satisfactory. They are all above ground.

Dairies and Cowsheds have been visited periodically, and found clean and in good order.

Slaughter houses have also been visited and found clean, and generally in good order. Defective flooring, noticed in some premises, has been put right.

No offensive Trades are carried on in this District.

Street Improvements.—Considerable improvements have been made by paving foot-paths, and lighting streets with incandescent lamps.

Refuse Removal.—The emptying of ashpits, &c., has been carried out under the supervision of the Inspector.

Outfall-works are acting satisfactorily. The Mersey and Irwell Watershed Committee's Inspector has visited the works periodically, and the effluent has been classed as good.

Nuisance Abatement.—The Inspector has attended to cleansing choked drains, and getting defective drains and traps put in order. All nuisances reported or observed have been investigated, and steps taken to abate them. There were in all 42 instances, 35 of which were abated, and seven out-standing at the end of the year.

HOOLE

Urban District.

Medical Officer of Health—Dr. F. J. Butt.
Population at Census, on April 1st, 1901—5341.
Estimated population in middle of 1904—5416.
Area in Acres—334.
Birth-rate per 1,000 living—38.6.
Death-rate per 1,000 living—20.0.
Death rate from seven principal Zymotic Diseases—2.6.
Deaths under one year to 1,000 births—188.

This Urban District is only part of the Parish of Hoole; the remaining part (415 acres), forms part of the Chester Rural District.

The population of the Urban District as enumerated at the Census, includes 525 in the Chester Union Workhouse, which is situated in this District.

Hoole U. D.

The population of the entire District was 3,892 at the Census in 1891, and 5,341 at the Census in 1901. The increase of the population during the decennium 1891-1901 was thus 1,449, that is 37.2 per cent. The estimate of the population made for the middle of the year, 1903, is therefore not excessive.

In 1904, the number of births registered in the District (including 10 in the workhouse) was 201, and the number of deaths belonging to the District was 99. The population of the workhouse is returned as 468 ; the population of the District, exclusive of the workhouse, was therefore 4948. The birth-rate is 6.6 above the average in 1894-1903, and the death-rate is about five above the average in the same ten years.

Thirteen deaths were due to the principal zymotic diseases, viz. : 4 measles, 5 whooping-cough, 1 enteric fever and 3 diarrhœa. There was 1 death from puerperal fever and 1 from erysipelas. There were 4 deaths from enteritis, 2 from septic disease, 6 from phthisis, 2 from other tubercular diseases, 5 from cancer, 15 from bronchitis, pneumonia or other disease of the respiratory organs, 10 from premature birth, 6 from heart diseases

Infectious Diseases Notified.—Thirty cases of infectious diseases were notified : 1 diphtheria, 19 scarlet fever, 7 enteric fever, 1 puerperal fever, and 2 erysipelas. Of these 1 enteric fever case and 1 erysipelas case took place in the Workhouse. Fifteen of the scarlet fever cases and 5 of the enteric fever cases (including one from the Workhouse), were removed to the Isolation Hospital in Sealand Road.

Measles.—Owing to a rather serious outbreak of measles, the Westminster Infant School was closed from May 16th, to June 13th, and this action was entirely successful in checking the spread of disease.

Phthisis.—Six deaths from phthisis among the population (excluding those in the Workhouse) are equal to 1.21 per 1000 living. The Medical Officer of Health suggests that the District Council should ask for the voluntary notification of cases of phthisis.

Water-supply.—Water is supplied to the District from the Chester Waterworks, except at Pipers' Ash, where it is obtained from two wells, which were cleaned out by the owners in the latter half of 1900.

Milk-houses.—The 12 milk-houses in the District have been periodically inspected, and were found in good sanitary condition.

Inspection.—The District has been carefully inspected by the Medical Officer of Health and the Inspector.

New House.—Only one new house has been erected during the year.

Recreation Ground.—The necessity of providing an open space, as a recreation ground, having arisen, through the rapid increase of the population in the District, a piece of land 6¼ acres in extent, was acquired in 1902, and has now been laid out. It was opened on May 7th, 1904, and has been much in use by children and others residing in the District.

The Factory and Workshop Act.—The only premises which have had to be inspected are 3 bakehouses, which are in a clean and thoroughly satisfactory condition.

No Slaughter-houses exist in the District, the butchers supplying meat neither killed nor dressed in the District.

Sewers.—The sewers are in good order and kept regularly flushed.

Nuisance Abatement is attended to by the Inspector. Forty-four nuisances were complained of or discovered, and all have been abated.

Refuse Removal.—All ashpits are regularly emptied once a week by men in the employ of the District Council. There are now no privies in the District except at the outskirts where there are no water mains.

HOYLAKE AND WEST KIRBY

Urban District.

Medical Officer of Health—Dr. G. A. Kenyon.
Population at Census, on April 1st, 1901—10,911.
Estimated Population in middle of 1904—12,220.
Area in acres—2,066.
Birth-rate per 1,000 living—22.0.
Death-rate per 1,000 living—15.7.
Death-rate from seven principal Zymotic Diseases—2.0.
Deaths under one year to 1,000 births—115.

The Urban District consists of West Kirby, Little Meols (including Hoylake and Hilbre Island*) Hoose, Great Meols and part of Grange. The area is as follows:—

* This Island appears on the Ordnance Map as a detached part of the former civil parish of St. Oswald, now incorporated with that of Chester, but it is treated as a part of Little Meols owing to its having been rated to this parish for the maintenance of the Poor.

Hoylake and West Kirby U. D.

	Area in Acres.
West Kirby	482
Little Meols	711
Hoose	108
Great Meols	695
Part of Grange	23

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

The portion of the Urban District now regarded as Hoylake is Meols, Hoose, and Great Meols; the portion now regarded as West Kirby is West Kirby and part of Grange.

The population of the Urban District was 6,545 at the Census in 1891, and 10,911 at the Census in 1901. The increase in the population during the decennium 1891-1901, was thus 4366, that is 66.7 per cent. The estimate of the population made for the middle of the year 1904, is 12,220. This is based on the assumption that the population has continued to increase at the same rate since the Census of 1901 as during the previous ten years. The estimate is in accord with the rate at which the building of new houses is proceeding.

In 1904 the number of births registered in the District was 269, and the number of deaths registered in the District was 196. From these deaths should be deducted 21 deaths of persons not belonging to the District, of which 7 occurred in the Convalescent Home. The deaths of 17 persons should be included which took place in Institutions outside the District, viz.:—5 in the Isolation Hospital, 3 in the Workhouse, 2 in the County Asylum, and 7 in the Hospitals of Liverpool, Birkenhead, etc. The number of deaths of persons belonging to the District was 192. The birth-rate is 0.3 below the corrected average in 1894-1903, and the death-rate is 2.7 above the corrected average in 1894-1903.

Of those who died 30 were infants under a year old, and 57 were persons over 65 years old.

Twenty-five deaths were due to the principal zymotic diseases, viz.:—3 measles, 7 whooping-cough, 7 scarlet fever, and 8 diarrhœa. There were also 2 deaths from enteritis, 3 deaths from epidemic influenza, 2 from puerperal fever, 5 from other septic diseases, 15 from phthisis, 6 from other tubercular diseases, 14 from cancer, 11 from bronchitis, 5 from pneumonia, 1 from alcoholism, 2 from diseases or accidents of parturition, 11 from heart diseases, 8 from accidents, 1 from suicide, and 1 from peripheral neuritis.

Infectious Disease.—There were 156 cases of infectious diseases notified, viz., 9 diphtheria, 135 scarlet fever, 3 en-

teric fever, 2 puerperal fever, and 7 erysipelas. All the cases of diphtheria, 111 of the cases of scarlet fever, 1 case of enteric fever, 1 of puerperal fever, and 1 of erysipelas, were isolated in Hospital. That is 77.5 per cent. of the notified cases. The prompt removal of these cases to the Spital Hospital, and the careful isolation at home of others, prevented any general spread of infectious disease. All cases were duly investigated. Measures were taken for the discovery and correction of insanitary conditions and for disinfection.

Cancer.—The number of deaths from cancer is also equal to a death-rate of 1.2 per 1,000 living.

Scarlet Fever was certainly very prevalent, not withstanding the prompt removal of most of the cases to Hospital. The case mortality was just under 1 in 19. The prevalence of the disease was not widespread, nearly all the cases being in Hoylake. The outbreak began in August, prior to which the District had been more than usually free from infection. At first the cases seemed to be connected with attendance at the Infant School, and the school was accordingly closed for a time. This appeared to have some good effect, but soon notifications were again frequent, and continued so till nearly the end of the year. The cases were not in relation to any milk supply.

Danger from patients when "peeling".—In two instances a person obviously suffering from scarlet fever was found at large, with the skin peeling. Both patients were removed to Hospital as soon as discovered. A handbill, drawing attention to the infectiveness of scarlet fever and the precautions which should be taken to prevent the spread of the disease, was then printed, and copies were widely distributed.

Phthisis.—The 15 deaths from phthisis are equal to a death-rate of 1.2 per 1,000 living—a high rate.

Disinfection after Phthisis.—The Medical Officer of Health having reported in favour of notifying phthisis as an infectious disease in January, 1902, the District Council have since undertaken the disinfection of premises infected owing to phthisis, upon the request of medical attendants. Disinfection of rooms, bedding, etc., was thus carried out, free of cost to the occupiers, on six occasions in 1903, and on five occasions in 1904.

Water-supply.—The District has an excellent supply of water from West Kirby Water Works (deep wells).

Inspection.—The Medical Officer of Health has visited the District a number of times, made general and special inspections, and advised the District Council and the Surveyor and Inspector on various points in connection therewith.

Sewerage and Outfall Works.—The District is well sewered, and the sewers are extended from time to time, as required, for the drainage of streets and buildings. The sewers are periodically flushed every fortnight, and are in good working order. With few exceptions all the houses have water-closets.

The new sewer outfall works at Great Meols are in order. Several new sewers have been laid during the year to provide for houses newly erected. The sewer outfall at Sandy Lane has been re-constructed and enlarged at a cost of about £12,000, and is reported to be working satisfactorily. The deep level sewer has been completed, and continued to the full extent of Fornall's Green. The houses there are now being connected to the sewer.

All the sewers in the District are inspected and flushed periodically. Some are flushed weekly, others fortnightly.

New Drains Tested.—All new drains are carefully inspected and tested before being covered.

Scavenging.—The District Council undertake the scavenging of the District with their own staff of men and their own carts and horses. New stables and a depôt have lately been provided for them. During the year, 3,662 loads of ashpit refuse have been removed. The removal of "trade refuse" is made daily or otherwise, at a uniform charge. As regards street-scavenging, additional men are employed now, and street orderly boys were added to the scavenging staff in 1903. The dust bins are emptied every week, and the ashpits every two or three weeks.

Private Street Works Act.—During 1904, there were 5 new streets and 10 back passages made under this Act. Several other streets have been extended as new houses have been erected. Six streets, previously paved with setts, have been treated with tar macadam and very much improved.

New Buildings.—A church and a public institute, 65 houses, 10 shops, 4 motor houses, 2 stables, and a bakehouse have been completed during the year. At the close of the year there were 2 churches and 37 houses in course of erection.

The Recreation Ground is now in regular use. It has been laid out for football, cricket, etc. A pavilion has been built, at the cost of £130, and provides dressing rooms and sanitary conveniences.

Factory and Workshop Act, 1901.—The factories and workshops have been duly inspected. At the close of 1903 there were 83 on the register. At the close of 1904 there were

86 on the register, viz.:—29 bakehouses, 5 tailors' workshops, 12 dressmakers and milliners, 15 joiners and cabinet makers, 5 laundries, 2 printers, 2 plumbers' workshops, 4 blacksmiths' shops, 3 cycle makers' and repairers' shops, 2 golf ball and tent makers' shops, and 7 other workshops. All these premises were visited and inspected during 1904. Thirteen notices were served for infringements of the Act, and the requirements were carried out, no further proceedings being necessary. In 4 cases the abstract of the Act was not posted up, and H.M. Inspector was notified thereof. The general condition of the workshops is good, and sanitary conveniences are very well kept. Work is not sent out to private houses.

Abatement of Nuisances.—Mr. Robinson, as Inspector of Nuisances, makes a very satisfactory report of the work done in his department. He states that 183 nuisances, of various kinds have been dealt with. In 26 instances written complaints were received. Twenty of these nuisances were due to obstructed drains, 14 to defective drains, 14 to defective water-closets, 39 to defective ashpits, 9 to defective waste pipes, soil pipes, and ventilators, 20 to defective or unpaved yards, 10 to animals so kept as to be a nuisance, etc. At the end of the year all the nuisances except 8 (outstanding, and in respect of which notices had been served) were abated. Twenty-one ashpits have been abolished and replaced with suitable dust bins, and 6 privies have been converted into water-closets.

Dairies and Cowsheds.—There are 15 registered cow-keepers and dairymen, and 12 registered purveyors of milk. These premises have been inspected at intervals during the year. The dairies are kept clean and in order, without exception. Only 5 limewashing notices were served.

Slaughter-houses.—There are 4 slaughter-houses in the District. These have been systematically inspected. The bye-laws have been observed.

Isolation Hospital Accommodation.—The District is contributory to the Wirral Joint Hospital Board, having thus excellent accommodation for the isolation of cases of infectious disease.

Marine Lake, New Parades, &c.—Among the many advantages of this district are the extensive parades constructed along the shore both at Hoylake and West Kirby, the Marine Lake, and the lighting of the District with electricity. All those improvements tend to make the most of the District's great natural attractions.

Meteorological Reports, for 1904, are furnished by Mr. Tom Robinson, Asso. San. Inst. The station where the

observations were taken is at Hoylake, the height above the sea level being 33.7 feet.

1904.	Mean Barometer (inches) at 30° F. (inches).	Mean Temperature (degrees).	Total Bright Sunshine h. m.	Total Rainfall (inches).
January ...	29.868	40.3	36 6	2.38
February ...	29.528	38.9	45 29	3.58
March ...	29.990	40.7	93 20	1.53
April ...	29.892	47.9	155 45	1.05
May ...	29.918	51.6	148 11	1.97
June ...	30.045	56.7	206 32	1.29
July ...	30.000	61.9	212 0	1.34
August ...	29.974	58.0	198 58	3.44
September ...	30.043	56.2	162 18	2.56
October ..	30.081	51.1	100 55	1.56
November ...	30.017	44.8	43 41	1.86
December ...	29.867	40 4	45 4	2.37
	29.935	49.0	1448 19	24.93

The mean barometer for the 6 years, 1899—1904, was 29.928 inches.

The mean temperature for the 6 years, 1899—1904, was 49.3 degrees.

The total bright sunshine average for the 6 years, 1899—1904, was 1449 hours 56 minutes.

The yearly total rainfall average for the 6 years, 1899—1904, was 27.44 inches.

KNUTSFORD

Urban District.

Medical Officer of Health—Dr. T. W. H. Garstang.
Population at Census, on April 1st, 1901—5,172.
Estimated Population in middle of 1904—5,639.
Area in acres—1,760.
Birth-rate per 1,000 living—26.6.
Death-rate per 1,000 living—16.3.
Death-rate from seven principal Zymotic Diseases—1.0.
Deaths under one year to 1,000 births—139.

By Local Government Board Order, which came into operation on April 1st, 1895, the Civil Parish of Knutsford was constituted an Urban District.

The population of this Urban District was 5,172 at the Census in 1901, and the population of the corresponding area was 4,643 at the Census in 1891. The increase of the population during the decennium 1891-1901 was thus 529, that is 11.4 per cent. The estimate of the population made for the middle of 1904 is 5,639. From this should be deducted the inmates of the Gaol (470), and Workhouse (353), leaving 4,816. This number, plus 18 officers resident in the Workhouse, and 16 paupers belonging to Knutsford, gives a corrected population of 4,850, on which birth-rates and death-rates are calculated.

During 1904, the number of births registered was 141, of which 12 occurred in the Workhouse or Gaol, and the number of deaths registered was 128, from which 49 are deducted, as not belonging to the District. Thus the deaths belonging to the District were 79. Deaths in Kuutsford of persons belonging to other Districts have been respectively notified to the Medical Officers of Health of such Districts. The birth-rate in 1904 is about 1.3 below the average in 1895—1903, and the death-rate in 1904 is about 0.4 above the average in 1895—1903.

Infant Mortality.—Eighteen of those who died were infants under a year old. This number is equal to 139 per 1,000 births. During 1895-1903 there were 136 deaths of infants to each 1,000 births. In 1904, the causes of the deaths of infants were registered as due to diarrhœa (2), bronchitis (2), venereal disease (1), premature birth (3), debility, &c. (6) and convulsions (4).

Illegitimate Infants.—Among the 129 infants born, belonging to the District, 8 were illegitimate—*i.e.*, 6.2 per cent. Only one of these children died during the year (12.5 per cent.). As of the 121 remaining infants 17 died, the death-rate among the legitimate infants was 14 per cent.

Coroner's Inquests.—The cause of death in four instances was made the subject of official inquiry. According to the finding of the Coroner's jury these deaths were due to

Male, 15 yrs.—"Syncope from overladen stomach;"
" 83 " "Shock, due to internal injuries from fall;"
" 33 " "Peritonitis, from perforation of intestine," patient being thrown from trap.
Female, 45 yrs.—"Found dead, syncope, alcoholism"

Cases of Infectious Disease notified.—Seventeen cases of infectious disease were notified in 1904, viz., 2 small-pox, 7 diphtheria, 2 scarlet fever, 1 enteric fever, 2 puerperal fever and 3 erysipelas.

Small-pox.—On June 9th a case was notified in Market Place, the patient being a woman, aged 34 years. Illness had commenced on the 4th and the eruption had appeared on the 7th. For six days, therefore, a man (who had lived with this woman) and many women (neighbours who went freely in and out) were exposed to infection. The patient was removed to the Joint Board's Hospital on the day notification was received, the bedding was burnt, and the house disinfected and locked up. The contacts were re-vaccinated—that is, those of them who were willing. The origin of infection was not ascertained. This woman had two scars, showing that she had been vaccinated in infancy (area $\frac{5}{8}$ of a square inch), nevertheless the eruption was copious, and became confluent. She was six months pregnant, and abortion took place early on the 14th. Death followed, from exhaustion, that night. The body was cremated at the Manchester Crematorium.

On July 14th a case occurred in the Workhouse. The subject was a man of 61 years of age who was employed as assistant in the tramp ward, which suggested the source of infection. He was removed to Hospital the same day. He had two marks indicating vaccination in infancy (area 1.6 of a square inch.) The eruption was semi-confluent, but he ultimately did well and was discharged cured on December 3rd.

Vaccination.—The Urban District forms, by population, nearly two thirds of the Knutsford Registration Sub-District of Bucklow Union. For this combined area the vaccination returns for eight years, 1896–1903, are given in full in the Report for Bucklow Rural District. From this it appears that in 1903, out of 200 surviving infants, 197 were successfully vaccinated, one being postponed on medical certificate.

Scarlet Fever.—Only two cases occurred, one in January and the other in April. The second case was removed to Hospital and remained there five weeks, the resident Medical Officer placing it in a separate ward, as he considered it to be really measles.

Diphtheria.—One case occurred in February, one in March, three in July, one in September and one in October. Most of the cases were slight, and only one was removed to Hospital.

In connection with this subject it is interesting to note that a child of 17 months died of laryngeal croup on March 11th; one of five years from croup and heart failure on April 30th; one of 17 months from acute laryngitis and exhaustion on May 5th; one of 3 years from croup and syncope on May 22nd; and one of 5 years from croup and syncope on May 25th. One cannot avoid a suspicion that possibly some or all of these cases may have been diphtheritic, and there may have been other slight cases which were not recognized.

Diagnosis of Diphtheria.—Bacteriological examination of morbid products from the patient is available in all cases, but it does not appear to have been made use of in 1903.

Diphtheria Antitoxin.—In response to a circular letter from the County Council, the District Council ordered that a small supply of Antitoxin be kept at the Inspector's Office, for the use of Medical Practitioners in the town, to be issued free of charge in necessitous cases, and at cost price in others.

Whooping-cough was prevalent to some extent at the close of the year, and one child died of the disease in December.

Enteric Fever.—A case was notified in October. Bacteriological examinations of pathological material were made on two occasions, but with negative results. The case proved fatal at the end of three weeks. There was a previous case of diphtheria in the same house in August, 1901. Nothing definite was ascertained as to the origin of the disease.

Puerperal Fever.—As already stated, two cases were notified, one of which was fatal. There was, however, another fatal case of puerperal fever. On October 23rd a woman died shortly after child-birth (in which she was attended by a midwife), death being ascribed to pneumonia by the Medical Practitioner called in. On October 26th a woman died from puerperal fever (in the practice of the same midwife), and this was diagnosed and certified as puerperal fever by the Medical Practitioner just referred to. A third case occurred in his practice (nursed by the same midwife), which terminated in recovery. The Medical Practitioner then came to the conclusion that the first had also been puerperal fever, the symptoms being marked by pneumonia. The District Council ordered the whole circumstances to be reported to the County Council; and on November 14th the County Medical Officer of Health, accompanied by the District Medical Officer of Health, made a searching investigation into the circumstances. The midwife, who had been in practice for many years, was found

to be very deficient in knowledge of modern safe-guards; but as she had obviously acted in ignorance rather than carelessness, it was not thought desirable to take further steps with regard to her, beyond cautioning her and impressing upon her the great importance of scrupulous cleanliness.

Diarrhœa.—Two deaths occurred, respectively in August and October. Those who died were infants who had not completed their first year. As a rule, this District appears to suffer very little from diarrhœa.

Phthisis.—Three deaths were registered, the ages at death being respectively 27, 37 and 41 years. The local phthisis death-rate was, therefore, 0.6 per 1,000 living. In the last six years 20 deaths had been registered from phthisis, but only one case of the disease has been notified, and that was in 1901.

Alcoholism.—A man, 55 years of age, and a woman, 45 years of age, died from alcoholism.

Venereal Disease.—An infant a month old died of congenital syphilis.

Isolation Hospital Accommodation is provided by the Bucklow Joint Hospital Board. Since December 8th, 1902, the new Hospital at Baguley has been available. About the same time, the temporary Hospital owned by the Bucklow Rural District Council was sold to the Bucklow Joint Hospital Board, and has been since removed to Baguley and re-erected as a temporary Small-pox Hospital. The District is therefore fully equipped.

During 1904 the Joint Hospital Board isolated 2 cases of small-pox already referred to, 1 case of diphtheria, and 1 of scarlet fever.

Disinfection by Steam.—This can now be obtained by sending the infected bedding, clothing, etc., to Manchester, in a van belonging to the Joint Hospital Board. The expense is, however, considerable; and the plan has not yet been tried in this District.

Systematic Inspection.—This has not been carried out as fully as in previous years; partly because there appeared to be no urgency; partly because this District has been more minutely inspected in the past than any others; and partly owing to a regrettable accident to the Inspector, which incapacitated him from work for a considerable period.

Water-supply.—In the Report for 1902 the following passage occurs:—"At last the boring at Booth Mill has been

abandoned. A depth of nearly 2,000 feet was reached, without satisfactory results. The water-supply, therefore, remains as before, taken from a stream admitted on all hands to be polluted; but so far not showing any obvious results to the detriment of the public health."

No steps to obtain a good water-supply were taken in 1903 or 1904.

The supply remains ample in quantity, and, although the water does not yield the best possible results on chemical analysis, it stands the test of experience, for no actual illness has ever been attributed to its use.

The Medical Officer of Health in his Report for 1898, drew attention to the great typhoid fever epidemic at Maidstone, which commenced in October in 1897. The recent epidemic of typhoid fever at Lincoln compels him again to warn the District Council of the undoubted risk there is in using such water as that supplied to Knutsford.

Refuse Removal, &c.—The system of "contracting" for this work was, during 1903, replaced by the creation of an official scavenging department under the Council. The Inspector is of opinion that increased efficiency is already observable, and that it will be found, on further experience, that economy also has been secured.

Sewage Disposal.—The "new filter beds" have been working during their third year, in conjunction with the old tanks and filters. The results appear to be not very satisfactory. The reports of examination of samples of effluent made for the Mersey and Irwell Joint Committee are as follows:—December 15th, 1904, "fair"; March 22nd, 1905, "good"; May 3rd, "unsatisfactory"; June 14th, "fair"; August 16th, "good." The Inspector states that the May result was due to accidental circumstances which were only temporary. He also hopes before long to be able to construct some additional filters, in view of a probable increase in the volume of sewage to be dealt with. In my opinion a simultaneous increase in the tank accommodation is equally desirable.

Cemetery.—The completion of the Cemetery was noticed in the Annual Report for 1901. The site is an excellent one, on Tabley Hill, about a mile from the town. The grave-spaces number about 4,100. At the end of 1904 there had been nearly 300 interments.

Dairies, Cowsheds, and Slaughter-houses are not numerous, and may be considered to be under daily supervision.

Common Lodging-houses.—There were originally 3 registered Common Lodging-houses. Two have passed out of

occupation as such, and the license of the third has been cancelled by the Justices for repeated offences. There is thus, at present, no Common Lodging-house in the town.

Factory and Workshop Act, 1901.—The Inspector reports that all the workshops are in a satisfactory condition, improvements having been made during the year. Inspections have been numerous, but no written notices have been required. The number of workshops registered is 104. There is 1 underground bakehouse, to which a certificate has been granted.

The Surveyor and Inspector, owing to his somewhat prolonged absence from work, from illness, has been unable to furnish the usual particulars as to the work of his Department. However, schools had been visited and found clean and in good order, and many inspections of ash-pits, etc., have been made. Houses in which nuisances had occurred have been inspected, and the necessary steps have been taken to obtain a cleansing or reconstruction of all defective drains.

New Buildings—Plans have been passed during the year for a Public Free Library, 18 Dwelling-houses and 2 Shops.

The Peat Pail System.—There are now 131 houses having pail closets, the pails of which are charged with acidulated peat, ground as at Congleton. This system is working satisfactorily.

Recreation Grounds.—The District has always been extremely fortunate in the possession of the large open space (about 50 acres), known as The Heath. In addition to this, the Council has now acquired, by negotiation with Earl Egerton of Tatton, the southern end of "The Moor" (about 5 acres), lying between the old town and the railway embankment. This has been levelled, and fenced. Trees and shrubs have been presented and planted. In the water-logged area, excavation of one part, and consolidation of another, will, it is hoped, result in the whole becoming definitely either "land" or "water." A contribution from the Freeholders' Fund will minimise the actual expenditure out of Rates.

The scheme, when completed, will be one of the greatest æsthetic improvements the District has ever known: and will be found of value from a sanitary point of view also.

LYMM

Urban District.

Medical Officer of Health—Dr. D. C. M. Lunt.
Population at Census, on April 1st, 1901—4707.
Estimated Population in middle of 1904—4800.
Area in acres—4372.
Birth-rate per 1,000 living—25.4.
Death-rate per 1,000 living—13.9.
Death-rate from seven principal Zymotic Diseases—1 6.
Deaths under one year to 1,000 births—99.

The population of this Urban District was 4,995 at the Census in 1891, and 4,707 at the Census in 1901. The decrease in the population during the decennium 1891-1901 was thus 288, that is 5.76 per cent. The estimate of the population, made for the middle of the year 1904, assumes that the population has increased by 93 since the Census.

The Urban District consists of a residential village, with agricultural surroundings. The village itself, somewhat hilly, is surrounded by flat, low-lying plain land on all sides. The population consists mainly of a residential portion, in business either at Warrington or Manchester, of local operatives (fustian cutters), of operatives living in the District and working outside it, and finally of an agricultural portion.

The house accommodation throughout the District is adequate, and in all cases fit for habitation. The open space around the houses is ample, and the surroundings of the dwellings are clean.

During 1904, the number of births registered in Lymm was 122, and the number of deaths registered in Lymm (including a death of a resident who died elsewhere) was 67. The birth-rate is 2.6 above the average in 1894-1903 and the death-rate is 0.5 above the average in 1894-1903.

Among the deaths were 8 from the principal zymotic diseases, viz. :—2 measles, 1 scarlet fever, 1 whooping-cough, 2 diphtheria, 1 enteric fever and 1 diarrhœa. There was a death from influenza and a death from puerperal fever. There were 2 deaths from enteritis, 5 from phthisis, 5 from other tubercular diseases, 5 from cancer, 16 from bronchitis, 2 from alcoholism, 5 from premature birth, 6 from heart disease and 4 from accidents.

Only 12 deaths were of infants under a year old—a small proportion, and 13 were of persons 75 years old and upwards—a large proportion.

Infant Mortality.—Of the 12 infants who died during their first year, nine were not more than a month old at the time of death. The Medical Officer of Health remarks that :—Parents take more care now in the matter of feeding, and it is a good sign

that parents when registering the birth of a child now ask to be supplied with a leaflet on infant feeding issued by the County Medical Officer. These leaflets, in which the directions for feeding infants are clear, concise and simple, are supplied free of charge by the Registrar.

Cases of Infectious Disease Notified.—There were 178 cases of infectious disease notified, viz.:—two diphtheria, one scarlet fever, one enteric fever, one puerperal fever, four erysipelas, 161 measles, and eight chicken-pox.

Measles was made a notifiable disease in 1900, and chicken-pox was made a notifiable disease in 1902.

Measles was prevalent in the early months of 1904. The epidemic to which most of the cases belonged commenced in 1903. Forty-three cases were recorded in 1903, and 161 in 1904, thus there were in all 204 cases notified and only two proved fatal. The case-mortality was, therefore, just 1 in 102.

School closure.—The schools in the District were closed during the epidemic of measles. Whether much, if any, benefit is derived from the closure of schools during an epidemic of measles seems, to the Medical Officer of Health, an open question.

Diphtheria.—The first case of diphtheria occurred near Boat House Inn, and the water-supply here was found on analysis to contain traces of surface sewage contamination. This well has been better sealed against such surface contamination.

The other case occurred in Pepper Street. Here a child, after an illness of a few days, was found dead in bed. The parents, intelligent people, thought the illness a passing one, and did not, in consequence, seek medical advice. The Coroner, on being informed in the usual way, did not consider it necessary to hold an inquest, and consequently no *post mortem* was made. The death was certified as due to acute tonsilitis

Within a week of this child's death another child in the same family was taken ill with diphtheria, and died. The diagnosis was confirmed by bacteriological examination.

On looking back it seems very reasonable to assume that the cause of sudden death in the second case was due to diphtheritic poisoning.

A surface well opposite the house in Pepper Street, from which water was used, was considered to be a likely source of infection, but analysis showed no signs of sewage contamination.

Town's water has now been laid on to these houses in Pepper Street.

Antitoxin Supplied.—The Medical Officer of Health has been directed by the District Council always to have in hand a

supply of diphtheria antitoxin, to be at the command of medical practitioners belonging to the District in an emergency.

Enteric Fever.—The only case of enteric fever was in a house the drains of which were out of order. All defects have since been rectified. The diagnosis in this case was confirmed by bacteriological examination of morbid material.

Bacteriological Diagnosis.—The District Council have adopted the suggestion of the Medical Officer of Health in his Annual Report for 1902, and made arrangements with the Pathological Department of the Victoria University of Manchester, for the examination of the blood in suspected cases of typhoid fever, and for the examination of morbid products from the throat in suspected cases of diphtheria. The arrangements made will doubtless be of much use to Medical Practitioners, and to the Authority.

Disinfection.—This is done by spraying with formalin. Time is thus saved, and after the initial cost of the apparatus the new method of disinfecting is cheaper than fumigating with sulphur. Satisfactory arrangements have been made with the Warrington Authority for the disinfection by steam of articles which cannot be efficiently dealt with by boiling or formalin.

Isolation Hospital.—The new Hospital is finished, and though not completely furnished could be got ready in a few hours' time for the reception of cases. The District is therefore thoroughly equipped for dealing with any probable outbreak of zymotic disease, for some years to come; except that no special arrangements have been made for isolating small-pox cases.

Water-supply.—The town's water, which is supplied by a Company, has been from time to time examined by the Medical Officer of Health and by an independent Analyst. The results show that it is a pure potable water. There are several sources of water-supply, which are not above suspicion. It is to be regretted that several cottages are dependent upon surface wells, when good town's water could be laid on.

Anthrax in Cattle.—A case occurred at a dairy farm on June 29th. The carcase of the animal was cremated and the stall disinfected. All the dairyman's customers were advised by him to boil the milk. On July 2nd another case occurred in the same herd. The cow-house was thoroughly cleansed and disinfected with formalin spray. The woodwork of the cow-house was then carefully scraped. The drinking-water supplied to the cows and their oil-cake were examined, but nothing to account for the outbreak was discovered. This dairy farm has town's water.

New Houses.—There was not much building during 1904, but 11 new houses were completed and certified for occupation.

Inspector's Report.—Mr. Mort, the Inspector, to whose energy and ability Dr. Lunt has often testified, reports that in 32 instances house-drains have been put in order. A length of sewer (85¼ yards) has been laid off Sandy Lane; a length of sewer (180 yards) has been laid near the Nook, Oughtrington, and a length of sewer (70 yards) has been laid off Dane Bank Road.

Refuse Removal from the ashpits and from privy-middens is effected by public scavengers at intervals of from one to two months, according to the size of the pit. In 1904 the number of emptyings was 3,884, and the number of loads of refuse removed was 1,336. The dry ashes are carted to a tip. The nightsoil is used by farmers. The Inspector supervises the removal of refuse.

Sewer Flushing.—The sewers have been flushed with town's water every fortnight during the past five years. In consequence of this, no complaints of ill odours in the public thoroughfares have been received.

Outfall Ground.—This is kept under supervision, and continues to act well. Samples of effluent analysed by the Mersey and Irwell Joint Committee have been reported on as "good."

No Common Lodging-houses are in the District.

Dairies, &c. (there are 16), are inspected periodically. They all have good water-supplies.

One sample of milk was submitted for examination, and this was found to be tuberculous. The Medical Officer of Health suggests that more samples should be tested.

Factory and Workshop Act.—There are 16 factories, 45 workshops, and 1 workplace in the District. Ninety visits of inspection have been paid. The cleanliness was found satisfactory, the ventilation adequate, and the air-space above the requirements. The provision of sanitary conveniences was found ample. There are no home workers in the District. The sanitary condition of all bakehouses (12) was found good. The only underground bakehouse was improved in capacity, lighting and ventilation during 1903, and is now satisfactory.

Slaughter-houses.—The 3 slaughter-houses in use in the District are registered. All are clean and well kept.

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Offensive Trades.—There is a brick-yard and also a bone works in the District. They are near together, and situated in a sparsely populated part. They are inspected, and cause no nuisance.

Canal Boats.—In 1904 the Inspector inspected 72 canal boats. On board 4 boats the cabins were found defective, and in 2 boats the cabins needed painting. In one boat the hatchway was out of repair. In one instance the certificate did not identify the owner with the boat. The defects noted have all been rectified.

MARPLE

Urban District.

Medical Officer of Health—Dr. H. Burton.
Population at Census, on April 1st, 1901—5,595.
Estimated Population in middle of 1904—5,650.
Area in acres—3,054.
Birth-rate per 1,000 living—20.5.
Death-rate per 1,000 living—10.6.
Death-rate from seven principal Zymotic Diseases—0.7.
Deaths under one year to 1,000 births—60.

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

The population of the entire District was 4,844 at the Census in 1891, and 5,595 at the Census in 1901. The increase in the population during the decennium 1891-1901 was thus 751, that is 15.5 per cent. The estimate of the population made for the middle of the year 1904 is only 55 in excess of the Census population. This estimate is so low owing to the completion of the Midland Railway Tunnel running through part of the District, and the departure of workmen lodged in railway huts since closed.

In 1904, the number of births registered was 116, and the number of deaths registered (including the death of a person belonging to Marple who died in a public institution elsewhere) was 60. The birth-rate is 0.3 below the average in Marple in 1898-1903, and the death-rate is 3.0 below the average in Marple in 1898-1903, being the lowest death-rate on record in the District.

There were 4 deaths from zymotic diseases, viz.:—1 measles, and 3 scarlet fever. There were 8 deaths due to phthisis, 2 to cancer, 8 to bronchitis and pneumonia, 2 to premature birth, and 9 to heart diseases.

Cases of Infectious Disease Notified.—There were 87 cases of infectious disease notified, viz.:—1 small-pox, 2 diph-

theria, 79 scarlet fever, 3 enteric fever, 1 puerperal fever, and 1 erysipelas.

Small-pox.—The only person attacked was a man from a hamlet outside Marple. The patient was promptly removed to the Isolation Hospital at Hyde. All persons who had been in contact with the case were re-vaccinated. The infected cottage was thoroughly fumigated, and the bedding and clothing were destroped. The man had been vaccinated in infancy but not re-vaccinated. However, the eruption was discrete.

Scarlet Fever.—There was a rather severe epidemic in the early part of the year. For some time it was limited to the portion of the District (Hawk Green) in which it broke out, but eventually, owing to the carelessnes of some parents, and the mildness of the disease, it spread. Some of the children were actually found "peeling" in the schools. Thirty-eight cases were removed to the Hyde Isolation Hospital, the remaining cases were treated at home. Two schools (All Saints' and Albert Schools) were closed, All Saints' on three occasions.

Influenza.—The usual spring epidemic occurred, of a mild form of this disease.

Phthisis.—The 8 deaths from this disease are equal to a death-rate of 1.41 per 1,000 living. Phthisis patients are attracted to Marple, where the climate is suited to phthisis.

Water-supply.—This is obtained in bulk from the Stockport Corporation filters at High Lane, and is daily pumped into the service reservoir at Wybersley. It has been satisfactory as regards quality, but the drought caused a shortage of supply between September 25th and November 12th. The amount consumed during the year was 18,207,000 gallons (about 9 gallons per head per day of the population supplied) including the amount used for flushing, &c.

New Houses.—Thirty-three new houses have been tenanted during the year. Twenty-one are not yet completed or not yet tenanted.

Houses Taken Down.—Seven dilapidated cottages in High Lane have been taken down. They have been replaced by 4 new cottages.

Dairies, &c.—Regulations under the Dairies, Cowsheds and Milkshops Order were made towards the end of 1897, and came into force on December 1st. Much has been done to remedy defects since then. The Inspector visits the premises and endeavours to get the regulations complied with. During 1904 one dairy farm house was taken down, and rebuilt.

Slaughter-houses.—There are 5 in the District. They have been kept clean, but they are all situated in objectionable places, and are unlicensed.

Factories and Workshops.—The number of factories and workshops in the district is 42. They are all inspected. As a rule they were found clean and in good order. Lime-washing or papering was required in a few instances. There are 2 underground bakehouses, but the circumstances did not appear to warrant their being closed. At Hollins Mill additional sanitary conveniences have been provided.

Refuse Removal is on the whole done in fairly satisfactory manner. The work is done under contract. In all 1712 ashpits have been emptied, and pails and boxes from 142 dwelling-houses, at a cost of £436 17s. 8d. This sum amounts to a charge on the rates of nearly 4d. in the £.

Improvements have been made in several defective ashpits during the year, but many still need attention, and should be dealt with as soon as possible.

The nuisance from ashpits would be mitigated to a great extent if persons would abstain from putting into them liquids and vegetable matter. Some years ago a notice was distributed throughout the District asking householders not to do this, but it is still done.

The Sewers are now in a satisfactory condition. They were flushed as often as possible during 1904, but the shortage of water at one period somewhat interfered with the work.

The Outfall Works have been kept in fair order. However, the only sample taken during the year by the Mersey and Irwell Inspector, was reported on as unsatisfactory.

Canal Boats.—The canal boats have been inspected by Mr. Hague. He reports that they are kept clean and in good sanitary condition. The number of boats on the register is 82. One new boat was registered during 1904. There were 41 boats inspected. Four were found to require painting, and 1 required a water-can. These defects were notified to the owners, and subsequently remedied. No case of infectious disease occurred on any of the boats.

Rainfall.—The total rainfall in the District in 1904 amounted to 27.68 inches. The average annual rainfall in the last 44 years was 31.78 inches.

Recommendations.—The Medical Officer of Health points out the need of an apparatus for disinfecting bedding, etc. He also thinks that measles and phthisis should be notified to the Authority.

MIDDLEWICH.

Urban District.

Medical Officer of Health—Dr. T. W. H. Garstang.
Population at Census, on April 1st, 1901—4,669.
Estimated Population in middle of 1904—4,850.
Area in acres—1,082.
Birth rate per 1,000 living—30.9.
Death rate per 1,000 living—20.2.
Death-rate from seven principal Zymotic Diseases—4.3.
Deaths under one year to 1,000 births—200.

By a Local Government Board Order, which came into operation on April 15th, 1893, the Middlewich Urban District was extended to include parts of the Civil Parishes of Byley, Newton and Kinder-cum-Hulme, which were added to Middlewich Civil Parish on September, 30th, 1894.

The population of the Urban District was 4,669 at the Census in 1901, and the population of the corresponding area was 3,970 at the Census in 1891. The increase of the population during the decennium 1891-1901 was thus 699, that is 17.6 per cent. The estimate of the population made for the middle of 1904 is based partly on the assumption that the population has continued to increase much at the same rate, partly on actual knowledge as to the state of trade, and partly on unoccupied property, new houses built, &c.

In 1904 the number of births registered was 150, and the number of deaths registered was 91. Two of the deaths were of persons not belonging to the District, and 9 deaths of persons belonging to the District occurred elsewhere, viz.: 6 in the Workhouse at Northwich, 1 in the Albert Infirmary, Winsford, 1 at Marston, and 1 at Sandbach. The number of deaths of persons belonging to the District was, therefore, 98. During 1894-1903 the corrected average birth-rate was 38.2, and the corrected average death-rate was 16.9. Thus in 1904 the birth-rate was 7.3 below this average, and the death-rate was 3.3 above this average.

Illegitimate Infants.—Ten of those born were illegitimate, that is 6·6 per cent. Three illegitimate children died, but they were all more than a year old. As 30 legitimate children died before completing their first year, and 140 legitimate children were born, the percentage is upwards of 21—very high.

No Uncertified Deaths were registered in 1904.

Coroner's Inquests.—Inquests were held in 4 cases. One was on a Sandbach child drowned in the canal. The others were respectively on the body of a man 65 years old, verdict "apoplexy," on the body of a male infant (19 months old), verdict, "teething and convulsions," and on the body of a man (56 years

old), verdict, "syncope during tonsillitis, accelerated by alcoholism." A woman (79 years old) belonging to Middlewich, who died at the Albert Infirmary, was the subject of an inquest, verdict, "bronchitis," a female infant (3 months old), who died at Marston, verdict, "found dead in bed," and also a male child (19 months old), who died at Sandbach, verdict, "convulsions."

Infant Mortality.—Thirty of those who died were under one year of age, a number which is equal to 200 per 1000 births. In 1894-1903, out of each 1000 infants born, 151 died under one year of age. The causes of deaths of infants in 1904, were as follows:—measles (4), whooping-cough (1), diarrhœa (2), tubercular disease (2), bronchitis (2), pneumonia (2), premature birth (9), debility (5), cerebral disease (2), and accident (1). The infant mortality rate in 1904 was unprecedentedly high at Middlewich.

Infectious Disease Notified.—Eighty cases of infectious disease were notified in 1904, viz.: 67 diphtheria, 5 scarlet fever, 1 puerperal fever, and 7 erysipelas.

Zymotic Mortality.—There were 21 deaths from the principal zymotic diseases, viz.: 9 measles, 1 whooping-cough, 8 diphtheria or membranous croup, and 3 diarrhœa. The average number of these deaths recorded in the District is 10.

Vaccination.—Though several cases of small-pox were notified in neighbouring Districts, not one occurred in Middlewich. With the assistance of the Vaccination Officer, the Medical Officer of Health is able to give the figures for the Middlewich Sub-District of the Northwich Union (of which the town of Middlewich forms about two-thirds) for a period of seven years.

Year.	Number of Births Registered.	Successfully Vaccinated.	Insusceptible.	Had Small-pox.	Dead Unvaccinated.	Postponed on Medical Certificate.	Removed, and Traced.	Removed, and Lost.	Conscientious Objections.	Unaccounted for.
1896	269	242	—	—	21	3	—	3	—	—
1897	267	234	1	—	23	2	1	3	3	—
1898	240	204	1	—	21	4	1	4	4	1
1899	219	184	3	—	23	1	1	3	1	3
1900	250	210	1	—	26	—	1	5	3	4
1901	225	195	2	—	22	—	2	—	3	1
1902	256	227	—	—	23	2	1	1	1	1
Total in 7 years	1726	1496	8	—	159	12	7	19	15	10
1903	246	211	—	—	23	1	—	6	2	3

During all the eight years referred to the proportion of those successfully vaccinated is uniformly high. During 1903 there were 211 infants successfully vaccinated out of 223 surviving, that is 94.5 per cent.

Measles.—On January 11th it was intimated that measles was prevalent in the National Schools, and on the 25th the Medical Officer of Health reported to his Committee as follows:—"An epidemic of measles has broken out, affecting the school attendance seriously, and I have advised the closing, for a period, of the schools affected. The whole of the schools have, I understand, been closed in consequence, for a fortnight from the 21st. I considered this step desirable, though I confess that personally I do not expect much effect, unless it is supported by additional inspection and supervision of infected houses and families."

On the advice thus given the Committee authorised the employment of a temporary assistant Inspector; and Mr. Roberts was engaged on the 26th but did not commence work until the 30th. From the 11th to the 30th therefore there was a regrettable want of the vigorous control which was needed; and on February 1st Mr. Roberts reported the existence of 65 cases in houses containing 74 additional children (139 cases and contacts). Under supervision however the numbers declined steadily; and at the Committee Meeting on February 22nd, the Medical Officer of Health was able to report that only about 20 cases were left, all in previously infected houses; and to advise that the schools might re-open on the 29th. Seven deaths having occurred during the first quarter of the year, a letter of inquiry was received from the Local Government Board, to which reply was made that the infection was probably imported from the surrounding Rural District, and was spread by carelessness of parents. Some months afterwards, striking confirmation of this view was received—information was given by a credible witness, that mothers had been seen carrying their children, when covered with rash, into each other's houses, for exhibition and comparison. All those who died of measles were children under two years old.

Scarlet Fever.—An isolated case occurred in March, then two cases (in one house) in September, and two in November. The four latter were closely intermingled with a number of cases of diphtheria, and the Medical Officer of Health is somewhat doubtful of their true nature.

Diphtheria.—A case of diphtheria was notified on June 18th. Five cases occurred in July, and 1 death; 6 cases in August, and 1 death; 20 cases in September and 1 death; 16 cases in October, and 2 deaths; 13 cases in November, and 1 death; 6 cases in December, and 2 deaths. Total, 67 cases, and 8 deaths. A special report

was made to the Local Government Board and Cheshire County Council on November 5th, in accordance with Art. 18 (15) of the Local Government Board's Order of 23rd March, 1891. The yearly average of cases for 14 years has been only 2; and the disease has hardly been noticeable save in 1902, when there were 10 cases. In 1903 there were 4 cases, but only 1 of these occurred subsequently to March, so that (but for that one case in December) there had been a clear interval of 15 months, and it is therefore unlikely that this great outbreak in 1904 was connected with the earlier cases in 1902 and 1903. More than half the cases, including the whole of the earlier ones, were visited by the Medical Officer of Health, and all were visited and most carefully inquired into by the Inspector. The whole of the District was involved, a few additional cases occurred in the immediate neighbourhood of the boundary, and just outside it. In spite of painstaking inquiries, the channel of original invasion was not traced. During the epidemic a close connection (by contact) was traced among the cases forming several small groups. If to all known cases are added the slight ones, overlooked and not notified (of which there frequently seemed to be evidence) and a possible proportion of persons who carried the infection about with them, and were capable of imparting it to others, though never developing the disease themselves, it will at once be seen that a very appreciable proportion of the population must have been infected. No bacteriological examinations were made, so far as is known. Antitoxin was used in nearly every case. Two deaths occurred within the first week of illness; three in the second week; and the others on the 37th, 46th, and 50th days respectively. The ages at death were: 1 under 5 years; and 7 between 5 and 15 years. Seven of those who died were girls and one was a boy. Children from infected houses were of course excluded from school, but no schools were closed.

Whooping-cough.—Like measles, this disease is not notifiable, and therefore nothing is heard of it unless it appears in the death returns. In 1904 one death occurred on April 15th, a child of 3 months.

Diarrhœa caused 3 deaths. They occurred on June 24th, September 12th and 13th. The 2 latter were children under 6 months. The former was a child 4 years old. It is doubtful if this child really had true epidemic diarrhœa.

Erysipelas.—The seven cases were of no importance, and were scattered over the year. They occurred respectively at the ages of 6, 7, 12, 19, 20, 21 and 47 years.

Phthisis.—The 5 deaths recorded are equal to a death-rate of 1.03 per 1,000 living. The ages at death were respectively 1 year, 21, 30, 30 and 61 years.

Other Tubercular Diseases also caused 5 deaths Those who died were all under 2 years old.

Notification of Phthisis.—Two notifications were received in 1904.

Alcoholism.—Two men, respectively 56 and 57 years of age, died of alcoholism or cirrhosis of the liver.

Anthrax in Cattle.—Many cases occurred in the neighbourhood. One case was reported in the District, and one on a farm partly in the District.

Isolation Hospital Accommodation.—The tents purchased for isolating small-pox cases, are retained, and stored in the wooden building erected during the outbreak in 1903. For infectious diseases other than small-pox the Northwich Joint Hospital Board is erecting a Hospital in Northwich Rural District.

Water Supply.—The Surveyor reports "that active steps are now being taken by the Council to obtain a new source of supply, and much work has been done during the year with this object ; and negociations for the purchase of a suitable source are now pending." The actual supply has been gravely deficient in quantity throughout almost the whole year.

Systematic Inspections.—These have been made in compliance with Art. 18 (3) of the Local Government Board's Order, and with the instructions of the Principal Medical Officer of the Local Government Board, as further explained in his Memorandum. The results have been dealt with in other paragraphs of this report.

Factory and Workshop Act.—Attention is given to the requirements of this Act. As regards sanitary accommodation, the two defects not remedied are being remedied. The only notice received from H. M. Inspector was with reference to a dangerous building. This is under observation. There are no underground bakehouses, and there are no out workers. During the year the Medical Officer of Health personally made about 40 inspections, and found all fairly satisfactory.

There are, on the Register, 13 factories, 35 workshops, and six workplaces. In all 152 inspections have been made during 1904.

Dairies, Cowsheds and Slaughter-houses.—These are under constant supervision by the Inspector, and during the year were visited at least once by the Medical Officer of Health.

Unsound Meat.—It is commonly believed that meat of a questionable character is often "killed" and dressed in this District; and sent away for consumption. The nature of the trade demands secrecy, and it is almost impossible to detect offenders.

New Sewage-works.—A further scheme was gone into during 1904, and is still under consideration.

The Surveyor and Inspector, Mr. F. W. Stocks, reports on various other matters, as follows:—

Nuisance Abatement has had attention. Six nuisances from houses in foul condition, and 10 nuisances due to houses being overcrowded were dealt with. There were also 101 nuisances due to ashpits and privies abated, eight nuisances from deposits of manure, seven from defective water-closets, 25 from defective house drainage, and two from pigsties.

In all 41 formal notices were served, 27 of which were complied with, and 14 of which are in hand.

Lodging-houses have been duly inspected.

New Houses.—Eleven sets of building plans were approved by the District Council during the year, viz.:—For a chapel and schools, a shop and warehouse, 4 work-shops, and 5 dwelling-houses. Ten certificates for habitation for new houses were issued.

Street Watering.—Great improvement has been made in facilities for watering the streets in dry weather in the erection of large tanks supplied by canal water in the Town's Yard and near Sutton Lane. In addition a brine supply is connected to the tank in the Town's Yard, by permission of Mr. Henry Seddon, who also gives the brine used for mixing with the water for street watering purposes.

The experiment of applying a weak solution of brine and water for allaying the dust on the macadamed roads has been successful, and has given great satisfaction generally.

Refuse Removal.—There are 602 ash-pits, and the number of emptyings was 2,584. The number of loads removed was 1,417. The cost of manual labour was £46 8s., and the cost of team labour was £98 14s. The cost of cleansing per ash-pit was 4s 10d., but many ash-pits serve more than one house.

The cost of night-soil removal was as follows:—

	£	s.	d.		s.	d.
200 Peat-pails ...	35	4	7	each	3	6
90 Zinc-pails ...	43	11	0	each	9	8
510 Cess-pools ...	57	4	0	each	2	3
	£135	19	7			

Canal Boats.—The number of boats inspected was 110. Of these 94 were in quite satisfactory condition. Three boats required docking for repairs, 4 required painting, and 1 boat did not carry a certificate. On 3 boats the fore-cabins were not clean, and on 1 boat was a case of infectious disease. No instance of over-crowding was observed. Defects reported were remedied.

MOTTRAM

Urban District.

Medical Officer of Health—Dr. W. E. S. Burnett.
Population at Census, on April 1st, 1901—3,128.
Estimated population in middle of 1904—3,128.
Area in acres—1,084.
Birth-rate per 1,000 living—22.0.
Death-rate per 1,000 living—13.7.
Death-rate from seven principal Zymotic Diseases—1.9.
Deaths under one year to 1,000 births—101.

The population of this Urban District was 3,270 at the Census in 1891, and 3,128 at the Census in 1901. Thus, during the decennium, 1891-1901, there was a decrease in the population of 142. It is estimated that the population has not increased since the Census.

In 1904, the number of births registered in the District was 69, and the number of deaths registered in the District was 43. No deaths elsewhere of persons belonging to the District were reported. The birth-rate is 2.0 below the corrected average in the District in the ten years 1894-1903, and the death-rate is 2.9 below the corrected average in the District in the same ten years.

Infant Mortality.—Seven deaths were of infants under a year old, being equal to 101 per 1000 births. In 1894-1903, the deaths of infants in this District were equal to 163 per 1000 births. The decrease in infant mortality in 1904 is a very satisfactory feature in the year's record. It is due in great measure to a remarkable decrease in the number of deaths of infants from summer diarrhœa. This may be attributed largely to the improvement which has taken place in the sanitary condition of the dwelling-houses of the District generally. The houses have an abundant water-supply and are better drained, and scavenging is improved. The increased rainfall and lower temperature of recent summers have also contributed to a decrease in the diarrhœa death-rate.

Infectious Diseases.—Thirteen cases of infectious disease were notified during 1904, viz:—1 small-pox, 7 scarlet fever, 1 puerperal fever and 4 erysipelas. The case of small-pox was removed to Hospital, and the other cases were treated at home.

Mottram U. D.

Small-pox.—The patient who suffered from this disease was a man, 40 years of age, employed as a moulder at the Newton Iron Works. He had one excellent vaccination mark on the arm (covering an area of $\frac{3}{4}$ of an inch), but he had not been re-vaccinated. How he became infected could not be ascertained, but it is probable that he was in contact with an infected fellow-workman from Stalybridge, where cases of small-pox existed at the time, that is in July. The patient was immediately removed to the Isolation Hospital, and all members of the family (after putting on clothing not exposed to infection) were promptly sent to a relative's house. All the children belonging to the house, who were over seven years old were vaccinated. The patient's bed was burned, and the house, clothing and other bedding were promptly disinfected. The drains were flushed and disinfected, and the refuse was removed. The man had a semi-confluent eruption. He made a good recovery, and no other case occurred.

Scarlet Fever.—The first case (a boy) occurred in a house at Mottram, where isolation could be effectively carried out, and there was no spread of the disease in the house. The boy seems to have been infected at Stalybridge. The attack was so mild that before the disease was recognized a schoolfellow was infected, who lived at Hodge Fold, Hathersley, and the schoolfellow infected his sister.

Six other cases followed, 1 in Hodge Fold, on the Mottram border, 1 in New Street, 2 Crescent Road, 1 Gorsey Brow, 1 Lymefield View, all in the Broadbottom portion of the district. None of those attacked were young children, only some of them attended school, their ages varying from 9 to 22 years, and with one exception the disease assumed a mild form.

Puerperal Fever.—The only case was notified on November 7th, and proved fatal on the 13th. This person was attended by a midwife, who was not in contact with her patient after her confinement, as the services of a medical attendant were requisitioned. She was, however, instructed to have a bath containing disinfectants and to thoroughly cleanse her hands, using a nail brush freely, in water also containing a disinfectant. Her clothes were disinfected, and she was not allowed to again enter the patient's house.

Measles.—A widespread epidemic, extending into some of the adjoining townships, visited the District early in March. As this is not a notifiable disease it was not possible to ascertain the exact number of cases, but they were very numerous. The schools were closed for a fortnight, but at the expiration of that time it was found necessary, owing to the epidemic not having passed away, to extend the time to a month.

In a great many instances the disease assumed a very severe type, and it caused 3 deaths. In the early part of the out-

break the weather was very unfavourable, north-east and east winds prevailing. Owing to the catarrhal nature of the disease the fatality is usually increased by cold weather, as there is greater probability of complications arising, such as Bronchitis or Pneumonia, which are so commonly associated with this disease. Measles has not visited the district in epidemic form since January 7th, 1900, when it was followed (as in this instance) by whooping-cough.

Whooping-cough closely followed the epidemic of measles, and became prevalent from May till October. The gravity of this disease is not sufficiently recognised by parents, and consequently no attempt is made by them to prevent the infection from spreading, nor is the necessity of taking precautions easily impressed upon them.

The majority of the inhabitants in this District have great faith in the open air treatment of whooping-cough, and the "ideal cure" is driving to Woodhead, a cold bleak spot (except in summer) close to the moors. This journey is frequently taken in open vehicles, regardless of season or weather conditions, and often results in serious complications.

Tubercular Disease.—Phthisis was the cause of 4 deaths in 1904 ; thus the phthisis death-rate was equal to 1.23 per 1,000 living. There was another death ascribed to other tubercular disease.

A request, made in 1902, to all Medical Practitioners in the District for the voluntary notification of phthisis met with no response.

Preventing the Spread of Infectious Disease.—On receipt of notification of infectious disease the premises are examined, and where defects are found the owners are served with notices to remedy them. The patients are isolated, as far as possible, and their clothes and bedding disinfected by the Inspector. Such disinfectants as are required while the patients are ill are gratuitously supplied. The parents of children, suffering from infectious disease, are given a printed paper, specifying the precautions which should be observed in each case, and instructed to prohibit all other members of the family from attending school, and other people's children from entering the infected house until all risk of infection is over. Information is given to the Schoolmaster.

Isolation Hospital.—The Small-pox Isolation Hospital was erected in 1903, being ready to receive patients in October. It is provided jointly by Hollingworth and Mottram Urban Districts and Tintwistle Rural District. A nurse has been appointed, and a suitable ambulance has been obtained.

Infectious Disease (Prevention) Act, 1890.—This Act has been adopted by the District Council, and came into force in June, 1903.

Public Health Acts, Amendment Act, 1890—Part 3 of this Act (containing sanitary and other provisions, likely to prove useful) was adopted by the Council during 1901.

Water-supply.—The public supply, which is taken from the Manchester Corporation reservoirs (Arnfield Springs), is good and plentiful. A few houses are supplied from wells.

The Factory and Workshop Act, 1901, has had attention. There are 5 factories and 29 workshops and workplaces on the register. At one of the factories there was insufficient sanitary accommodation. This has since been remedied by the addition of more closets. Two others were found defective, and will be properly constructed in course of a short time. Additional fire escapes and exits have been provided where necessary. Most of the Workshops in the District are of a domestic character, and business premises generally consist of a separate room in the house set apart for the work, where seldom more than one is engaged. They have all been periodically inspected by the Medical Officer of Health and Sanitary Inspector, and found clean, well ventilated, and with ample air-space, except in the instances referred to above. There are no under-ground bake-houses. H. M. Inspector notified that in one work-room was an oil-stove without a chimney, emitting noxious vapours. This had been placed in the room to heat it since the Sanitary Inspector's last visit. The oil-stove has since been removed, and the work is now carried on in another room, which has a fire-place.

Dairies, &c.—The District Council have not, up to the present, made regulations for the control of the milk trade, under the Dairies, Cowsheds, and Milkshops Order. The supply of milk for Mottram is obtained from surrounding farms. During the year the dairies and cowsheds were visited, and in most instances found clean. In some of the cowsheds there is still room for improvement in lighting and ventilation.

Slaughter-houses have been visited and in most instances found clean.

Offensive Trade.—The only person carrying on an offensive trade in this District is the owner of a knacker's yard The premises have been frequently visited and found in a clean and sanitary state.

Inspection.—Periodical inspections have been made by the Medical Officer of Health and Inspector, and, where defects have been noticed, steps have been taken for their removal.

There is only one lodging-house, and this is kept clean and in good order.

Paving the Footwalks.—This work has been going on steadily for some time. The improvement effected is now very noticeable in all parts of the District.

Sewage Works.—The method of treatment is by tanks, filters, and land. The Mersey and Irwell Joint Committee's Inspector reported unsatisfactorily upon the sample taken on September 6th, but the District Sanitary Inspector reports that the sample taken was from the land on to which some unauthorised person working on the sewage works, had turned it. New materials have since been put into filter beds, and the land better prepared for filtering purposes.

A New Sewer, 224 yards in length, has been completed behind Market Street, Mottram.

Nuisance Abatement.—The Sanitary Inspector reports that insanitary conditions discovered in the course of systematic inspections have had his attention, and for the most part been abated. Sanitary pipes have been laid in the place of old stone drains in Mr. Andrew's property at Broadbottom. This property has also been given water from the public supply. New drains have been laid at Roe Cross Farm, and also near the Conservative Club, Broadbottom. Many defective or obstructed drains have been put in good order. New closets are being constructed in place of defective ones in various parts of the District.

Refuse Removal.—The scavenging of middens, etc., has been efficiently carried out by the contractor, under the supervision of the Inspector. The middens, etc., are emptied monthly.

NANTWICH

Urban District.

Medical Officer of Health—Dr. J. D. Munro.
Population at Census, on April 1st, 1901—7,722.
Estimated Population in middle of 1904—7,812.
Area in acres—703.
Birth-rate per 1,000 living—28.0.
Death-rate per 1,000 living—15.1.
Death-rate from seven principal Zymotic Diseases—1.0.
Deaths under one year to 1,000 births—100.

The population of this Urban District was 7,412 at the Census in 1891, and 7,722 at the Census in 1901. Thus, during the decennium, 1891-1901, the population increased

by 310, about 4 per cent. The estimate of the population made for the middle of 1904 (7,812) is probably as nearly correct as possible.

During 1904, the number of births registered in the District was 219, and the number of deaths registered in the District was 116. Eleven deaths in the Workhouse Hospital for Women (Nantwich Urban District) were of persons not belonging to the District, and 13 deaths in the Men's Hospital (Nantwich Rural District) were of persons who belonged to the District. The number of deaths of persons belonging to the District was therefore 118. The birth-rate is 2.9 below the average in the nine years, 1895-1903, and the death-rate is 3.7 below the average in the same nine years.

The number of deaths belonging to the District was 38 in the first quarter, 31 in the second, 27 in the third, and 22 in the fourth.

Infant Mortality.—Twenty-two of the deaths belonging to the District were of infants under one year old, viz.:—3 diarrhœa, 2 whooping-cough, 2 pneumonia, 4 marasmus, 3 infantile debility, 2 convulsions, 1 premature birth, 1 tonsilitis, 1 cleft palate, 1 spina bifida, 1 meningitis, and 1 accidentally suffocated.

Zymotic Diseases.—Fifteen cases of infectious disease were notified in 1904, viz.:—1 diphtheria, 4 scarlet fever, and 10 erysipelas. There were 8 deaths from zymotic diseases, viz.:—2 from whooping-cough, and 6 from diarrhœa. The zymotic death-rate was equal to 1.02 per 1,000 living. No case of infectious disease was isolated in Hospital (Crewe Isolation Hospital) during 1904.

Isolation Hospital.—In the report for 1903 it was stated that a loan had been sanctioned for the purchase of a site at Alvaston, that the Joint Hospital Board had directed plans to be prepared for the necessary hospital buildings, and that application had been made to the Local Government Board to sanction a loan for £6,800 for the same. At the Local Government Board Inquiry, held on December 3rd, 1903, it was stated that an Observation Block should also be provided, for which an additional £1,000 would be required. Accordingly plans for an Observation Block have been prepared and sent in, and permission to borrow an increased sum has been asked for. The loan was sanctioned. Contracts for the erection of the Hospital were shortly afterwards entered into, and the building is in progress. It is expected that the Hospital will be ready for occupation in 1905.

Small pox Hospital.—The Joint Hospital Board have not taken any steps towards providing isolation accommodation for

small-pox; but the Nantwich Urban District Council have transferred to the Board their temporary Small-pox Hospital at Ravensmoor.

This will probably give sufficient accommodation for the present. It has been kept aired and in readiness for use.

Disinfecting Apparatus is still unprovided, and is urgently required.

Diphtheria.—The only case was most probably contracted outside the District. Diphtheria antitoxin was supplied free.

Scarlet Fever.—The 4 persons affected had the disease mildly. Precautions as to isolation and disinfection prevented the spread of infection.

Diagnosis of Diphtheria and Enteric Fever.—The cost of examining pathological material from doubtful cases of diphtheria and enteric fever is paid for by the District Council. The work is done at the Pathological Diagnosis Department of the Liverpool University.

Free Supply of Antitoxin.—In November, 1902, the Medical Officer of Health was empowered to supply antitoxin free to Medical Practitioners in the District, for the prevention and treatment of diphtheria among the poor.

Whooping-cough was prevalent during the first half of the year.

Measles.—Only isolated cases of this disease occurred in 1904.

Diarrhœa caused 6 deaths in the third quarter of the year. All of those who died were under five years old, and 3 had not completed their first year.

Tubercular Disease.—Phthisis was the cause of 10 deaths, thus the phthisis death-rate was equal to 1.2 per 1,000 living. There were also 4 deaths from other tubercular diseases, thus the death-rate as regards all tubercular disease was 1.79 per 1,000 living.

Heart Diseases.—Eighteen deaths were ascribed to heart diseases, giving a death-rate of 2.3 per 1,000 living.

Coroner's Inquests.—The following inquests were held during the year:—

1—Woman, 77 years old, verdict, "pulmonary congestion, following fractured arm."

2—Man, 43 years, verdict, "killed by being run over by train."
3—Boy, 2 years, verdict, "shock from burns."
4—Infant, 16 weeks, verdict, "natural causes."
5—Woman, 29 years, verdict, "died from blood clot on the brain."
6—Man, 79 years, verdict, "drowned in the river."
7—Man, 39 years, verdict, "fractured skull from a fall."
8—Boy, 5 years, verdict, "natural causes."
9—Woman, 59 years, verdict, "natural causes."
10—Man. 44 years, verdict, "drowned in the river."
11—Infant, 6 months, verdict, "suffocated in bed."
12—Woman, 39 years, verdict, "laudanum poisoning."

The Infectious Disease Prevention Act, 1890, was formally adopted in the Autumn of 1900. It gives increased control over the milk supply, and increased powers of disinfection. It prohibits the retention of dead bodies in certain cases, and give Justices power in certain cases to order dead bodies to be buried. It also gives them power to order an infectious person, without proper lodging or means of isolation, to be detained in Hospital until free from infection. It forbids the throwing of infectious rubbish into ashpits.

New Houses.—Twenty-nine new houses were completed during 1904. Sixteen are in course of erection.

Houses Demolished.—Six houses were thrown down during 1904.

Improved Closet accommodation.—Twenty-five midden-closets have been done away with, and replaced by 14 water-closets and 11 pail closets.

Sewers.—Numerous stoppages have been dealt with, and the construction of the sewers has been found to be very defective in many places where they have been opened.

A report by the Surveyor on the sewers of the town is required.

Sewage Disposal.—Mr. Baldwin Latham has been retained to advise the Council as to sewage disposal. He has submitted a scheme, which involves the acquisition of additional land, and is now under consideration.

Common Lodging-houses receive attention. There are 5 on the register. There does not appear to be any necessity for increasing the number at the present time. They have been regularly visited and found to be clean and orderly. No infectious disease or overcrowding has occurred.

Dairies and Cowsheds.—There are 11 dairies and cowsheds in the District. All have been inspected frequently and found satisfactory.

Slaughter-houses.—There are fifteen in the District. They have all been regularly inspected, and found in a cleanly state. As has been previously pointed out, not one of the existing slaughter-houses meets the requirements of the Local Government Board. A public abattoir in the District would be of much service.

Factories.—There are six clothing factories and 4 shoe factories in the District. The sanitary accommodation at all of these is now satisfactory.

Water-supply.—This remains as reported in past years. The joint water scheme was further considered in the early part of the year, but as the District Council failed to obtain the Liverpool water at a lower price than that at which it had previously been offered (ninepence per thousand gallons), the scheme was abandoned as being too costly.

Mr. Baldwin Latham, C.E., was retained as consulting engineer, to advise as to another mode of supply.

He has submitted two schemes, both of which have been considered, namely:—

1—A scheme for the enlargement of the storage area at Baddiley, and increased main capacity from the Water Works to the town.

2—An alternative scheme for obtaining water from the Checkley district.

The latter was strongly recommended by the consulting engineer, but up to the present time the Council have not acquired a suitable site.

Baddiley Water Works.—The long continued spell of dry weather in the summer severely taxed the resources of the Baddiley Water Works. The increased use of water for sanitary purposes had a marked effect on the pressure of water in the town, which at times was very defective, and numerous complaints were received to that effect.

The filter beds at Baddiley are working satisfactorily.

Canal Boats.—During 1904 the inspector visited and inspected 64 canal boats. Four were reported as defective, and action was taken accordingly.

The Baths and Wash-houses Act was adopted in 1904.

Nantwich Urban District Council Act received Royal Assent on 21st July, 1903. It contains important provisions as to milk, infectious diseases, and sanitary matters generally.

NESTON AND PARKGATE

Urban District.

Medical Officer of Health—Dr. G. A. Kenyon.
Population at Census, on April 1st, 1901—4,154.
Estimated Population in middle of 1904—4,328.
Area in Acres—3,267.
Birth-rate per 1,000 living—30.2.
Death-rate per 1,000 living—13.4.
Death-rate from seven principal Zymotic Diseases—1.1.
Deaths under one year to 1,000 births—91.

The population of the Urban District was 3,577 at the Census in 1891, and 4,154 at the Census in 1901. The increase in the population during the decennium, 1891-1901, was thus 577, that is, 16.1 per cent. The estimate of the population made for the middle of the year 1904 is arrived at by adding to the Census population three-tenths of the increase during the decennium 1891-1901.

The Census population of the three Wards is as follows:—

Leighton and Parkgate	...		1,061
Little Neston	...	...	1,225
Neston ...	...	...	1,868

The number of births registered in the District was 131, and the number of deaths registered in the District was 49. To these deaths have been added 10 (seven in the Workhouse, two in the Isolation Hospital and one in the County Asylum) making 59 deaths belonging to the District. The birth-rate is three below the average in 1894-1903, and the death-rate is 5.2 below the average in the same ten years.

Twelve of the deaths were of infants under a year old, and 19 were of persons 65 years old and upwards.

There were five deaths from the principal zymotic diseases, viz.:—two from scarlet fever and three from diarrhœa. There were five deaths from phthisis, three from cancer, 11 from bronchitis or pneumonia, and five from heart diseases. There was one death from alcoholism.

Cases of Infectious Disease Notified.—There were 17 cases of infectious disease notified, viz.: 4 diphtheria and 13 scarlet fever. All of the diphtheria cases and 10 of the scarlet fever cases were removed to the Isolation Hospital. Thus 84.3 per cent. of the known cases of infectious disease were removed to Hospital.

All the cases of infectious disease were duly investigated, and steps were taken for preventing the spread of disease, for the disinfection of premises, and for removing sanitary defects discovered.

Neston and Parkgate U. D.

Inspection.—The Medical Officer of Health visited the District from time to time, and made general and special inspections, subsequently reporting on points of detail in connection with sanitary work.

Water-supply.—The District has a good supply from its own Water-works, the water being derived from deep wells. The water is of very high organic purity. Sixteen new houses have been newly supplied during the year. Eight old houses have been newly supplied with water, and 1360 yards of 2 in. mains have been laid during 1904.

Sewerage and Outfall Works.—Neston and Parkgate are sewered, and the extension needed is being provided. The works mentioned in previous Annual Reports, the extension of the sewers, and the construction of outfall works have been in progress during 1903 and 1904. There have been 718 yards of new (12in. and 9in.) sewers laid during 1904. The sewers have been laid in New Street, Colliery Lane, Back Gladstone Road, and in Raby Road to the new cemetery.

The newly constructed bacteria beds are now in working order. The sewage passes through tanks to the beds, where it is treated by double contact. A filter is also provided for storm water.

Sewer Flushings.—Automatic flushing tanks are provided at the dead-ends of the sewers. The sewers are all flushed periodically

Sewer-ventilation is provided for by surface grids and upcast shafts.

Refuse Removal.—The disposal of excreta is still largely by means of combined ashpit-privies. The emptying and cleaning is done monthly (occasionally twice a month) by the District Council's employees. During the year 2,279 tons of refuse were removed to tips or agricultural land.

The District Council have under consideration the erection of a destructor, as it is not easy to find suitable places for tipping refuse within a convenient distance.

New Houses.—Sixteen new dwelling-houses have been erected.

Building Bye-Laws.—The Model Bye-laws of the Local Government Board, with respect to new streets and buildings, have been in force since 1893.

Report of Inspector and Surveyor.—Mr. Senior, the Inspector and Surveyor, makes a very careful and satisfactory report. He has received 42 complaints, which have been attended

to. He has made 143 inspections and 563 re-inspections of houses, premises, &c. Seventeen orders have been issued for the sanitary amendment of premises. At 59 houses the drains have been repaired, cleansed, trapped, &c. At 19 houses the drains have been ventilated. Twenty-nine privies have been converted into water closets. No case of overcrowding a dwelling-house has been reported.

Factory and Workshop Act.—The duties imposed by this Act are receiving attention. A register has been formed, and 44 inspections were made under the Act during 1904. There are 10 bakehouses and 11 other premises, occupied by builders, milliners, dressmakers and laundry proprietors. All are in good order.

Dairies, &c.—Twenty-nine dairies and cowsheds were regularly inspected.

Slaughter-houses.—Three slaughter-houses were regularly inspected.

Isolation Hospital Accommodation is provided through the Wirral Joint Hospital Board, to which the District contributes.

New Cemetery.—A new cemetery is being formed. A chapel and lodge in connection with this are in course of erection.

NORTHWICH

Urban District.

Medical Officer of Health—Dr. H. E. Gough.
Population at Census, on April 1st, 1901—17,611.
Estimated Population in middle of 1904—18,500.
Area in acres—1,397.
Birth-rate per 1,000 living—28.2.
Death-rate per 1,000 living—14.6.
Death-rate from seven principal Zymotic Diseases—1.9.
Deaths under one year to 1,000 births—162.

This Urban District is co-terminous with the Civil Parish bearing the same name. It takes in the former parishes of Witton-cum-Twambrooks (including a formerly detached part of the parish of Leftwich), Northwich and Castle Northwich, and parts of the parishes of Hartford, Winnington, and Leftwich.

The population of the Urban District was 14,914 at the Census in 1891, and 17,611 at the Census in 1901. The increase in the population during the decennium 1891-1901 was thus 2,697, that is, 18 per cent. The estimate of the population made for the middle of 1904 is 18,500.

Northwich U. D.

The inhabited houses and Census population of the three wards of the Urban District are as follows :—

	Inhabited Houses.	Census Population.
Castle Ward ...	1,115 ...	5,434
Northwich Ward...	638 ...	3,263
Witton Ward ...	1,813 ...	8,914

During 1904, the number of births registered was 522, and the number of deaths registered (excluding 16 not belonging to the District, and including 3 deaths of residents registered elsewhere) was 270. The natural increase in the population during 1904 was thus 252. The birth-rate is about 6.1 below the average birth-rate in the District in 1894-1903, and the death-rate is about 4.4 below the average death-rate in the District in 1894-1903.

Among the deaths were 36 from the principal zymotic diseases, viz. : 18 measles, 2 whooping-cough, 3 diphtheria or membranous croup, 2 enteric fever and 11 diarrhœa. There were also 2 deaths from influenza, 3 from enteritis and 1 from puerperal fever.

Infant Mortality.—In 1894 there were 85 deaths of infants under a year old ; a number equal to 162 to each 1,000 births. In 1894-1903 the proportion of infants who died, during their first year, to each 1,000 born was equal to 179. Of the 85 there were 61 under 6 months old at the time of death. The causes of these deaths were as follows :—2 from measles ; 2 whooping cough ; 7 diarrhœa, and 3 enteritis ; 7 tubercular diseases, other than phthisis ; 15 premature death ; 1 venereal disease ; 10 convulsions ; 7 marasmus, and the remainder from various other causes. A glance at this list shows that the bulk of the diseases are of a preventible nature.

Deaths of Illegitimate Children.—There were 9 of these, and as there were 29 illegitimate children born it shows how extremely precarious the life of an illegitimate child is. This apparently is a clear indication that a heavy infantile mortality is due to want of proper care. The causes of these deaths were as follows :—3 from pneumonia ; 2 from convulsions ; 2 intestinal catarrh : 1 measles, and 1 kidney disease. Three of the mothers were described as being of no occupation, and the remainder domestic servants. Five of the children were under 6 months at the time of death.

Cases of Infectious Disease Notified.—The number of cases of infectious disease notified in 1904 was 74, viz. :—3 small-pox, 25 diphtheria, 15 scarlet fever, 6 enteric fever, 4 puerperal fever, and 21 erysipelas. Nine of these cases were isolated in Hospital, viz. :—3 small-pox, 1 diphtheria, 2 scarlet fever and 3 enteric fever.

Northwich U. D.

Smallpox.—Three cases of this disease occurred. The first patient was a tramp, who came to the workhouse and was removed to the Rural Council's Isolation Hospital at Marbury; the second case occurred in a common lodging-house, and the third case in a private dwelling-house. The cases were immediately removed to the Hospital, and all possible precautions were taken to prevent the spread of the disease. As a result it did not spread.

All the patients had been vaccinated in infancy, but with one exception not since. The first 2 cases showed good marks, the last only one doubtful mark. The 3 cases were tramps, occurred at different times of the year, and were not in any way connected.

Diphtheria.—As there were 25 cases notified and 3 were fatal, the case mortality was less than 1 in 8. In few of the cases was the diagnosis confirmed bacteriologically.

Isolation Hospital Accommodation.—The Isolation Hospital at Wade Brook has accommodation for 5 patients. It has been kept in readiness to receive patients throughout the year. Eight patients were treated at a cost of £174 17s. 9d.

The New Joint Hospital.—It was mentioned in the Annual Report for 1902 that six acres of land for the proposed Joint Hospital had been purchased. This land is in the Parish of Davenham, the altitude is good and the situation is conveniently central. The necessary plans were prepared in 1903. These were in due course approved, and good progress was made with the Hospital buildings in 1904.

Water-supply.—The whole town is supplied from the District Council's mains, by constant service, from the Cote Brook Waterworks—a supply of great purity. There is need of more storage room, however, and the construction of an additional reservoir is under consideration. The old Wade Brook supply is only used for street-watering, and sewerflushing.

The Factory and Workshop Act, 1901.—All workshops have been inspected, with a view to the requirements of this Act being carried out, and the necessary alterations effected. The Workshops on the register number 121. The defects which have been found and remedied consist of want of cleanliness, want of ventilation, overcrowding, and want of drainage. No prosecutions have been necessary.

Private Streets.—A number of streets will be paved within the year under the Private Street Works Act. These are mostly in the Castle Ward, and become eligible for paving owing to the completion of the Castle sewerage scheme, which allows for free drainage.

The paving of streets and back passages is a measure which has a very distinct effect for amelioration upon the health of a locality. Tonsillitis, rheumatism, catarrh, and respiratory diseases, all being worse in a damp atmosphere. Damp and dirty ground is very suitable for breeding the germs of putrefaction and disease, notably diphtheria. It is to be hoped that all these small streets and back passages will soon be paved and channelled.

Sewerage.—The present condition of the town sewerage is bad; but steps are being taken to effect improvement. The Castle Ward sewerage scheme may now be said to be complete. No cost has been spared to make everything connected with the scheme as efficient and up-to-date as possible. There will be very little balance out of the original estimated cost of £25,000. There are properties still to be connected by the owners, but the Council have communicated with them asking for the work to be carried out, and it is hoped it will be done without having recourse to Statutory Notices. There are many instances in which the work is being undertaken.

Outfall Works.—The sewage disposal works at Winnington appear to work admirably, the effluent being all that can be desired. About 300 trees have been planted round the ground, with a view of improving the general surroundings, and there is no doubt that they will form a very good screen to protect the tanks from the various winds.

Refuse Removal.—It is a pleasing fact to record that the work of the contractors in removing the contents of privies and house refuse has been more satisfactorily carried out during 1903 and 1904 than for many years before. The work is done under three contracts; one for East Witton, one for West Witton and Northwich Wards, and one for Castle Ward. All these contractors have tips outside the Council's District. The tips for the excreta are covered with lawn-bark, almost completely doing away with the foul smells that arise from these places. The dry house refuse is covered over with soil, and the waste paper destroyed by fire.

An improvement has been made in the system of removing the dry refuse from boxes, &c., in the main streets, the ashes are now carried in hampers direct to the carts, without being deposited in the road. Disinfectants are freely used by the contractors for the removal of house refuse, as it is highly important that each ashbox or bin should be thoroughly disinfected.

Through the carelessness or ignorance of many householders a considerable amount of refuse which might readily be burnt is left to ferment and decompose, close to dwelling-houses, causing a nuisance and occasional sickness. Refuse from the kitchen and scullery should be destroyed by fire, and not put in

the ashpits or ashbins to be allowed to decompose and throw off its most dangerous odour.

The Inspector, Mr. Charles Potts, reports that during 1904 the scavengers removed 3,820 loads of dry refuse, and 3,500 loads of excreta. The disposal of excreta is a serious question, and should have the consideration of the Council at an early date with the view of doing away with some of the old cesspools in the Castle and Winnington Districts, and substituting the water carriage system. This would greatly reduce the expense of scavenging, and improve the sanitation of the locality.

Standard pails, to the number of 185, have been given out to property owners during the year, mostly to replace old and leaky pails.

A Refuse Destructor Needed.—The Inspector reports that a destructor would be of great use, and would provide a means of getting rid of trade refuse from the shops, which the District Council do not collect and destroy at present.

Nuisance Abatement.—The Inspector, Mr. Charles Potts, reports that 87 notices have been served on property owners for the abatement of nuisances, and in all cases the work required has been carried out. In a great many instances the abatement of nuisances has been effected by means of correspondence or verbal notices only. In 52 instances lengths of house drains have been taken up and relaid. In connection with this work, many defective traps had to be replaced and many additional ventilators were put in. In 17 instances dirty premises were cleansed and disinfected. At 13 houses, nuisances from overcrowding have been abated. In 3 cases accumulations of refuse were dealt with and removed. At 5 houses, new wash-houses were provided.

Sanitary Improvements.—During the year 24 old privies have been converted into water-closets. The ashpits in connection with these have been re-constructed and covered in. Ten new water-closets have also been built for new houses. Twenty-seven other privies have been demolished and replaced by pail closets.

Smoke Nuisances.—Nuisances from smoke were suppressed on 8 occasions, and the defaulters were written to. Legal notices were eventually served in 3 cases.

New Houses.—Twenty-nine new houses were built during the year, and 18 old houses were demolished, so that the number of houses was increased by 11.

Systematic Inspection has been carried out periodically. The Medical Officer of Health inspects the District from time to

time; and the Sanitary Inspector goes over the District regularly In this way many nuisances are discovered and abated.

There are at present, in the District, 3.862 houses, 3,388 closets, 555 cesspools, 1,876 pails, 1,062 water-closets, 1,260 ash-pits, and 896 ashbins.

Common Lodging Houses.—There are 7 of these houses on the register. One house was reported for the filty state of the bedding, but, on a notice being served, clean bedding was substituted, and the house cleaned to the satisfaction of the Sanitary Inspector. A case of small-pox was found in another, the bedding was destroyed, and the whole house was cleansed, disinfected and limewashed. The other lodging houses were all found in good order.

Factory and Workshop Act.—There are 170 premises on the register, and the Inspector has visited them many times. Owners were warned as follows: 1 for overcrowding, 1 for insufficient ventilation, and 4 for closing ventilators. All the bake-houses and sweetstuff factories were lime-washed twice during the year. The drain on one of the premises was found to be out of order, taken up and relaid, proper traps and ventilators being provided. There are very few out-workers in the District, but in every case the houses they make use of in have been visited.

Dairies and Cowsheds have been visited periodically by the inspector, and lime-washing attended to.

Slaughter Houses (18 in number) have been inspected during the year. All have been lime-washed.

The Sale of Foods and Drugs Acts have had attention given to them; but no infringements have been noted.

Canal Boats.—There are only 2 boats now on the Council's Register, and these are inspected as required.

RUNCORN

Urban District.

Medical Officer of Health—Dr. F. McDougall.
Population at Census, on April 1st, 1901—16,491.
Estimated Population in middle of 1904—17,200.
Area in acres—1,275.
Birth-rate per 1,000 living—31.4.
Death-rate per 1,000 living—21.2.
Death-rate from seven principal Zymotic Diseases—4.9.
Deaths under one year to 1,000 births—203.

The population of this Urban District was 20,050 at the Census in 1891, and 16,491 at the Census in 1901. The decrease

in the population during the decennium 1891–1901 was thus 3,559, that is 17.75 per cent. The estimate of the population made for the middle of the year 1904 appears to be warranted.

In 1904, the number of births registered in the District was 541, and the number of deaths registered in the District was 351. To the number of deaths must be added 14 deaths of persons belonging to the District which took place in the Workhouse at Dutton. Of the 365 who died 110 were infants under a year old, and this number is equal to 203 per 1,000 births. The birth-rate is about 0.7 below the average in the District in 1894–1903, and the death-rate is about 3.0 above the average in the District in 1894-1903.

Cases of Infectious Disease Notified.—The number of cases of infectious disease notified in 1904 was 303, viz.: 65 diphtheria, 7 membranous croup, 153 scarlet fever, 2 typhus fever, 42 enteric fever, 13 continued fever, 5 puerperal fever, and 16 erysipelas. The number of cases notified in 1903 was 186, the number of cases notified in 1902 was 269, the number of cases notified in 1901 was 183, the number of cases notified in 1900 was 95, the number notified in 1899 was 261, the number notified in 1898 was 317, the number notified in 1897 was 282, and the number notified in 1896 was 183.

Zymotic Mortality.—There were 85 deaths from the seven principal zymotic diseases, viz.:—5 measles, 3 scarlet fever, 8 diphtheria or membranous croup, 1 typhus fever, 3 enteric fever, 1 continued fever, and 48 diarrhœa; thus the zymotic death-rate was 4.9 per 1,000 living.

Diphtheria and Membranous Croup.—There were 65 cases notified as diphtheria, and 7 notified as membranous croup. More than two-thirds of the cases occurred during the latter half of the year. When the schools resumed work after the mid-summer holidays there was at once a rise in the number of cases notified, which seemed to point out that the schools influenced the spread of disease. Scarlet fever and ordinary sore throat were prevalent about this time.

Scarlet Fever.—For the first three months of the year 36 cases were notified, but in April and May there were only 9 and 8 cases respectively. In June there were 28 cases, and 16 in July. In August there were but 5 cases, in September 10, in October 25, in November 18, and in December 6 cases. The Medical Officer is of opinion that it is probable the disease spread by the admission of children to school in an infected condition. He thinks that the Health Committee should make some arrangement with the Education Authority to check the spread of infection this way. Children are allowed to be in the streets, and to go to school when they are distinctly infective; and there are

mild cases which are not notified at all. Children who have been away suffering from infectious sickness should be returned to school with extreme caution. The Health Authority should insist that the Education Authority require a clean bill of health before re-admitting to school recently infective children. The Education Authority should provide proper Certificates, to be left at the homes of sick children by school visitors, and to be properly filled in by the Medical Attendant when the child is ready to return to school; these Certificates should be kept for reference. During 1904 the number of Notifications at once dropped in the midsummer holidays, which lasted from the end of July to August 23rd. On the whole, the type of disease which prevailed was mild, and only three cases proved fatal.

Measles.—This highly infectious disease was somewhat prevalent in July and August, and five of the cases were fatal.

Whooping-cough was very prevalent in the town during the months of June, July, August, September and October. Sixteen deaths were registered from this cause. One death was registered during the previous year from this cause. Eight of the deaths enumerated above were of infants under one year, and seven of the deaths were of very young children of upwards of one year and under five.

Typhus Fever.—Two cases of typhus fever were notified from a court at the east end of the town in August. Both patients were promptly removed to the Isolation Hospital. One (aged 40 years) died three days after admission; the other (aged about 12 years) made a good recovery. These people had visited a neighbouring city (where the fever is known to be indigenous), and five days after they were taken ill. Three days after this the illness was diagnosed typhus fever, and immediately after the removal of the patients the house was closed, and thoroughly disinfected. The disinfection was repeated several times, and the house kept closed. The whole of the court in which the house was situated was also well disinfected; the beds, bedding and body clothes of the patients were burnt. Owing apparently to the prompt measures taken, there was no extension of the disease.

Typhoid Fever.—Forty-two cases were notified, affecting 32 houses. One case was notified in February, 1 in May, and 40 cases in the last five months of the year.

The Medical Officer points out that "last summer was an exceptionally dry one; the sub-soil got dry and parched, and when the rains of autumn came the accumulated poisonous gasses were displaced by the rainfall, and in much the larger number of cases the displacement of these gases appears to be the most probable cause of the onset. This does not, however, account for the on

set in all the cases, for, in one instance particularly, grave sanitary defects were discovered in the cellar. The usual old cellar drain was there in direct communication with the sewers of the town, forgotten and neglected. It looks like crying in the wilderness to ask people to disconnect the cellar drains from the street sewer, and to give heed to the warning after warning which they receive from the always faulty and dangerous cellar drain. In the instance under review there were two cases affected, and it was very fortunate indeed that a more serious disaster had not followed a piece of flagrant ignorance and negligence. Every householder with a cellar to the house should look out for a cellar drain, and, whether trapped or not, it should be disconnected from the street sewer without a moment's delay. Cellar drain traps, however perfect, are liable to be forgotten and overlooked, and are never a perfect barrier between the house and the street sewer. The water in the trap, if it contains any, will soon get saturated with sewer gas, and more especially is this likely to be the case now, since all the old drain outlets, with one exception, are only feeders of one large intercepting sewer. Several cases were believed to have contracted fever away, and one sad case was known to have contracted the disease at a fashionable watering place."

Continued Fever.—Thirteen cases were notified as continued fever, these occurred in nine houses. It seems possible that these cases were really enteric fever of a mild type.

Puerperal Fever.—The five cases notified occurred during the months of May, September, October, and December.

Erysipelas.—The sixteen cases notified were all associated with constitutional pre-disposition or injury.

Diarrhœa.—Of the 48 deaths registered as due to diarrhœa, 26 were of infants under one year, and 18 were of children between 1 year old and 5 years. Thus the exceptionally high rate of infant mortality recorded in 1904 was mainly due to the remarkable prevalence of diarrhœa. All the deaths, except one, were registered between May and October.

Isolation Hospital.—During 1904 this small Hospital was kept in readiness, and used when isolation at home was not practicable.

Tubercular Diseases.—The seven deaths from phthisis are equal to a phthisis death-rate of 0.4 per 1,000 living, which is not high. As, however, there were 26 deaths from other tubercular diseases, the entire death-rate from all forms of tuberculosis is equal to 1.9 per 1,000 living.

Cancer.—The 14 deaths from cancer are equal to a death-rate of 0.8 per 1,000 living.

Systematic Inspection.—The District is under continuous inspection; some parts daily. There is no place, no house, no backyard that has not been examined during some part of the year. Defects discovered or pointed out have been remedied, and it has not been necessary to take legal proceedings in any case. In most cases property owners give willing attention to the recommendations of the Authority.

Water-carriage is insisted on in all new properties.

Factory and Workshop Act.—The District Surveyor (Mr. James Wilding) reports that he has inspected 67 workshops under this Act. As regards the sanitary condition of workshops and workplaces: (a) Cleanliness was generally good—notice was given where cleanliness was required; (b) air-space adequate in each case; (c) ventilation, sufficient if used, but there is great difficulty in getting people to use the means of ventilation provided; (d) drainage of floors, properly attended to; (e) sanitary accommodation, suitable and sufficient, provided in each case.

The arrangements as regards bakehouses are satisfactory in each case.

As regards home work, only places coming under the heading of domestic workshops are in use. There are only six out-workers in connection with the industries in the town. Proper forms and particulars have been deposited by the employers concerned.

The register has been kept as directed.

Water-supply.—This is obtained at present from a deed well situated on Runcorn Common. The well is about 300ft. in depth and apparently about 70ft. below the bed of the River Mersey. The water is pumped into a large receiver, situated on Runcorn Hill, and is distributed by gravitation to the whole District. The water used to be supplied through a Limited Company, but the Urban Authority have discharged the duty for about eleven years. The supply is plentiful, a quarterly examination is made of the water, either analytically or bacteriologically, and a Report is made to the Authority thereon. Up to the present no trace of sewerage contamination has been obtained, or anything to indicate such pollution has been in evidence.

Sewerage Arrangements.—Prior to the time of the making of the Manchester Ship Canal, all the sewage of the Township was conveyed by seven different sewers which discharged their contents into the River Mersey. Since the making of the Canal six of these sewers have been diverted into an intercepting sewer of large capacity, which runs parallel to the Canal, and is syphoned under it a little below the southern end of No Man's Land, and discharges into tidal waters, a tidal valve being provided.

There are two large man-holes, one on each side of the canal, enabling the sewer to be examined from time to time. A heavy chain passes through the sewer from man-hole to man-hole, and is worked by a winch at the top of each manhole, thus keeping the contents of the sewer in motion and preventing the collection of silt. This portion of the severing arrangements is under the constant supervision of the canal Authorities. The intercepting sewer is well ventilated and periodically inspected.

The seventh sewer was not diverted at the time of the making of the Manchester Ship Canal, but was made to go into a culvert under the Canal, which opens out on the Mersey side of the Canal embankment, a little to the North of the Western Point Docks. This sewer and the intercepting sewer which receives the six sewers already referred to, constitute the sewerage system of the Town and Urban District.

Refuse Disposal.—At one time the privy-ashpit, with very few exceptions, represented the only method of dealing with night-soil. Within recent years water-carriage has been insisted upon wherever possible, and whenever structural alterations are necessary. All new house properties of whatever description have water-carriage, and the system has been found to work well. As regards the old privy-ashpits and cesspools, they are slowly disappearing; however, they are still in existence to a considerable extent.

Privy-pits and ashpits are periodically emptied and the contents sold to farmers for manuring land. All this special work is done by the Local Authority, the necessity of employing a contractor being thus avoided. The night-soil is removed during the night, being tipped into large barges, and taken along the old Bridgewater Canal to be delivered to farmers whose property adjoins the Canal.

House Accommodation.—Some years ago, after the completion of the Manchester Canal, a large number of working-men left the town to seek employment elsewhere, hundreds of houses being thus left vacant. Syndicating the Chemical Industry of the town seemed for a time to exercise a very unfavourable effect in leading to the migration of workers. For a few years, however, an improvement has been visible and is still going on, trade having improved and an additional Industry having been established within easy distance of the town. Cottage houses are now letting better and are in demand. For years past there has been very little building going on. This is partly owing to the absence of demand for new houses, and partly to the fact that the new building Bye-laws are more onerous than those which preceded them. As a whole the working classes are well and comfortably housed, and the reasonable requirements of occupants are provided. Each house, with very few exceptions, has its own

water supply, and where one tap is used by two or more houses, it is within a convenient distance of all of them. There are, as a rule, large airy yards in the rear of the houses. Overcrowding is rare, and when it occurs is generally due to temporary causes. The drainage of all cottage property is connected with the general sewerage system. Defects of any kind are promptly dealt with, and in a large number of instances new drains have been laid within recent years.

The Sanitary Inspector, Mr. Percival, furnishes information as to matters coming under his supervision.

Nuisance Abatement.—The number of nuisances discovered or brought to the knowledge of the Inspector was 461. The number abated was 448. The number of preliminary notices issued in respect of these nuisances was 157. Several nuisances are often referred to in one notice. A large number of nuisances were owing to various defects in dwelling-houses, defective drains, soil-pipes and gulley traps, obstructed drains, sinks directly connected with drains, insanitary ashpits and privies, defective water-closets, unpaved yards and passages, houses dirty or without proper ventilation, with dilapidated roofs, without proper water supply, etc., or with stagnant water in the cellars. Other nuisances abated were from accumulation of manure, decayed fruit, fish, etc. Nine smoke-nuisances were reported and dealt with.

Overcrowding.—This nuisance occurred in 14 houses, and steps were taken to abate it.

Common Lodging-houses.—These are registered, and have been regularly visited by the Inspector. In one instance has there been cause of complaint. In all, 372 visits of inspection were made.

Slaughter-houses.—These were inspected 152 times during 1904.

Milkshops and Cowsheds.—There are 38 milkshops and 13 cowsheds, which have been kept under regular supervision.

Scavenging.—During 1904 there were 3,821 ashpit-emptyings, and 4,900 tons of refuse were removed. The ash-box emptyings numbered 84,000. Pails were emptied 1916 times.

SALE

Urban District.

Medical Officer of Health—Dr. Oliver Withers.
Population at Census, on April 1st, 1901—12,088.
Estimated Population in middle of 1904—12,500.
Area in acres—2,006.

Sale U. D.

Birth-rate per 1,000 living—28.1.
Death-rate per 1,000 living—15.1.
Death-rate from seven principal Zymotic Diseases—2.5.
Deaths under one year to 1,000 births—150.

The population of Sale Urban District was 9.644 at the Census in 1891, and 12,088 at the Census in 1901. The increase in the population during the decennium 1891-1901 was thus 2,444, that is 25.3 per cent. The estimate of the population made for the middle of the year 1904 is 12,500—a reasonably low estimate.

In 1904, the number of births registered was 352, and the number of deaths registered was 178. The number of deaths is increased by 11 deaths outside the District, viz., 1 in the Small-pox Hospital, 1 in St. Mary's Hospital, Manchester, 1 in the Royal Infirmary, and 8 in the Workhouse. Thus there were 189 deaths of persons belonging to the District. The birth-rate is 3.6 above the average in 1894-1903, and the death-rate is 1.1 above the average in the same ten years.

The number of deaths from the principal zymotic diseases in 1904, was 32, viz., 1 small-pox, 2 measles, 3 diphtheria or membranous croup, and 26 diarrhœa. The zymotic death-rate is about 1.2 above the average in 1894-1903. There were 4 deaths from enteritis, 10 from phthisis, 13 from cancer, 11 from bronchitis, 14 from pneumonia, 6 from alcoholism or cirrhosis of the liver, 7 from premature birth, 20 from heart diseases, 12 from cerebral disease, 7 from marasmus, and 8 from accidents.

Cases of Infectious Diseases Notified.—The number of cases of infectious diseases notified was 79, viz., 4 small-pox, 14 diphtheria, 51 scarlet fever, 1 puerperal fever, and 9 erysipelas. Of these 23 were removed to the Isolation Hospital at Baguley, viz., 3 small-pox, and 20 scarlet fever. Thus only 29.1 per cent. of the notified cases were isolated in hospital.

Small-pox.—The four cases were as follows :—

Male, 44 years, notified October 7th, vaccinated and re-vaccinated, eruption discrete.
Male, 20 years, notified October 8th, vaccinated, eruption discrete.
" 48 " " " 8th, " "
" 75 " " " 11th, " "

All these cases were promptly removed to the Baguley Hospital, except the second, which was convalescent when found. The disease was not of a specially severe type, and the patient who died (the man 75 years old) appears to have suffered from complications attaching to a previous disease from which he suffered when infected with small-pox.

Diphtheria.—All 14 cases were treated at home, and 3 proved fatal.

Scarlet Fever.—Most of these cases occurred during the last quarter of the year. Generally, the disease was mild in type.

Diarrhœa.—As is usual in hot and dry summers, epidemic diarrhœa was very prevalent during the summer and autumn of 1904. The 26 fatal cases were chiefly in the poorer parts of the District. Twenty-three of those who died were infants under a year old. The diarrhœa death-rate in 1904 was, therefore, 2.08 per 1,000 living—a remarkably high rate.

Measles.—During 1904 the cases of this disease were of a less severe character than in 1903. The number of cases is not known.

Erysipelas.—The cases of erysipelas were of the ordinary facial type.

Preventing the Spread of Infectious Disease.—Ordinarily, when a case of infectious disease is reported, the premises are visited, the cause if possible is ascertained, and advice is given as to the remedying of insanitary conditions and the best method of preventing the extension of the disease.

Isolation Hospital Accommodation.—Sale, being one of the Authorities forming the Bucklow Joint Hospital District, has excellent hospital provision at Baguley, which is easy of access. The prompt removal of cases, when isolation could not be obtained at home, enabled the Medical Officer of Health to limit the spread of infection as regards scarlet fever and diphtheria.

Water-supply.—This is from the Manchester Corporation reservoirs at Woodhead. The water is good, but contains a certain amount of earthy matter, which might be removed.

Systematic Inspection.—Inspections are made week by week, and sanitary conditions discovered are reported, steps being forthwith taken to remedy them.

Nuisance Abatement.—Among the nuisances dealt with were 62 which were due to unsatisfactory ashpits, 4 were due to defective house drains, 12 were due to cellar drains, 6 were due to defective soil pipes, and 4 were due to overcrowding. In course of dealing with these nuisances, 27 dilapidated privies were abolished, 20 ashpits were cemented over, 48 ashpits were renovated, 22 privies were converted into water-closets, 19 obstructed drains were cleansed, 10 waste pipes were trapped, etc.

Factory and Workshop Act, 1901.—The workshops and workplaces have been duly inspected. In 7 instances want of cleanliness was reported, and the necessary cleansing was effected. Overcrowding was reported in 4 instances and remedied in 2. Other nuisances reported were effectively dealt with.

Lodging-houses have been inspected as usual.

Dairies and Slaughter-houses have been regularly inspected.

Sewage Outfall.—These works were visited from time to time, and found to be in good order.

Canal Boats.—In all 136 canal boats have been visited by the Inspector. In 4 boats the regulation as to painting had not been carried out. What was required was done by the owners, without proceedings being necessary.

SANDBACH

Urban District.

Medical Officer of Health—Dr. R. Riddell.
Population at Census, on April 1st, 1901—5,558.
Estimated population in middle of 1904—5,558.
Area in acres—2,694.
Birth-rate per 1,000 living—24.4.
Death-rate per 1,000 living—14.3.
Death-rate from seven principal Zymotic Diseases—1.6.
Deaths under one year to 1,000 births—147.

The population of this Urban District was 5,824 at the Census in 1891, and 5,558 at the Census in 1901. Thus during the decennium 1891-1901 there was a decrease in the population of 266. It is estimated that the population in the middle of 1903 did not exceed the enumerated population in 1901.

During 1904, the number of births registered in the District was 136, and the number of deaths registered in the District was 76. Excluding 1 death not belonging to the District and including 5 deaths which occurred in the workhouse at Arclid, the deaths belonging to the District were 80. In 1904 the birth-rate and death-rate were a little below the average in the District.

Twenty of those who died were infants under a year old. This number is equal to 147 per 1000 births.

Nine of the whole number of deaths were from the principal zymotic diseases, viz. : 7 measles, 1 whooping-cough, and

1 diarrhœa. Two deaths were due to enteritis, 4 to phthisis, 4 to cancer, 4 to bronchitis, 7 to pneumonia, 2 to alcoholism, 2 to premature birth, 8 to heart diseases, and 12 to senile decay.

Infectious Disease Notified.—The number of cases of infectious disease notified was 10, viz.: 4 diphtheria, 5 scarlet fever and 1 enteric fever. These cases were treated at home and the necessary disinfection was effected in each case.

Measles and School-closure.—Early in 1904 the District was visited with a severe epidemic of measles. The outbreak began mainly at the Infants' Department of Sandbach Commons School. The Medical Officer of Health, on learning that there were 67 children absent from school out of 132, advised that the school be closed for 28 days, dating from March 3rd. On March 17th there were 53 children away from the Infants' Department of the Wesleyan School, on account of measles, and advice was given that this school should be closed for 14 days. On the schools reassembling after the holidays there were very few cases.

Isolation Hospital Accommodation.—In the last Annual Report it was stated that the Hospital at Arclid had been improved and enlarged, and was to be reserved for small-pox cases only. Hospital accommodation for other infectious diseases is under consideration by a combined Committee representing Congleton Rural District, the Borough of Congleton and the Urban Districts of Alsager, Sandbach, and Biddulph. It is proposed to erect a Hospital on a conveniently central site. Application has been made to the Local Government Board for sanction to borrow the money required.

Anthrax.—A youth, who worked as a butcher at Levenshulme, and who came to this District, fell ill. It was diagnosed that he was suffering from anthrax, he was treated accordingly, and as soon as possible sent to Monsall Hospital, Manchester, where he recovered. The house was thoroughly disinfected, the man's clothing and bedding were burned, and all proper precautions taken to prevent any spread of disease. No other case occurred.

Water-supply.—This is derived from an upland source and treated by Clarke's process. It is very pure, fresh, and soft. The quantity continues to be amply sufficient not only for Sandbach, but also for the townships supplied through Congleton Rural District Council. The treatment is costly, and requires constant care.

The District contains 1,352 houses—56 of them are in isolated positions away from the pipe-line, 57 have water from their own wells approved by the County Analyst, and 1,229 are supplied by the Council. During the year when many towns had to curtail

supply, the Sandbach water never failed, and all it was found necessary to do was to issue a notice against the waste of water. Owing to the large quantity of oxide of iron in the crude water, a good deal of sediment deposits in the gravitating main, thus obstructing the flow of water and increasing the friction in working. A new 10-in. duplicate gravitating main is being put in, so that the Council can clean out the main without interrupting the supply of water, and are provided with a second main in the event of a breakdown. It is hoped that when the larger main is got to work the friction will be reduced, and an economy effected in working. The water as supplied averages 5.2 degrees of hardness.

Scheme for Sewerage and Sewage Disposal.—The scheme prepared a year ago was not approved by the Local Government Board. In response to strong pressure from the County Council and the Local Government Board, an Engineer of experience, Mr. W. Wyatt, C.E., of Leamington, was called in to advise the District Council in this matter. He has prepared a scheme. Plans and estimates have been submitted to the Local Government Board, and it is expected that an inquiry by one of the Board's Inspectors will be held shortly.

New Houses.—Three new houses have been erected. All have water-closets connected with the sewerage system and are supplied with town's water.

Empty Houses—There are still about 50 empty houses in the District, mainly cottages. As the population is less than it was ten years ago, there is a surplus of cottages.

Common Lodging-houses—There are two large lodging-houses. These have been inspected, and found in order. The lime-washing, cleansing and ventilation has been attended to. Throughout the year there has been no overcrowding.

Dairies, &c., have been inspected and found satisfactory. New regulations were made by the Authority in December, 1899, and came in force on February 1st, 1900. Since this date the local dairies have been inspected and registered. In many instances structural defects have been pointed out and remedied.

Most of the milk from farms near Sandbach is sold to the Milk factories. The supply for the town is mostly obtained direct from the farmer, and retailed, without being stored in a milk-shop.

The cowsheds in the Urban District are well inspected and ventilation attended to.

Meat Inspection.—This has been carried out by the Medical Officer of Health and Sanitary Inspector. The carcase of a tuberculous cow was discovered and destroyed, but proceedings were not taken against the owner, as it was not exposed for sale.

Slaughter-houses (which are all on private property) have been inspected. They are not of the modern type, yet with care in working, and prompt removal of garbage, they have been kept in order.

One new slaughter-house has been built at Brickhouses.

Factories and Workshops have, under the new Act, come more directly within the control of the District Council. Generally, the air-space, ventilation, and sanitary arrangements have been found sufficient. Necessary improvements have been made after consultation with His Majesty's Inspector. No new factory or workshop has been erected during the year.

The bakehouses are in good order, and do not communicate with living-rooms or sleeping-rooms. They are all above ground.

Nuisance Abatement.—All the nuisances reported or discovered have had attention, and been dealt with.

Refuse Removal.—Mr. Amos Wood, the Surveyor and Sanitary Inspector, reports that scavenging, as in past years, has been the principal work of his department. Pending the completion of the outfall sewer and disposal works, very few water-closets have been put in recently, so the work is not diminishing. Two horses and five or six men have been almost wholly employed in this work. From 350 to 400 houses are fitted with pails, and these are emptied every ten days, or at shorter intervals. The remainder of the houses, nearly 1,000, have cesspool privies, the contents of which are dealt with separately. During the year, 4,260 visits were paid to remove ashes, &c, and 10,800 visits were paid to remove night-soil. From the cesspools 613 tubs of liquid manure were collected and sold, realising £76 16s. 6d. There were 1,700 loads of ashpit refuse carted away. The night-soil is taken right away from the town and used on the land, which is specially well adapted to receive this manure.

The storage of ashes has always been a difficulty, especially in confined situations. A number of owners have fitted their houses with dust-boxes. This is much better than storing the ashes and house refuse in pits, but as dust-boxes have to be emptied every week, the cost of scavenging is much increased.

The streets are properly scavenged, the channels well brushed, and the gullies cleaned out.

Canal-boats have been inspected and found duly registered and in a satisfactory condition. The boats usually only come within the District for a short time, being registered either at Runcorn or Stoke. No case of overcrowding was noticed. Two cases of infectious disease were discovered. The boat-cabins were fumigated with brimstone, the clothing was thoroughly disinfected, and the boats were all well cleansed.

TARPORLEY

Urban District.

Medical Officer of Health—Dr. G. A. Kenyon.
Population of Census on April 1st, 1901—2,644.
Estimated Population in middle of 1904—2,626.
Area in acres—6,195.
Birth-rate per 1,000 living—25.9.
Death-rate per 1,000 living—16.4.
Death-rate from seven principal Zymotic Diseases—1.5.
Deaths under one year to 1,000 births—88.

This Urban District consists of Rushton, Eaton, Utkinton, and Tarporley. The area is given as follows:—

	Area in Acres.
Rushton	1,797
Eaton-by-Tarporley	1,344
Utkinton (including Cotebrook) ...	1,889
Tarporley (including Rhuddall Heath)	1,165

The population was 2,702 at the Census in 1891, and 2,644 at the Census in 1901. The decrease in the population during the decennium 1891-1901 was thus 58—a little more than two per cent. The estimate of the population made for the middle of the year 1904 is 18 less than the Census population.

During 1904, the births registered in the District numbered 68, and the deaths registered in the District numbered 43. There appear to have been no other deaths belonging to the District. The birth-rate was 0.8 below the average in 1894-1903, and the death-rate was 0.4 below the average in the same ten years.

Only 6 of those who died were infants under a year old —a small proportion.

There were 4 deaths from the prinicpal zymotic diseases, viz., 1 measles, and 3 diarrhœa. There was one death from enteritis. There were 3 deaths from phthisis or other tubercular diseases, 5 from cancer, 2 from bronchitis or other diseases of the respiratory organs, 2 from alcoholism or cirrhosis of the liver, and 4 from heart diseases.

Scarlet Fever.—The only cases of infectious disease notified in 1904, were 50 cases of scarlet fever. All those cases terminated in recovery, so that there was no death in 1904 from a notifiable disease. The first 2 cases of scarlet fever were notified respectively on July 11th and 22nd. Both patients were isolated at home, but on the 26th of the same month 3 more notifications were received, and the Managers (on the advice of the Medical Officer of Health) at once closed

the local schools. Infection, however, continued to spread, so that by August 16th, 23 cases had been reported. After this no case was notified till September 11th. Then cases were notified from time to time till Nov. 25th. Besides this sequence of 48 cases, there was a case at Utkinton and one at Eaton. The schools were re-opened on September 19th. The subsequent cases did not appear to be connected with school attendance. From the first the children from infected houses were rigidly excluded from school attendance. Disinfection was properly attended to.

A printed notice, containing precautions and warnings was circulated.

In 24 of the infected houses the disease did not spread beyond the initial case, but in 9 houses 22 cases occurred.

There had been almost complete absence of scarlet fever in the locality affected for many years, and there was thus a considerable accumulation of susceptible subjects.

Inspection.—The Medical Officer of Health visited the District from time to time, to inquire into the circumstances of the scarlet fever outbreak, and to advise thereon. In June and September he made special inspections of the District, and subsequently advised the Council and Inspector on various matters connected with ordinary sanitary work, recorded progress made, and noted work yet required.

Back Yards, &c.—Bye-laws appear to be needed to enforce and regulate the paving of back yards, etc.

Water-supply.—The town of Tarporley is well supplied with water from the Liverpool Water Works. It is a soft water, and great care is taken not to use lead pipes for its distribution in any part of the house service. There are upwards of 300 houses and premises in connection with the mains. In parts of the District are ordinary wells, and other parts are supplied by pipes with water from springs which are of excellent quality, and afford a good supply to houses within reach of them.

The water supply required for part of the Township of Rushton, comprising 5 farms and 5 cottages, has been provided by a main connected with the Liverpool Water Works. This work has been done by Sir Philip Egerton, the owner of the property.

Sewerage and Sewage Disposal.—The extension of the sewers and the construction of outfall works have been completed, and are in full working order. Many house connections have been made already, and others are being made.

Removal of Excreta.—The disposal of excreta in Tarporley, as in other parts of the District, is chiefly with ashpit refuse. The combined privies and ashpits are mostly emptied by farmers without difficulty; but in Tarporley there have always been exceptions to this rule, owing to its more urban character.

Report of Surveyor and Inspector.—Mr. Greenway, the Surveyor and Inspector, gives attention to all complaints made, visits to houses complained of, sees to the cleansing of the dirty premises and the abatement of nuisances. He states that 40 complaints of nuisances were received during 1904, that 250 premises, etc., were specially inspected, and that 140 were re-inspected. Seven orders were issued for the sanitary amendment of houses, etc., 19 houses, etc., were cleansed or repaired, at 26 houses drains were repaired, trapped, &c., and 6 privies were converted into water-closets. Five nuisances from overcrowding have been abated.

No New Houses were built during the year.

Dairies, &c.—Twelve milk farms or dairies have been inspected, and found to conform to the regulations made by the District Council.

Slaughter-houses.—Two slaughter-houses have been regularly inspected.

Workshops.—There have been placed upon the register 6 bakehouses, 3 tailors' workshops, 1 plumber's shop, 1 printer's, 1 shoemaker's, 1 tinsmith's, 1 milliner's, and 1 dressmaker's. All have been regularly inspcted. They have with one exception been kept clean and in order. In one a want of cleanliness was reported and remedied.

WALLASEY

Urban District.

Melical Officer of Health—Dr. A. Craigmile.
Population at Census, 1901—53,579.
Estimated Population in middle of 1904—57,000.
Area in acres—3,349.
Birth-rate per 1,000 living—29.4.
Death-rate per 1,000 living—16.4.
Death-rate from seven principal Zymotic Diseases—2.8.
Deaths under one year to 1,000 births— 159.

The population of this Urban District was 33,229 at the Census in 1891, and 53,579 at the Census in 1901. The increase of the population during the decennium 1891-1901 was thus 20,350, that is 64.24 per cent.

Wallasey U. D.

The return of inhabited houses in this District, as supplied to me by Mr. J. J. Burnley, the Accountant, is as follows:—

	December 31st. 1904.	1903.	Increase.
Poulton-cum-Seacombe	4,321	4,241	80
Liscard	6,188	5,996	192
Wallasey	1,075	978	97
	11,584	11,215	369

This gives an increase of 369 inhabited house for the year, making a total of 11,584. At the census of 1901, the average number for each house was 4.97, and the number of houses multiplied by this gives a population of 57,572.

The estimate for the middle of 1903 was 56,000, and the natural increase of population for the year 1904 was 796. However, the newly inhabited houses, as given above, multiplied by 4.97, gives an increase of 1833. The estimate for the middle of the year 1904 (57,000) is therefore not excessive, especially as this takes no account of those on board vessels in the docks and the Wallasey portion of the river. It will be noticed that Liscard has the largest share of new property.

The number of births registered in the whole District was 1,678 in 1904. The number of deaths registered in the whole District was 882 in 1904. To the gross number of deaths must be added the deaths of 60 persons belonging to the District, who died in Tranmere Workhouse, Liverpool Hospitals, etc., and there must be deducted deaths of four persons registered in the District, but not belonging thereto. The deaths belonging to the District was therefore 938. The birth-rate for 1904 is about 0.8 below the average in 1894-1903. The death-rate for 1904 is about 0.3 above the average in 1894-1903.

The following meteorological results, obtained through the courtesy of Mr. Plummer from the Bidston Observatory, show the mean temperature, mean barometer, and the amount of rainfall in inches for every month of the year 1904. The mean barometer, as given below, has been reduced to 32 degs. Fahrenheit and to sea level:—

1904.	Mean Barometer (inches).	Mean Temperature (degrees).	Rainfall (inches).
January	29.858	39.8	2.090
February	29.523	38.2	3.599
March	29.980	40.4	1.793
April	29.879	47.6	1.075
May	29.913	52.0	2.105
June	30.039	56.6	1.331
July	29.998	62.3	1.344
August	29.976	59.5	3.529
September	30.044	55.6	2.782
October	30.079	50.6	1.484
November	30.004	44.2	1.538
December	29.877	39.5	2.505
			25.175

Wallasey U. D.

The Medical Officer of Health draws attention to the marked difference between the temperature and rainfall of 1904 and the temperature and rainfall of 1903. The sign + indicates an increase for 1904, and the sign — a decrease for 1904, as compared with the corresponding month in 1903.

	Mean Temperature in Degrees.	Rainfall. (inches).
January	—0.1	+0.105
February	—6.8	+2.000
March	—4.8	—0·199
April	+3·3	—0·614
May	+0.7	—0.404
June	+0.9	—0.584
July	+3.5	—0.995
August	+1.5	+0.155
September	+0.1	—1.534
October	—0.2	—5.888
November	—0.2	—1.227
December	+0.7	+0.942

It will be noticed that from April to September the average monthly temperature of 1904 was higher than in 1903. This long-continued increase in temperature, together with the diminished rainfall, resulted in the great increase of infantile diarrhœa, which proved so fatal a disease in 1904. The small amount of rainfall in 1904 is remarkable. The average rainfall for 37 years at Bidston has been about 28⅔ inches.

Diarrhœa and enteritis (practically the same disease under different names) prevailed extensively during the late summer and autumn. The number of deaths recorded from July to October, was as follows:—

	Diarrhœa.	Enteritis.	
July	8	1	= 9
August	33	0	= 33
September	16	2	= 18
October	4		= 6
	61	5	= 66

The whole number of deaths certified from diarrhœa and enteritis in 1904 was 71. The proportion of deaths of infants under 1 year old to each 1,000 births in 1904 was 159. During the ten years, 1894-1903, the proportion was 140 per 1,000 births. Of the 268 deaths of infants in 1904, 9 died of measles, 21 of whooping-cough, 1 of diphtheria, 1 of croup, 50 of diarrhœa, 9 of enteritis, 2 of erysipelas, 5 of tubercular disease, 33 of bronchitis and pneumonia and other diseases of the respiratory organs, 2 of venereal diseases, 32 of premature birth, 2 of heart diseases, 4 of accidents, and 97 of all other causes, including convulsions, atrophy, debility, and marasmus.

Of the whole number of deaths in 1904, there were 202 of persons upwards of 55 years of age.

Fifteen of the deaths were not certified by a registered medical practitioner, or by the coroner; thus the uncertified

deaths were equal to 1.7 per cent. There were 57 inquests held during 1904, a number equal to 6.4 per cent.

The principal zymotic diseases caused deaths, namely, 32 measles, 44 whooping cough, 9 diphtheria and membranous croup, 7 enteric fever, and 62 diarrhœa. The zymotic death-rate in 1904 (2.8) is decidedly high. The average in the District in 1894-1903 being about 1.7.

Infectious Disease Notified.—The number of cases of infectious disease notified in 1904 was 413, viz.:—6 small-pox, 53 diphtheria, 2 membranous croup, 270 scarlet fever, 39 enteric fever, 4 puerperal fever, and 39 erysipelas.

Some particulars with reference to these cases, especially showing the localities in which the cases occurred, are shown in the tabular statement below:—

TOWNSHIPS.			Small-pox.	Diphtheria.	Membranous Croup.	Erysipelas.	Scarlatina.	Typhus.	Typhoid.	Puerperal.	Totals.	
Poulton-cum-S'combe	Poulton ...	Under 5	—	4	1	1	15	—	2	—	23	
		Over 5	—	2	—	6	27	—	3	1	39	
	Seacombe ...	Under 5	—	3	—	2	23	—	—	—	28	
		Over 5	2	9	—	6	47	—	13	2	79	
Liscard.	Egremont ...	Under 5	—	2	—	—	13	—	—	—	15	
		Over 5	1	4	—	5	32	—	8	—	50	
	Liscard ...	Under 5	—	1	—	2	7	—	2	—	12	
		Over 5	1	7	—	10	45	—	4	1	68	
	New Brighton	Under 5	—	3	2	—	11	—	3	—	19	
		Over 5	2	6	—	4	29	—	3	—	44	
Wallasey		Under 5	—	1	—	—	9	—	—	—	10	
		Over 5	—	10	—	3	12	—	1	—	26	
Totals		Under 5	—	14	3	5	78	—	7	—	107	413
		Over 5	6	38	—	34	192	—	32	4	306	

NOTE.—For the purpose of more defined Localisation:—Poulton includes that portion of Poulton-cum-Seacombe Township to the West of Wheatland Lane; Liscard Township is above divided into Egremont (portion of Liscard between Seacombe and Green Lane); Liscard Proper, including Liscard Village, Magazines, and on to Magazine Lane and Mount Pleasant, and New Brighton, including rest of Liscard Township.

Small-pox.—Of the 6 cases notified, 5 were removed to Leasowe Road Hospital. The remaining case was that of an engineer, who came home from his steamship (which arrived in port in South Wales), and immediately developed the disease, having evidently been infected before he left the ship. He had a comparatively mild attack, and was very efficiently isolated at home.

Two of the cases occurred in March (1 in Seacombe and 1 in Egremont), 1 in April in Seacombe, and 2 in September in Upper Brighton. The two last-mentioned were husband

and wife. The husband, who first took the disease, being employed at some works in Seacombe. It was impossible to trace the origin of infection here. One of the Seacombe cases was evidently infected from a relative, who was treated for small-pox at a hospital in a neighbouring District. In only one of the six cases was the attack severe and the eruption confluent. The following is a statement of the number of cases of small-pox which have occurred in the District from 1885 to 1904:—

1885.—2 cases notified—none fatal.
1886.—3 cases notified—2 fatal.
1887 to 1892 } No cases notified.
1893.—1 case notified—not fatal.
1894.—1 case notified—not fatal.
1895.—5 cases notified—none fatal.
1896 to 1900 } No cases notified.
1901.—1 case notified—not fatal.
1902.—40 cases notified—none fatal.
1903.—26 cases notified—1 fatal.
1904.—6 cases notified—none fatal.

Thus there have been 85 cases in 20 years, of which only 3 proved fatal, less than 1 death to 28 cases.

Measles.—As already staetd 32 fatal cases occurred in 1904. This gives a mortality of 0.56 per 1,000 living. Eleven fatal cases occurred in Poulton-cum-Seacombe, 20 in Liscard, and 1 in Wallasey Township. Cases were scattered all over the year, but April, May, and June, were the months in which this disease was most prevalent, 8 deaths occurring in April, 8 in May, and 7 in June.

Whooping-cough caused 42 deaths, as compared with 10 in the previous year. It began to prevail extensively in December, 1903, and continued throughout 1904, but chiefly in the first half of the year, the deaths in the different months being as shown below:—

Jan.	Feb.	Mar.	April.	May.	June.	July.	August.	Sep.	Oct.	Nov.	Dec.
3	9	10	9	5	1	3	0	1	0	1	0

The 32 deaths give a mortality of 0.73 per 1,000 living.

School-closing.—Orders for the closing of schools were isued in 8 instances owing to the prevalence of measles or whooping-cough. Particulars are given below:—

Name of School.	Date and Period of Closing.	Reason for Closing.
School Lane, Wallasey (Infant Department)	January 16th for three weeks	Prevalence of Whooping Cough
Egerton Street (Infant Department)	February 22nd for three weeks	Prevalence of Whooping Cough and Chicken-pox.
St. Mary's (Infant Department)	April 12th for three weeks	Epidemic of Measles and Whooping Cough
Rake Lane (All Departments)	April 13th for three weeks	Epidemic of Measles and Whooping Cough.
St. James', Magazine Lane (All Departments)	April 28th until May 21st	Epidemic of Measles.
St. James', Egerton Street (Infant Department)	May 11th until May 30th	Prevalence of Whooping Cough and Measles.
St. Paul's (Infant Department)	June 29th to commencement of Summer holidays (July 7th)	Extensive prevalence and continued increase of Measles.
Poulton Infants' School (Limekiln Lane)	July 1st to commencement of Summer holidays (July 7th)	Prevalence of Measles.

Diphtheria and Membranous Croup.—In 1904 there were 9 deaths registered as due to diphtheria, and 3 as due to membranous croup. There were 52 cases of diphtheria, and 3 of membranous croup notified.

The 12 deaths are equal to a mortality of 0.21 per 1,000 living. The record is exceptional in this District, where hitherto diphtheria has not been either very prevalent or very fatal.

Scarlet Fever was very prevalent in 1903, an continued so all through 1904. In the latter year there were fatal cases, giving a mortality of 0.14 per 1,000 living. The mortality per cent. of notified cases was only 2.9 in 1904, whereas it was 4.1 in 1903. Although, as a rule, the cases were of a mild type, towards the end of the year there were many severe cases, with the throat bad, and complicated with discharges from the nose and ears. Of the mild cases some were overlooked by parents, for a time, and these spread infection in the family and amongst school-mates. As a rule, teachers are too much occupied with their own arduous duties, to be constantly on the outlook for slight cases of infectious disease, and they usually have not the power to detect them. Whenever any suspicious case occurs the child should be sent home with instructions to the parents to call in medical aid. Indeed, many mild cases have occurred where it was most difficult to determine whether the child had scarlet fever or not, and the only course was to isolate the patient, and wait. The localities in which the cases occurred, the months in which

notifications were received, and the deaths which took place, are shown below:—

Scarlatina Notifications in 1904.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct	Nov.	Dec.	Totals
Seacombe	9	6	8	5	6	2	9	6	13	7	25	16	112
L'card { Egremont	1	2	2	—	1	4	5	3	6	9	12	—	45
L'card { Liscard (Proper) ...	7	12	7	2	1	2	3	3	6	4	4	1	52
L'card { New Brighton ...	4	2	1	3	—	1	3	1	8	11	2	4	40
Wallasey	—	4	3	—	—	—	2	1	5	1	4	1	21
Cases	21	26	21	10	8	9	22	14	38	32	47	22	270
Deaths	—	—	—	2	—	—	—	—	2	—	2	2	8

Typhoid or Enteric Fever.—The localities in which the 39 cases occurred, and the months in which notifications were received, and deaths took place, are told in tabular form below:—

Typhoid Notifications in 1904.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Totals
Seacombe...	4	—	1	1	—	—	—	4	4	—	3	1	18
L'card { Egremont	3	1	—	—	—	—	1	2	1	—	—	—	8
L'card { Liscard (Proper) ...	—	—	—	—	—	—	2	—	2	1	1	—	6
L'card { New Brighton ...	—	1	—	—	—	—	—	3	—	2	—	—	6
Wallasey	1	—	—	—	—	—	—	—	—	—	—	—	1
Cases	8	2	1	1	—	—	3	9	7	3	4	1	39
Deaths	1	1	—	—	—	—	—	1	1	—	1	2	7

The 7 deaths from this disease are equal to a mortality of 0.12 per 1,000 living. The case-mortality is excessive, yet the number of cases notified was fewer than in any year since 1889, when notification becomes necessary. The diminished number of cases shows that the District is reaping the advantage of the extensive re-construction of sewers and drains, which has been carried out of late years, and is still in progress.

The number of cases of enteric fever, and the number of deaths since 1890, together with the death-rate per 1,000, appear in the following tabular statement:—

Year.	Deaths.	Rate per 1,000.	Notified cases.
1889	12	0.36	—
1890	9	0.26	42
1891	20	0.59	77
1892	20	0.57	62
1893	23	0.64	132
1894	13	0.35	89
1895	8	0.20	67
1896	10	0.24	112
1897	9	0.20	93
1898	9	0.19	87
1899	11	0.23	132

Wallasey U. D.

Year.	Deaths.	Rate per 1,000.	Notified cases.
1900	17	0.32	163
1901	31	0.57	257
1902	12	0.21	64
1903	5	0.08	47
1904	7	0.12	39

These figures show to what an extent enteric fever is diminishing in the District, and prove that the efforts to cope with enteric fever have been successful in a great measure.

Diarrhœa was the cause of 62 deaths. Fifty of those who died were under 1 year of age, and 10 were upwards of 1 year and under 5 years. This term now includes all deaths registered as diarrhœa, zymotic diarrhœa, zymotic enteritis, and dysentry. There were, in addition, 9 deaths (all of infants) certified as "due to enteritis," and probably most of these were cases of diarrhœa. The 62 deaths are equal to a death-rate of 1.08 per 1,000 living.

In 1904, 61 of the deaths from diarrhœa took place in July, August, September and October. During these months the rainfall was deficient, and the temperature was exceptionally for the time of the year. These appear to be the chief causes why this disease was so fatal in1904.

The Care and Feeding of Infants.—The question of providing premises for the preparation of sterilised and humanised milk for infants was carefully considered by the Health Committee, a deputation visited the chief depôt in Liverpool and saw all the details of the work carried on there. They were most favourably impressed by the Liverpool system, but it was found the expense for this District would be great, especially as, in many instances, it is not really the poorest classes who avail themselves of this milk supply, and also as one depôt would probably not suffice for the whole District, but the matter is still under consideration.

Report of Female Sanitary Inspector.—Miss Birrell, the Female Sanitary Inspector, has again done much good work. Although her report deals with various other matters, it is convenient to introduce it here, as so many of her duties have to do with the care and treatment of infants. It will be seen that it contains many interesting details of her numerous visits, and the Medical Officer of Health looks to see excellent results therefrom. Her report is as follows:—

"I beg to report that, as was the case in the preceding year, house-to-house visitation amongst the poorer classes has engaged most of the time and attention of the Female Inspector. Each family is seen in their own room or house, the requirements of the Health Committee as to cleanliness,

etc., explained, and the advantages resulting from their observance pointed out.

"Specially dirty families are re-visited at frequent intervals, and the street is systematically re-visited every three or four months if circumstances permit. In the lowest streets the work is much impeded by the frequent removal of the people; it is no uncommon thing in these streets to find in about three months that half the people have removed.

"Very little time is occupied in re-visiting the clean families, but much time is devoted to those who neglect their houses and children, and attention is given to those who are suspected of having cleaned up in anticipation of the Inspector's visit.

"In many cases much improvement has resulted. The advantages of fresh air and cleanliness have been explained, and a greater frequency in the opening of windows and a diminution in the amount of objectionable refuse found in the rooms, and especially in the bedrooms has been noticed. Twelve mattresses, which were found to be in a filthy and verminous condition, have been destroyed during the year.

"Attention has been paid to cases where habits of drunkenness, indolence, and improvidence have been noticed, and a certain amount of improvement has resulted, but such cases require constant supervision in order to prevent them lapsing into the old careless ways. In cases of sickness, the friends of the sick persons are influenced to seek medical treatment or admission into hospital.

"Structural and sanitary defects, and cases of overcrowding are brought under the notice of the Departments having control of such matters.

"Much ignorance, and not a little carelessness, still prevails on the subject of infant feeding. Special enquiries are always made at the time of visiting as to the method of feeding, and instruction is given verbally where necessary. A memorandum of simple instructions was widely distributed—amongst the poorer classes—at the commencement of the summer. These instructions, while indicating the method by which infants should be fed, point out also the importance of cleanliness of person, clothing and surroundings. In many cases these leaflets have been followed by good results.

"Where cases of infantile diarrhœa were discovered, in the course of house-to-house visitation, the use of sterilised humanised milk was advocated, and the method of preparing it shown to those mothers who seemed sufficiently interested in the matter. In every case in which this preparation was used, excellent results were obtained.

"In most cases long-tube bottles were found to be in use, the majority of the tubes being foul, even where the bottles were perfectly sweet. On the advantages of boat-shaped bottles being explained, many of the mothers have discarded the long-tube bottles in favour of the others.

"During the autumn, enquiry visits were paid to houses at which deaths from infantile diarrhœa had occurred. Out of 53 cases visited, only one was found to have been entirely breast-fed (and this child was twelve months old), nine were partially breast-fed, and the remaining 43 were entirely artificially fed, the majority of these having received food unsuitable for young infants.

AGE AT DEATH.

Under 12 months.	Between 1—2 years.	Between 2—3 years
47	8	1

Average age at death = 7.9 months.

METHOD OF FEEDING AT TIME OF DEATH.

Breast-Fed.	Partly Breast, Partly Bottle.	Bottle-Fed.
1	9	43

"Several of the schools in the district have been regularly visited, and enquiries made regarding children in attendance in a dirty or neglected condition.

"Those reported are visited at their homes until a marked improvement in their condition is observed.

"Letter cards are distributed to all the Head Teachers, in order that such cases may be reported to the Health Department as they arise. Fortunately, they are comparatively rare.

"As in the preceding year, workshops employing female labour have been visited.

"No overcrowding was discovered, and few rooms were found in a dirty condition—of these, all were cleansed on the occasion of the next visit.

"The general condition as regards cleanliness, ventilation, and air space is very good."

Influenza caused 5 deaths in 1904, this is not a large number, and compares favourably with 13 deaths in 1903, and 8 in 1902. The disease appears to have been prevalent early in 1904. Two of the fatal cases occurred in January, 2 in March, and 1 in April.

Reconstruction of Main Sewers.—This important work was begun in January, 1898. Starting at Leasowe

Road, from the junction with the large marginal sewer, the work was continued through Wallasey Village to Grove Road, up Grove Road and Hose-side, and also through Warren Drive on to Portland Street. The year 1899 was an unusually active one in connection with sewerage work, and witnessed the completion of three extensive contracts, involving the expenditure of about £20,000. In 1900 excellent reconstruction work was done in the lower portion of New Brighton, where the condition of the sewers was found to be very bad indeed. Equally good reconstruction work is being carried on in connection with the Higher Parade, New Brighton. Owing to the occurrence of typhoid fever there, and to the complaints that the drains were blocked in several houses, the Sanitary Department asked for and obtained power, to uncover and examine the sewer draining all these houses. The drains of the houses do not run out into the sewer in Virginia Road, but all enter a sewer that runs along the back yards of the row, and finally goes under a house in Victoria Road and empties into the Victoria Road sewer. This sewer receiving all these drains, was found to be so faulty and defective that it was completely blocked, and hence the sewage was dammed back and overflowing from various gullies in these back yards. After various discussions at the Health Committee, and negotiations carried on between the Clerk and the Solicitor and the Inspector, and the agents of the owner, the matter was amicably arranged, the owner agreeing to drain each house separately into Virginia Road. In 1901 the work done included the laying of the new outfall sewer from Dock Road to Oakdale, the laying of new sewers in Wheatland Lane and in St. Paul's Road, Seacombe, certain new relief sewers, and the reconstruction of many defective sewers. In the Annual Reports for 1900, 1901, 1902, and 1903, were lists of the most important streets, etc., in which sewers have been constructed or re-constructed.

Mr. Travers, the Engineer and Surveyor, has supplied the following report of the work done by him in connection with the sewers and their re-construction:—

"During the year 1904 considerable sewerage improvements have been taken in hand, the most important being the commencement of the work of sewering a portion of the Leasowe Road section of the low-lying area of Wallasey on Shone's Hydro-Pneumatic System. The work is approaching completion, the ejectors being now in use for the occasional lifting of water from the sewer trenches. Another important work has been the removal of the defective sewer in Falkland Road and the substitution of a new sewer under a Local Government Board sanction. In connection with this work the levels were re-arranged and a special manhole was built in Liscard Road making it possible to use

the Falkland Road sewer as a storm overflow from the Liscard Road sewer. The work of repairing and re-inverting the main brick sewer along King Street and Brighton Street has been commenced and that portion between Trafalgar Road and Rice Lane (370 yards) has been completed. This main brick sewer (one of the oldest in the district) is in an exceedingly dilapidated condition. The whole of the manholes in the district have been washed down and disinfected with Chloros. This has been attended with very good results, as although the summer of 1904 was an exceedingly dry one, very few complaints of smells, etc., were received.

"A number of new manholes and flushing chambers have been built and ventilating shafts erected and a large number of new gullies have been fixed in various parts of the district. The usual sewer flushing and disinfecting throughout the district has been carried out.

"Defective sewers in the following streets and passages have been re-constructed—

Albert Street (part of).

Belgrave Street.

Breck Road (between St. Hilary Brow and Public Footpath to Bidston).

Brook Street.

Bridgecroft Road.

Charlotte Road.

Charlotte Road (passage at rear of west side and cross passages east and west sides).

Eaton Street.

Egerton Street (completed).

Ellis Street.

Ellis Street (passage off north side).

Egerton Grove and passage rear of east side.

Falkland Road.

Grosvenor Street (between Westminster Road and Eaton Street).

Hope Street (passage at rear of Nos. 20 to 30).

Liscard Terrace.

Mount Pleasant Road (passage rear of Nos. 46, 48, and 50).

Percy Road (passage at rear of east side between St. Paul's Road and St. Paul's Bridle Path).

St. Paul's Bridle Path (between Percy Road and passage rear of east side of Percy Road).

Wallasey U. D.

Stanley Street.

Tobin Street (passage at rear of south side).

Union Street (rear of 10 to 20 and 1 to 11, Gresford Place).

Withens Lane, reconstruction of sewer in existing portion of proposed new street between Withen's Lane and Penkett Road.

Stanley Street (passage rear of east and west sides of) proceeding.

Egerton Street (passage at rear of 46-64)."

In connection with the notification of cases of enteric fever during 1904, reconstruction (partial or entire) of the drainage systems of the following houses has been carried out:—

90, Rappart Road, Seacombe.

38, Brighton Street, Seacombe.

90, King Street, Egremont.

"Hebblecroft," Egremont Promenade.

26, Hope Street, New Brighton.

Drainage reconstruction (partial or entire) has also taken place at the following houses where diphtheria has been notified:—

18, Westmoreland Road, New Brighton.
9, Fell Street, Seacombe.

Isolation Hospital Accommodation is provided at Mill Lane, and (for small-pox) at Leasowe Road. The accommodation was very much in use in 1904. In all, 319 cases were treated.

The number of cases admitted in 1903 was 397, the number admitted in 1902 was 294, the number admitted in 1901 was 246, the number admitted in 1900 was 175, the number admitted in 1899 was 191, the number admitted in 1898 was 163, the number admitted in 1897 was 171, the number admitted in 1896 was 145, and the number admitted in 1895 was 85.

Particulars of the cases admitted to Hospital, the townships from which they came, etc., is given in the following tabular statement:—

TOWNSHIPS.		Years	Small-pox	Diphtheria	Membranous Croup	Erysipelas	Scarlatina	Typhus	Typhoid	Other Diseases	Totals	
Poulton-cum-S'combe	Poulton ...	Under 5	—	3A	—	—	3	—	1	—		
		Over 5	—	3	—	—	21	—	1	—		
	Seacombe ...	Under 5	—	3A	1A	—	19C	—	—	—		
		Over 5	2	4	—	1	33A	—	8A	—		
Liscard.	Egremont ...	Under 5	—	3	—	—	5	—	—	—		
		Over 5	1	1	—	1	21A	—	3A	1*		
	Liscard ...	Under 5	—	—	—	—	4	—	1	—		
		Over 5	—	3	—	1	23B	—	6A	1*		
	NewBright'n	Under 5	—	1	—	—	4	—	3A	—		
		Over 5	2	5A	—	—	23	—	1	1*		
Wallasey		Under 5	—	—	—	—	6	—	—	—		
		Over 5	—	7	—	—	8	—	—	—		
Totals... ...		Under 5	—	10	1	—	41	—	5	—	57	239
		Over 5	5	23	—	3	129	—	19	3	182	

NOTE.—A=1 death; B=2 deaths; C=3 deaths; *=uncertain cases.

NOTE.—For the purpose of more defined Localisation:—Poulton includes that portion of Poulton-cum-Seacombe Township to the West of Wheatland Lane; Liscard Township is above divided into Egremont (portion of Liscard between Seacombe and Green Lane); Liscard Proper, including Liscard Village, Magazines, and on to Magazine Lane and Mount Pleasant; and New Brighton, including rest of Liscard Township.

In the annual report for 1903 it was mentioned that a new pavilion at Mill Lane Hospital was opened on January 13th of that year. This provides accommodation for 12 male and 12 female patients (with cots for children in addition), and a convalescent ward attached to both male and female wards, together with kitchen, bath-room, and sanitary appliances of the most approved kind. An addition to the Administhative Block was also completed during 1903, enabling all the nurses to be accommodated there, instead of on contiguous premises. A new Discharging Block, on the usual lines, was also finished and opened in 1903. The laundry, also, was much enlarged in 1903, and brought up to date with the most recent appliances. A porter's lodge and an ambulance shed were also so provided.

The new pavilion proved of the greatest advantage in the treatment of scarlet fever in 1904, but as the year advanced the pressure on its space was great, and justified the resolution come to in 1903, to erect a fourth pavilion, which will probably also be used for scarlet fever. This was in course of erection during 1904, and is now rapidly approaching completion. It will contain 20 beds, exclusive of cots. When this pavilion is ready there ought to be ample provision for the isolation of scarlet fever, diphtheria, enteric fever, and such cases of erysipelas, etc., as from time to time require isolation.

The new pavilion was rendered necessary when it was determined to use the site of the North Meade House for Public Offices.

The acquisition, some time since, of a large extent of extra ground for hospital extension has been amply justified. The Special Hospital, in Leasowe Road, used for small-pox cases only, is worked from Mill Lane Hospital, nurses being sent there as required. A caretaker always sleeps there when the Hospital is in use, and when it is closed other employment is found for him.

Flushing Sewers and House Drains.—The flushing of public sewers is in the hands of the Surveyor and Engineer's staff. An enormous flushing tank (holding 1,800 gallons, and with a 12in. outlet) was procured for the purpose, and this began systematic work early in 1898. Three separate gangs are employed for flushing the sewers and back passages. A tank holding 500 gallons is used for the branch sewers, and where the tanks are inapplicable (as in back passages, etc., hose-piping is used. Quite independent of these are the three gangs entrusted with the flushing of house drains, belonging to the Sanitary Department. These gangs were constantly occupied throughout the year, and the drains, etc., of each house in the District have been flushed at least twice, Each gang has been provided with a set of Cooper's Patent Suction Pumps, and thus, many drains found choked are cleared, without the ground having to be opened. During the summer, disinfectants were freely used in connection with this work. The flushers reported many defects, as regards sanitary fittings, on premises visited, which were dealt with in the usual way. The flushing of drains at houses where cases of infectious disease are notified, receives special attention. All the large schools are also specially visited by a flushing gang.

Unfortunately, the limited supply of water prevents these gangs from carrying out their work in a satisfactory way. This is especially the case with regard to the use of the large tanks used for flushing the more important sewers, and until the District obtains an increased supply of water it is impossible to remedy the defect. Even the house-to-house flushing is hampered, for if there were water enough the drains of each house might be flushed once a quarter instead of only twice a year.

A more abundant supply of water, either fresh or salt, is much needed, and measures to obtain this have been taken.

Sewer Ventilators.—The system of ventilating sewers by means of shafts attached to buildings, and the closing of street surface ventilators, has been extended, wherever cir-

cumstances rendered it advisable; and at the summits of several main sewers tall ventilating columns have been erected.

Refuse Removal.—On July 1st, 1897, the Health Committee began to undertake the collection of nightsoil with their own staff of men, horses, and carts. This Department of sanitary work is now being carried on smoothly and effectively, in marked contrast to the lax methods followed by contractors of late years, which gave rise to numerous and well-founded complaints, as to full ashpits, such complaints have practically ceased.

In many of the new houses, and also in many old ones, covered dust bins have been substituted for ashpits. These are a great improvement. They are emptied weekly, on Fridays. As they are scattered all over the District, a good deal of extra trouble is entailed in dust collection. However, as the improved receptacles become more general they will save work, being more easily emptied. They have handles by which two men can carry them to the cart, and empty the contents therein at once; and thus is avoided the emptying on the road of foul material till the cart comes round to pick it up. The noise made by barrows and shovelling is also done away with. A revolution in the old system of refuse removal is therefore being quietly effected. The new method is, of course, much more in accordance with modern sanitary ideas, preventing accumulations of refuse remaining any length of time in close proximity to houses. The bins only cost a few shillings apiece, and any householder can do away with the ashpit nuisance altogether by substituting a covered dust-bin, which will be emptied by the Council's men.

For schools and public institutions, as well as for private houses, the use of covered dust-bins, emptied weekly, will be found a great advantage.

Trade-refuse Removal.—Arrangements are made for the removal during the summer of all offal, etc., from butchers' premises, and of all vegetable and animal trade-refuse from hotels, dining-rooms, large lodging-houses, etc. Each occupier has to provide a galvanised iron bin, with close-fitting cover, and then give notice to the Authority, who will have the bin emptied weekly. Samples of bins, with other approved sanitary fittings, are on view at the office of the Sanitary Department.

The Destructor for the cremation of refuse, situate in Gorsey Lane, which was opened in June, 1895, was added to in 1897; the six cells being supplemented by six more. The power developed by the heat generated in the destructor cells is used for the production of electricity to light the premises, and also for turning a mill to grind the clinkers and

make mortar, which is sold to builders. The stabling and other buildings for the plant used in the collection of night-soil, etc., were completed satisfactorily during 1897.

Factories and Workshops.—There are at present on the Register 195 workshops. Of these 85 are bakehouses and 16 laundries, the remainder being dressmakers, milliners, tailors, boot-makers and repairers, etc. There were 497 inspections made, and as a result 43 written notices were served, 32 of which were in respect of want of cleanliness; one notice was for overcrowding. The defects were all put right. There were 28 premises of home-workers also inspected.

Vaccination Returns.—These refer to 620 births registered during the year ending June 30th, 1904. The particulars are supplied by the Vaccination Officer:—

Successfully Vaccinated	1,354
Died before Vaccination	163
Insusceptible	7
Conscientious Objections...	6
Postponed by Medical Certificate	45
Removed, Traced, and Vaccination Officer Notified	13
Not found or removed to places unknown ...	31
Total Births Registered	1,620

This shows that only 1.9 per cent. of the 620 infants born escaped vaccination requirements. In the year ending June 30th, 1901, 2.1 per cent. escaped, in the year ending June 30th, 1902, 2.5 per cent. escaped, and in the year ending June 30th, 1903, 3.0 per cent. escaped. These are very satisfactory records, and show how efficiently the new Vaccination Act has been carried out in Wallasey District. It will be observed that only 6 persons received exemption under the Conscience Clause.

Water-supply.—Particulars of the amount of water pumped, and its distribution, are supplied by Mr. J. H. Crowther, the Gas and Water Engineer. The average quantity used per head per day in 1904 was 32.99 gallons, divided as follows:—

Supplied by Meter	7.26	gallons
Supplied to Shipping	.15	,,
Watering Streets and Roadmaking ...	.43	,,
Flushing Sewers by Hose and Cart ...	.36	,,
Domestic and other purposes including Drinking Fountains	24.79	,,

The entire volume of water supplied in 1904 was 674,351,553 gallons. The quantity of water used for flushing sewers during the year was 7,386,060 gallons.

It was mentioned in the last annual report that the supply of Vyrnwy water commenced on Oct. 10th, 1903. Some time since owing to the old Poulton wells, Nos. 1 and 2, having become impregnated with too large a proportion of salt, it was felt that it was not safe to depend entirely on the Seaview Road well. After long and protracted consideration of a water supply, it was finally decided not to seek an independent source, but to apply to Liverpool to provide Vyrnwy water. The result of this was that a pipe line was laid from near Norton Tower, in the Delamere district, from the Liverpool main line, and at present Wallasey Urban District takes at the rate of 500,000 gallons daily from this source.

Sale of Food and Drugs Acts.—There were 106 samples of various food taken during the year, and submitted for analysis, viz.:—8 brandy, 18 butter, 2 coffee, 1 gin, 1 ginger beer, 5 margarine, 36 milk, 1 pepper, 2 rum, 1 soda water, 8 vinegar, and 2 whiskey.

Of these, 1 sample of brandy, 1 of milk, 1 of vinegar, and 2 samples of whiskey were found to be adulterated. The remaining samples were certified pure.

Prosecutions were instituted in respect of the 5 samples adulterated. The case against the seller of brandy for having sold liquor adulterated with spirit derived from a source other than the grape, was dismissed.

The seller of milk adulterated with 4 per cent. of water, was fined 40s., and 14s. 6d. costs. The seller of vinegar containing ascetic acid derived from a source other than malt, was fined 40s., and 17s. 6d. costs, the seller of whiskey containing 7 per cent. excess of water, was fined 3s. 6d., and the seller of whiskey containing 9 per cent. of water, was fined 20s., and 14s. 6d. costs.

The Chief Sanitary Inspector, Mr. H. C. Bascombe, furnishes information on matters coming under his supervision.

Abatement of Nuisances.—The number of notices issued for the abatement of nuisances in 1904 was 1124. In many instances a notice referred to several distinct nuisances. The abatement of many nuisances was also obtained without the serving of formal notices. 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 or channelling, offensive accumulations, defective ashpits, privies and water-closets, defective cisterns, offensive ponds, sub-soil

yards lodging foul water, damp walls, dirty or overcrowded houses, animals so kept as to be a nuisance, etc. Houses with defective or dangerous floors, staircases or walls, were also dealt with, as well as rooms insufficiently lighted and ventilated. Three smoke nuisances were noted and dealt with.— Each notice served has, besides describing the cause of the nuisance complained of, specified the sanitary work required to abate the same, in the most satisfactory and economical manner. Particular care has been taken not to put owners or occupiers to unnecessary expense.

Complaints of Nuisances.—There were 814 special complaints of nuisances received in 1904. In 710 cases cause of complaint was found to exist, and preliminary notices were served on owners to remedy defects. In 104 cases there was no nuisance apparent at the time of inspection, or the cause of complaint was not of sufficient importance to warrant the serving of a notice on the owner. In 4 cases the nuisance was due to the tenant's neglect, and he was required to abate the same. In several instances nuisances were abated by the flushes, whilst in 127 instances it was found that the matters complained of came within the province of other departments of the Council, and to which they were subsequently referred.

Nuisances Caused by Occupiers.—Many notices have this year been served upon the occupiers of premises to abate nuisances caused by neglect, and to keep the gullies and sanitary conveniences clean and in good order.

House-to-House Inspections were proceeded with during 1903 as time permitted, and thus many defects were discovered and improvements effected.

As in previous years a house-to-house inspection was made of the premises on the Lower Parade prior to the Easter holidays, the whole of the Staff assisting in this special work. Several defective conditions were found to exist, for the remedying of which the usual steps were taken, and were effective.

Drain Testing.—A considerable portion of the Inspector's time is taken up in testing house drains and fittings, and according to his experience the value of such testing cannot be over estimated. He makes use of the usual smoke-testing machine or the so-called rockets. However he points out that it is quite possible for serious defects to exist, and yet not be discovered by any smoke test. This may occur when the drains are at any considerable depth, or where the ground above them is impervious. In a few cases the hydraulic test was applied.

Disinfection—Infected houses or rooms have been disinfected thoroughly with sulphur fumes, in the usual way, or with formic aldehyde gas by means of Sharratts apparatus, which

has been found to work well. The objectionable odour, noticeable in rooms for so long after disinfection by sulphur fumes, is avoided by the use of formic aldehyde. At the request of the Medical Attendant, disinfection of rooms and clothing has followed in connection with many cases of phthisis. The steam disinfector 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 4,508 articles of clothing, etc., and 451 beds and mattresses were dealt with. There were 398 rooms disinfected.

Various articles of bedding, clothing, etc., so foul, or in such a bad condition as to render them unfit for further use, were destroyed, and new goods supplied in lieu thereof.

Disinfection of Library Books.—Intimation has for some time been sent to the Chief Librarian of the Free Public Library, notifying him the addresses at which cases of infectious disease have occurred; but hitherto there has been a difficulty in satisfactorily disinfecting books, belonging to the Free Library or other Libraries, found in infected houses. However, during 1900, the Chief Inspector had erected at his offices a special chamber, in which infected books have been since disinfected by formic aldehyde. Perforated metal shelves are fixed across the chamber, on which the books are arranged, so as to allow the gas to circulate freely through and around them. To facilitate disinfection the temperature of the chamber is raised to 52 degrees F.

Dairies, Cowsheds and Milkshops.—In accord with the regulations made by the District Council under the Dairies, Cowsheds, and Milkshops Order, it is required that 800 cubic feet of air space be allowed for each cow. There are now on the Register 19 cowkeepers and 96 dairymen and purveyors of milk, occupying in the aggregate 38 cowsheds and 99 dairies, milkshops, and milkstores. Six cowkeepers and 15 purveyors of milk discontinued business during 1904, and applications were received from 1 cowkeeper and 21 purveyors of milk to be registered.

In all cases of new Registrations, the premises proposed to be utilised have been visited, in order to see that they were suitable for the purpose intended.

During 1904 there were 471 visits paid to cowsheds and 276 visits to milkshops and dairies.

Circulars have been periodically issued to all cowkeepers and purveyors of milk, reminding them of the Regulations respecting lime-washing, lighting, ventilation, cleansing, drainage, water supply. etc. In no case has it been found necessary to resort to legal proceedings to enforce the Regulations made by the Council under the Dairies and Cowsheds Order with respect to these trades.

In one case a milkstore has been closed during the year, owing to the children of the occupier having contracted infectious disease. No person who had in any way been in contact with the patient was allowed to take part in the distribution of milk to the public. The patient was immediately removed from the premises, and the whole of the house was subsequently thoroughly fumigated. The portion used as a milkstore was efficiently cleansed, re-painted and lime-washed prior to being re-opened for business purposes.

The Question of providing Sterilized Milk for infants was carefully considered during 1903, and the Inspector submitted a Special Report with regard to the cost of establishing a Sterilized Milk Depôt in some suitable locality in this District. The charge for collecting the milk from the Liverpool Corporation's Earl Street Depôt, and delivering the same here, were such as practically prohibited the obtaining of a supply from this particular source.

Ultimately it was decided to defer the consideration of this question, and in the meantime to obtain further information as to the cost of establishing and working a Sterilized Milk Depôt.

Unsound Meat, &c.—As usual, a large amount of meat has been seized at the Foreign Animals' Wharf, Wallasey, and Alfred Docks. The entire quantity seized was as follows :—

Beef	7,913	lbs.
Mutton	4,873	,,
Veal	1,042	,,
Offal	34,225	,,
Total seized at Foreign Animals' Wharf and destroyed ...	48,053	,,

The butchers' and fish and poultry shops have been visited once in each week, and the contents thereof examined. 1,500 lbs. of meat etc., have been removed and destroyed in connection with this inspection.

Visits of inspection (to the number of 879) have been paid to private slaughterhouses, and 8,966 lbs. of meat, &c., removed therefrom for the purpose of being destroyed.

The details of the meat, &c., dealt with are as follows :—

Beef	6,255	lbs.
Mutton	219	,,
Veal	174	,,
Pork	1,203	,,
Lamb	604	,,
Offal	511	,,
	8,966	,,

The contents of hawkers' carts and baskets have also been regularly inspected, but no unsound food stuffs have been found therein.

In a number of cases the owners of fish carts have been cautioned as to depositing fish offal on the public highways.

Offensive Trades.—The premises used for knackering and other offensive trades in the neighbourhood of Havelock Street, Seacombe, have been kept under constant supervision during the year. The usual limewashing and cleansing have been carried out in a satisfactory manner.

Canal Boats.—Three Inspectors now devote a portion of their time to inspecting canal boats. Visits are paid at least once a week to the Great Float (north side), and the Wallasey and Alfred Docks and entrances. The number of boats inspected in 1904 was 313. The number of boats inspected in 1903 was 320. The number inspected in 1902 was 231, and in 1901 was 225. The improvement in the general cleanliness of the boats, referred to in recent reports, has been maintained. In 16 instances the boats did not comply with the requirements of the Canal Boats Acts and the regulations made thereunder. In six cases the master of the boat failed to produce a certificate of registration. In seven cases the boat was not properly lettered, marked and numbered. In five cases the cabins required re-painting. In two instances the sleeping-berths were unprotected from dirt and weather. One boat carrying an offensive cargo was found with defective bulkheads. Notices were served on the owners of boats, on board of which infringements of the Acts or regulations were noticed, and the defects specified were remedied, without it being necessary to take legal proceedings.

WILMSLOW

Urban District.

Medical Officer of Health—Dr. T. A. Somerville.
Population at Census, on April 1st, 1901—7,361.
Estimated Population in middle of 1904—7,700.
Area in acres—5,090.
Birth-rate per 1,000 living—21.4.
Death-rate per 1,000 living—16.2.
Death-rate from seven principal Zymotic Diseases—0.9.
Deaths under one year to 1,000 births—145.

This Urban District was formed of part of Fulshaw, part of Bollin Fee, and part of Pownall Fee.

The population of the whole District was 6,344 at the Census in 1891, and 7,361 at the Census in 1901. The increase

in the population during the decennium 1891-1901 was thus 1,017, that is 16 per cent. The estimate of the population made for the middle of the year 1904 assumes that there has been an increase, since the Census, of 339.

During 1904 the number of births registered was 165, and the number of deaths registered (including the deaths of 8 residents registered elsewhere) was 125. Eight of those born were illegitimate. The birth-rate is about 3.4 below the average in the District in 1894-1903, and the death rate is about 1.8 above the average in the District in 1894-1903.

Seven deaths were ascribed to the principal zymotic diseases, viz. : 1 small-pox, 4 whooping-cough, 1 enteric fever, and 1 diarrhœa. There were also 2 deaths from puerperal fever, 7 from phthisis, 9 from other tubercular diseases, 13 from cancer, 9 from bronchitis, 9 from pneumonia, 1 from alcoholism, 3 from premature birth, and 12 from heart diseases.

The death-rate was lowest in July, and highest in February.

Twenty-four of the deaths were of infants under a year old, and 51 were of persons 65 years old and upwards.

Infant Mortality. The infant mortality is fairly high. The Medical Officer of Health has little doubt this is due to the infants being improperly fed. He finds that it is the exception and not the rule for a mother to nurse her child. Infants are fed from bottles. He has frequently seen beer bottles and medicine bottles in use for this purpose. The food is not skilfully prepared, nor are the bottles always clean. One mother actually told the Medical Officer of Health that she considered it vulgar to nourish her child.

Cases of Infectious Disease Notified.—There were 133 cases of infectious disease notified, viz. : 2 small-pox, 14 scarlet fever, 6 enteric fever, 2 puerperal fever, 3 erysipelas, and 106 measles. Eight cases were removed to Hospital, viz. : 1 small-pox, 5 scarlet fever, and 2 enteric fever.

In the Annual Report for 1900 it was stated that measles had been added to the list of notifiable diseases.

Small-pox.—Notification of the first small-pox case was received on April 25th, and on the following day the patient (a woman 26 years old) was removed to Hospital. The inmates of the house where the case occurred were at once vaccinated and isolated. A number of persons in the neighbourhood were also vaccinated.

The second patient was the infant child of the first patient. A few days after the removal of its mother this child died at home. The contents of the house were destroyed, and the pre-

mises thoroughly disinfected. Owing doubtless to the precautions taken the disease did not spread.

The woman had been vaccinated in infancy, but there were only two indistinct marks of this. The eruption was visible a week after parturition. The infant died in a few days with symptoms of small-pox just developing.

Isolation Hospital Accommodation.—Wilmslow is one of the Districts forming the Bucklow Joint Hospital District, and thus has Hospital Accommodation for the isolation and treatment of infectious cases, including cases of small-pox.

Steam Disinfector.—Infected bedding, etc., can be disinfected at the Hospital disinfector by arrangement.

Arrangement with Professor Delepine.—The District Council have made arrangements with Professor Delépine, Victoria University of Manchester, whereby Medical Practitioners can obtain a bacteriological examination of material from doubtful cases of diphtheria, typhoid fever, etc., the Council undertaking to pay the fees.

Water Supply.—The water supplied by the Stockport Corporation Waterworks has, during 1904, been satisfactory both as regards quantity and quality.

Several samples of private water-supplies have been taken, and analysed. In cases where the water has been found unfit for domestic use, notice has been served on owners, and the town's water has been laid on,

Dairies, &c.—Regulation made by the District Council under the Dairies, Cowsheds and Milkshops Order, came in force on January 1st, 1900. Active measures are taken to give effect to these regulations.

Factory and Workshop Act.—Attention has been paid to this Act. The premises coming within the scope of the Act have been inspected, and suggestions for alterations and improvements made by the Medical Officer of Health have been willingly carried out by the owners.

As a whole the condition of these premises has been found to be satisfactory. There are 48 workshops on the register, and 96 inspections have been made. Eight defects were noted, each of which was made the subject of a notice, and all the defects were remedied. There are 3 under-ground bake-houses, which have been granted certificates.

Slaughter-houses have been inspected and found to be in a fairly satisfactory condition. One slaughter-house was pulled down during 1904, and a new one was built.

Wilmslow U. D.

The Medical Officer of Health is still of opinion that a public slaughter-house should be provided.

The occupier of a barn was, during 1904, proceeded against for using it as a slaughter-house, and a conviction was obtained.

Lodging-houses have been inspected and found to be in good order.

Refuse Removal.—In the Annual Report for 1900 it was stated that the District Council had resolved to undertake emptying of ashpits, etc., the contents to be used by farmers on their land. The Medical Officer of Health now reports that this resolution has not been carried out. The ashpits continue to be emptied badly and irregularly, and the result is more or less nuisance which might be avoided.

The District Council ought to make arrangements for this work being regularly and systematically done.

House Accommodation for the working classes is good and sufficient. During the year 1 house was condemned as unfit for human occupation.

Nuisance Abatement.—Nuisances reported or discovered receive attention, and steps are taken to obtain their abatement.

Main-drainage.—The northern and southern portions of the main-drainage scheme are in a good working order. The portion passing through Fulshaw Park was completed in 1902.

WINSFORD.

Urban District.

Medical Officer of Health—Dr. T. W. H. Garstang.
Population at Census on April 1st, 1901—10,382.
Estimated Population in middle of 1904—10,365.
Area in acres—5,780.
Birth-rate per 1,000 living—32.3.
Death-rate per 1,000 living—15.6.
Death-rate from seven principal Zymotic Diseases—1.6.
Deaths under one year to 1,000 births—134.

The population of Winsford Urban District was 10,440 at the Census in 1891, and 10,382 at the Census in 1901. The decrease of the population during the decennium 1891-1901 was thus 58, that is 0.55 per cent.

This Urban District consists of the Parishes of Over and

Wharton. The area and population at the date of the Census are given as follows :—

	Area in Acres.	Population at Census.
Over	4,527	7,063
Wharton (including Gravel Lane)	1,253	3,319

During the decennium, the population of Over increased by 228, and the population of Wharton decreased by 286.

It is estimated that in the middle of the year 1904, the population of Over was 7,125, and the population of Wharton was 3,240.

During 1904, the number of births registered was 335, and the number of deaths registered (excluding 4 not belonging to the District, and including 1 registered elsewhere) was 162. During 1894-1903 the corrected average birth-rate was 33.9, and the corrected average death-rate was 15.4. The birth-rate was therefore 1.6 below the average, and the death-rate was 0.2 above the average.

Illegitimate Infants.—Twenty of those born were illegitimate, that is about 6 per cent. Four of these died in the first year of life, that is 20 per cent. Of the legitimate infants 41 died in the first year of life, that is 13 per cent.

Coroner's Inquests.—Inquests were held in 8 cases. The assigned cause of death, according to the verdicts returned, were as follows :—(In Over) "found drowned in a pond," "injuries from a fall in the street," "run over by a cart," "exhaustion after diarrhœa," "drowned by accidentally falling into the river at night," "suicide by taking prussic acid"; (in Wharton) "shock from burns from clothing catching fire," and "heart disease."

Infant Mortality.—Forty-five of those who died were infants under a year old. The proportion of deaths to each 1,000 births was therefore 134. The proportion in 1894-1903 was also 134. The chief causes of deaths of infants, in 1904, were premature birth (11), convulsions (7), bronchitis (7), pneumonia (6), debility (5), diarrhœa (4), and whooping-cough (3). Many of these deaths were due to causes which ought to have been under control.

Infectious Diseases Notified.—The number of cases of infectious diseases notified, in 1904, was 43, viz. :—20 scarlet fever, 1 diphtheria, 2 enteric fever, and 20 erysipelas. Not one of these cases terminated in death.

Zymotic Mortality.—There were 17 deaths from the principal zymotic diseases, viz. :—6 whooping cough, and 11 diarrhœa.

Winsford U. D.

Scarlet Fever.—Eleven of these cases were in Over, and nine were in Wharton. The total number of cases is little more than half the average. They were spread over the whole year.

Enteric Fever.—The two cases of this disease were not associated. One was in January and the other in July.

Diarrhœa.—Of the eleven deaths ascribed to this disease, one was the death of a woman 77 years old, and seven occurred in months which are not usually associated with true epidemic diarrhœa.

Vaccination.—With the assistance of the Vaccination Officer, the Medical Officer of Health is able to give statistics as regards vaccination for the Over Sub-District of the Northwich Union, of which the town of Winsford forms more than three-fourths. The statistics are for a period of eight years.

YEAR.	Number of Births Registered.	Successfully Vaccinated.	Insusceptible.	Had Small-pox	Dead Unvaccinated.	Postponed on Medical Certificate.	Removed and Traced.	Removed and Lost.	Conscientious Objections.	Unaccounted for.
1896	472	422	1	—	41	6	—	2	—	—
1897	450	398	—	—	49	2	—	—	—	1
1898	428	379	—	—	43	2	1	—	2	1
1899	421	385	—	—	32	1	2	—	1	—
1900	428	374	—	—	37	13	1	1	2	—
1901	393	361	—	—	22	7	—	1	2	—
1902	404	374	1	—	24	3	—	—	2	—
Total in 7 years	2996	2693	2	—	248	34	4	4	9	2
1903	403	350	—	—	42	4	2	—	5	—

It thus appears that in 1903 there were 350 infants successfully vaccinated out of 361 surviving, that is 96.9 per cent. In the seven years, 1896-1902, about 98 per cent. of the surviving infants were successfully vaccinated.

Measles.—In 1904 as in 1903 there were no deaths due to measles. This is the more remarkable as there has been at least one serious epidemic. The disease was very prevalent duriug 1094 in surrounding parts of the Rural District, but it was not until November 16th, that the first case was heard of, at Meadow Bank. This village is on the Banks of the river, which is the boundary, immediately opposite to Moulton, in the Rural District, where measles was prevalent. There is a good deal of inter-communication between the two places, particularly by girls from Moulton coming over to work in the Salt Works at Meadow Bank.

The Medical Officer of Health visited the village and the works the same day, and took all possible precautions, but was "just too late" (as so often happens with measles), and within a very few days a large number of cases appeared. Throughout December Mr. W. Blagg acted as Special Inspector; and reported nearly 200 cases. The schools were closed, and all infected families were isolated in their own respective premises, as far as could be persuasively enforced by the Inspector who visited every house every day, and many twice a day. Owing to this action and the absence of exposure to chill (through the children being kept indoors), the epidemic was over by about the end of the year without the loss of a single life, and except for half a dozen scattered cases, did not spread in Winsford beyond Meadow Bank.

Whooping-cough was the registered cause of 6 deaths, 3 being in Over and 3 in Wharton. All those who died were under 5 years old. It appears as if an epidemic had passed slowly from Wharton to Over.

The Infants' School in High Street (Over) reported 60 children absent (including contacts), besides 8 due to chicken-pox, on May 10th; and the school was closed for a time. This is a disease which it is almost impossible to control, as many parents have a mistaken idea of the curative effect of "fresh air"; and deliberately send their children out of doors whilst in an infectious condition, and so spread the disease.

Phthisis.—Only 4 deaths were recorded—about 0.4 per 1000 living. This is much below the average in the District. The ages of those who died were respectively 25 years, 28 years, 28 years and 42 years.

Notification of Phthisis.—Four cases were notified in 1904. There have been 30 cases notified voluntarily in 4 years, of which not more than 4 cases survive. In the same period 27 deaths from phthisis occurred. Thus a fair proportion of existing cases appear to have been notified.

Other Tubercular Diseases.—There were two deaths from tubercular meningitis. One of those who died was five months old, the other eight years old.

Cancer.—There were five deaths due to cancer—all of them in Over. Two of those who died were men, three were women. The ages of these persons were respectively, 46, 53, 60, 63 and 72 years. The organs affected were liver (2), lung, mouth, and uteras.

Alcoholism was the cause of two deaths, viz.:—Of a woman aged 47, and a woman aged 59.

School Closure.—The High Street Infant School was closed on account of whooping-cough, and Meadow Bank and Whitegate Schools on account of measles. These schools were closed voluntarily by the managers.

Isolation Hospital Accommodation.—The small wooden hospital at Rilshaw Lane was used for the isolation of five cases of scarlet fever, viz. :—Two from Over and three from Wharton.

In the absence of serious epidemics, the Hospital has been equal to requirements.

As was noted in the last Annual Report, a Joint Hospital Board has been formed by the County Council for Northwich (Urban and Rural), Middlewich and Winsford (Urban) Districts. In due course efficient Isolation Hospital Accommodation for four Districts will be provided.

Steam Disinfector Needed.—There is at present no apparatus provided for disinfecting by steam. The subject might well engage the attention of the District Council.

Disinfection of Premises.—The Inspector is provided with an equifex sprayer.

Systematic Inspection has been carried out on the usual lines. Special visits to Winsford have always been made when required. The Sanitary Inspector, Mr. Ralph Oakes, gives al his time to his work as Inspector, having no other employment. Systematic inspections are made from time to time throughout the year. Schools, common lodging-houses, bake-houses, slaughter-houses, cow-sheds, sewage-works, factories and workshops are all visited indiscriminately, as they happen to be met with on these journeys of systematic inspection, which are quite independent of numerous journeys made for specific investigations.

Dairies, Milkshops and Cowsheds.—Dairies and milk-shops (12) have been inspected every month, and found satisfactory. The majority of cowsheds (about 60) have been inspected quarterly, and no special complaints made. The usual notices about lime-washing were sent to all cow-keepers in April and September.

Factories and Workshops.—Only one clothing factory is in work at present. Two fustian factories out of four are idle. Not more than one-half of the salt-works are in work. There is thus an entire absence of pressure ; and there is really very little scope for the application of the Act. All salt-works and factories have been inspected once by the Medical Officer of Health and four times by Mr. Oakes. Small improvements have been carried

out, where previously suggested, and there is now a generally satisfactory condition. Workshops have been inspected according to their importance. There are few of any great importance, except bakehouses and such-like, and these are frequently inspected. The Council has issued two licences to underground bakehouses. The Public Health Acts Amendment Act has been adopted; but no standard of sanitary accommodation has been laid down.

Common Lodging-houses.—There are three, and each has been inspected six times, and found satisfactory.

Water-supply.—This is exceptionally good, both in quantity and quality.

Abatement of Nuisances.—Formal notices are issued and enforced in 32 cases, but most of the nuisances, complained of or discovered, are promptly abated at the Inspector's request, without formal notices.

Over-crowding.—In consequence of suspicion of the existence of overcrowding, the Medical Officer of Health, personally visited, with the Inspector, nearly all the houses in the town which had not more than two bed-rooms. Only two cases were discovered; and these have been remedied.

Slaughter-houses were inspected monthly. Three lime-washing notices were served and attended to.

Refuse Removal.—Ashpits are emptied monthly, privy-middens three times a year. Deposits of refuse and manure are cleared away every month, to a place provided for the purpose by the District Council.

Peat Pails.—During 1900 an attempt was made to introduce the "peat-pail system" to Winsford. An explanatory circular was drawn up, describing the system, and distributed to property owners. Twenty-eight peat-pails were installed in 1900, 73 in 1901, 41 in 1902, 58 in 1903, and 68 in 1904. These pails are much appreciated. Each pail, on being put in position in the closet, is charged with ground peat, accidulated, so that effluvium nuisances are prevented. The sanitary condition of the District would be improved by the general adoption of this system of refuse removal for all cottage property.

Schools.—All the schools in the District now have either water-closets or peat-pails in place of privies. Each school has been disinfected twice during the year.

Sewage Treatment.—The filtration beds continue to work efficiently and inexpensively. All the beds were raised during 1902, and one additional bed was made.

Canal Boats.—The number of boats inspected in 1904 was 10. All were found in good sanitary condition. As mentioned in some previous Reports, few boats trade to Winsford which are registered under the Canal Boats Act. The boats coming to Winsford are principally larger, and the cabins are not used as residences.

YEARDSLEY-CUM-WHALEY

Urban District.

Medical Officer of Health—Dr. H. Allan.
Population at Census, on April 1st, 1901—1,487.
Estimated population in middle of 1904—1,530.
Area in acres—1,323.
Birth-rate per 1,000 living—21.5.
Death-rate per 1,000 living—11.1.
Death-rate from seven principal Zymotic Diseases—0.
Deaths under one year to 1,000 births—60.

The population of this Urban District was 1,235 at the Census in 1891, and 1,487 at the Census in 1901. The increase of the population during the decennium 1891-1901 was this 252, that is 20.4 per cent. The estimate of the population made for the middle of 1904 assumes that the population has been still increasing, but not at the same rate.

The District includes Bridgemont and Stoneheads.

In 1904 the number of births registered was 33, and the number of deaths registered was 17. The birth-rate is about 5.2 below the average in the District during 1894-1903, and the death-rate is about 2.2 below the average in the District during 1894-1903.

The causes of death, certified by medical men, were as follows:—2 bronchitis, 2 pneumonia, 1 phthisis, 1 pericarditis, 1 abscess, 3 convulsions, 1 apoplexy, 2 disease of liver, 1 gastric ulcer, and 1 senile decay. The causes of 2 deaths were the subject of inquests.

Cases of Infectious Diseases Notified.—Only 3 cases were notified, viz.:—2 scarlet fever, and 1 erysipelas. These were investigated.

Measles.—During the summer cases were prevalent, chiefly in Furness Vale.

Precautions taken as to a Small-pox Contact.—At the end of August one or two cases of small-pox occurred on the Derbyshire side of Whaley Bridge, and it was found that a

daughter of one of the sufferers, who resides at Yeardsley-cum-Whaley, had been visiting the infected house and passing to and fro. Further communication was at once stopped, and the house in this District where the "contact" lived was properly disinfected. All the members of the family, and neighbours who were willing, were vaccinated.

Water Supply.—In the Report of 1898, the Medical Officer of Health stated that it was certainly most desirable that a proper water-supply should be available, and that no time should be lost in procuring it. During 1899, the District Council entered into a provisional agreement with Colonel Cotton-Jodrell for the acquisition of his water rights at Stoneheads and Diglee. The District Council also made application to the Local Government Board, for sanction to borrow £7,000, to carry out an efficient scheme for furnishing the District with water. An inquiry was held by an Inspector of the Local Government Board in September, 1900, and in the summer of 1901 the Board sanctioned the borrowing of the sum named. Contracts were forthwith let and the necessary work was proceeded with. During 1902 the public water-supply was completed, and a large number of houses have this water. However, there are still several houses without good water. The whole District should be supplied at an early date.

Systematic Inspection of the District is made from time to time by the Medical Officer of Health and Inspector. Thus defects are discovered, and improvements are made.

Nuisance Abatement.—The most common cause of nuisances is the insanitary state of the closets and ashpits requiring to be emptied, defective house-drains, untrapped drains, defective rain-pipes and gutters, windows that will not open, and animals so kept as to be a nuisance. As a rule the defects pointed out have been remedied without the Authority being put to the trouble of serving formal notices. In 1904 the drainage of two separate properties in Furnace Vale required amendment. In one case a new drain of (6-in.) socket-pipes was laid, and in the other case the drain was efficiently repaired At Whaley Bridge also the drainage of two properties was found defective. In each case a new drain of (6-in) socket-pipes was laid.

Refuse Removal.—The emptying of closets and ashpits seems to have received much better attention than in former years. It is pointed out that the District Council might with advantage consider the advisability of making arrangements for the systematic emptying of privies and ashpits. If the District Council were to get this work done regularly, many nuisances would be prevented.

Sewerage System Needed.—The Medical Officer of Health has from time to time reminded the District Council of the need of a proper system of sewerage and sewage disposal.

Yeardsley-cum-Whaley U. D.

New Houses.—Ten new houses were erected during 1904.

Improvements.—The re-paving, flagging, and draining of Market Street has improved the sanitary condition of Whaley Bridge. The erection of a new iron bridge, to replace the old stone one, over the river Goyt, has made traffic much safer.

Factory and Workshop Act.—The Medical Officer of Health has visited and inspected the factories and workshops (including bakehouses) in the District. He found them generally satisfactory as regards cleanliness, light, ventilation and sanitary arrangements. The provisions made for escape in case of fire are ample.

At two workshops only was it found that the sanitary conditions required improving.

Canal Boats.—Nine canal boats were inspected during 1904, and all were found in good order.

BUCKLOW

Rural District.

Medical Officer of Health—Dr. T. W. H. Garstang.
Population at Census, on April 1st, 1901—19,890.
Estimated Population in middle of 1904—20,700.
Area in acres—57,651.
Birth-rate per 1,000 living—21.9.
Death-rate per 1,000 living—11.6.
Death-rate from seven principal Zymotic Diseases—1.0.
Deaths under one year to 1,000 births – 86.

The population of this Rural District was 19,890 at the Census in 1901, and the population of the corresponding area was 17,793 at the Census in 1891. The increase of the population during the decennium 1891-1901 was thus 2,097. That is 11.7 per cent. The estimate of the population made for the middle of 1903 assumes that the population since the date of the Census continued to increase at about the same rate.

The number of births registered in the District in 1904 was 455, and the number of deaths registered in the District in 1904 was 242. From the total of registered deaths, 19 deaths of non-residents have been excluded, and to the total 19 deaths of residents registered elsewhere have been added; the number of deaths belonging to the district is, therefore, the same as the number of deaths registered in the district. The birth-rate is 0.9 below the average in 1894-1903, and the death-rate is 1.9 below the average in 1894-1903.

For registration purposes, the district has long been divided into four sub-districts. These are as follows :—

1. Altrincham, having an area of 11,854 acres, includes Baguley, Timperley, Ringway, Ashley, and Dunham Massey.
2. Lymm, having an area of 14,498 acres, includes Carrington, Partington, Bollington, Warburton, High Legh, Agden, Millington, and Aston-by-Budworth.
3. Knutsford, having an area of 20,811 acres, includes Tabley (Superior and Inferior), Mere, Rostherne, Tatton, Marthall, Peover, (Superior and Inferior), Ollerton, Toft, Bexton, Plumbley, and Pickmere.
4. Wilmslow, having an area of 10,488 acres, includes Styal, Mobberley, Northenden, and Northern Etchells.

A fifth sub-district has quite recently been made. The Township of Baguley (taken from Altrincham sub district), Carrington (taken from Lymm sub-district), and Northenden (taken from Wilmslow sub-district) make the new Sale sub-district as far as the Rural District is concerned.

In 1904 the birth-rates of these 5 sub-districts were respectively 22.4, 23.6, 20.4, 17.4 and 25.8 ; and the death-rates of these 5 sub-districts were respectively 12.1, 11.6, 10.7, 10.3 and 13.2.

Infant Mortality.—The number of those who died before completing their first year was 39. The causes of death registered, and the sub-districts in which these deaths occurred, are as follows :—

RURAL PART OF SUB-DISTRICT OF	Prematurity, Debility, and Malformation.	Convulsions.	Zymotic Diseases.	Bronchitis and Pneumonia, &c.	Miscellaneous.	Total.
Altrincham ...	6	4	2	3	2	17
Lymm ...	0	0	1	1	0	2
Knutsford ...	0	0	0	1	1	2
Wilmslow ...	2	1	2	0	0	5
Sale ...	3	1	5	3	1	13
Total ...	11	6	10	8	4	39

This number is equal to 86 per 1,000 births. In the ten years, 1894-1903, the deaths of infants were equal to 116 per 1,000 births.

Illegitimate Children.—Fourteen of those born in 1904 were illegitimate children ; that is 3 per cent. Of these 5 died ;

that is 35.7 per cent. As there were 34 deaths among the 441 legitimate infants, only 7.7 per cent. of these died.

Coroner's Inquests.—Eighteen deaths were the subject of official inquiries, but 4 of these were of persons not belonging to the District. Thus inquests were held on 5.9 per cent. of the deaths belonging to the District. Particulars of the 14 inquests are given in tabular form.

Date	Sex	Age	Where Held	Where Belonged to	Verdict
Feb. 17	F	33	Altrincham	Timperley	Fractured skull, fall from train.
Mar. 15	F	31	Ashley	Ashley	Found dead in bed. Epileptic fit.
Mar. 29	M	1 min.	Dunham Massey	Dunham Massey	Asphyxia.
Apr. 23	M	45	Altrincham	Timperley	Suicide ; cut throat.
June 23	F	16	Altrincham	Timperley	Shock from burns.
Oct. 25	M	72	Timperley	Timperley	Cerebral hæmorrhage.
Oct. 30	F	2	Dunham Massey	Dunham Massey	Accidentally Scalded.
Dec. 19	F	59	Timperley	Timperley	Heart disease.
Apr. 21	M	35	Millington	Millington	Fractured skull, from kick by horse.
July 11	M	60	Agden	Agden	Suicide by drowning in canal, whilst temporarily insane.
Nov. 21	M	33	High Legh	High Legh	Accidentally burnt in a hay loft.
Sep. 28	M	40	Knutsford	Ollerton	Shock from burns received at a farm fire.
Mar. 20	M	36	Northen Etchells	Northen Etchells	Tetanus following accidental injury to head.
June 8	C3	31	Stockport	Northenden	Run over by goods train.

No Uncertified Death was registered in the District in 1904. Only one was registered in 1903.

Cases of Infectious Disease Notified.—The number of cases of infectious disease notified in 1904 was 117, viz. :—27 diphtheria, 79 scarlet fever, two enteric fever, three puerperal fever, and six erysipelas. The number of notifications received in 1890-1903 averaged about 102 a year.

Zymotic Mortality.—The number of deaths from the seven principal zymotic diseases in 1904 was 21, viz. :—two diphtheria, one measles, seven whooping-cough, two scarlet fever, one enteric fever, and eight diarrhœa. The zymotic death-rate was thus 1.0 per 1,000 living, which is equal to the annual average in the District.

Prevention of Infectious Disease.—The usual precautions are taken in all known cases of infectious disease to prevent its spread, as detailed in previous Annual Reports.

Vaccination.—As no cases of small-pox occurred, the next matter to notice is vaccination. The Medical Officer of Health in all previous Annual Reports, except the two last, abstained from giving any figures relating to vaccination, on the ground that it was impossible to separate those belonging to the Rural District from the totals published as belonging to the Union. This year he reproduces the figures for the Union for a period of seven years, 1896-1902, inclusive. This records the vaccination for the Rural District of Bucklow and the Urban Districts of Altrincham, Bowdon, Hale, Sale, Ashton-upon-Mersey, Lymm, Knutsford, and Wilmslow. The tabular statement is given as follows:—

	Births.	Successfully Vaccinated.	Insusceptible.	Had Small-pox.	Died Unvaccinated.	Postponed on Certificate.	Removed and Traced.	Lost.	Conscientious Objections.
1896, 1st half	888	780	3	—	54	40	3	7	—
,, 2nd ,,	929	780	4	—	85	41	5	8	—
1897, 1st ,,	892	752	7	—	83	31	5	8	—
,, 2nd ,,	902	773	5	—	71	38	3	8	—
1898, 1st ,,	962	802	3	—	88	41	2	12	7
,, 2nd ,,	974	775	12	—	107	51	4	10	9
1899, 1st ,,	939	721	28	—	109	42	8	13	17
,, 2nd ,,	982	785	12	—	112	34	10	12	15
1900, 1st ,,	922	784	8	—	94	11	3	12	8
,, 2nd ,,	971	818	7	—	96	20	4	13	13
1901, 1st ,,	958	818	14	—	76	19	2	11	14
,, 2nd ,,	925	807	5	—	81	16	3	7	5
1902, 1st ,,	965	866	12	—	54	20	1	8	4
,, 2nd ,,	957	846	8	—	59	21	7	8	5
1896 to 1902 inclusive	13131	11107	128	—	1169	425	60	137	97
1903, 1st half	1037	935	5	—	67	12	7	2	8
,, 2nd ,,	988	858	7	—	85	21	5	7	4
1903	2025	1793	12	—	152	33	12	9	12

In 1903, out of 1,873 surviving children, 1,793 are known to have been vaccinated; or 95.7 per cent.; whilst, if cases medically postponed, and those removed and traced, be assumed to have been ultimately vaccinated in the same proportion, among the survivors (an assumption to which there can be no logical objection), the percentage vaccinated of the whole is nearly 98.0 per cent. The corresponding percentages for the 8 years are 93.2 and 97.0.

Measles.—This disease was somewhat widely prevalent in the later months of the year; and many schools were closed for short periods; among them being Nether Tabley, Pickmere, Over Peover, and Ollerton. Only one death occurred, that of a boy, 2

years old, belonging to Pickmere. No attempt was made to control the epidemic, except by closing the schools.

Scarlet Fever.—Though there were (the apparently large number of) 79 cases, yet they were so distributed in time and in locality that there was never anything worth calling an epidemic, except in Mobberley in May, when 10 cases occurred and caused momentary alarm; and in High Legh in September. Thus Plumbley had 1 case, in May; Ashley 1 in September; Baguley 1 in October; Carrington 2 in May; Partington 1 in May and 1 in September; Ringway 1 in July and 1 in November; Northen Etchells 2 in July; Aston 3 in April and 1 in August; Styal 1 in January, 2 in July, 1 in August, and 1 in November; Northenden 1 in January, 2 in February, 1 in July, and 2 in October; High Legh 2 in January, 5 in September, and 1 in October; and Mobberley 2 in January, and 10 in May. Including the two last-named small outbreaks, it may thus be said that 46 of the cases were scattered. The remainder occurred in Timperley (12) and in Dunham Massey (21). Eight of the Timperley cases, and 10 of the Dunham Massey cases were in the portion of the Townships which lies next the boundary of Altrincham Urban District: the others were scattered over a wide area. The cases were distributed through-out the year. Fifty were treated in Hospital, of which 1 died, and 29 remained at home, of which 1 died.

Value of Hospital Treatment.—Certain Medical Officers of Health are now throwing doubt upon the value of removal to hospital as a means of checking an epidemic. Without any intention of joining the controversy, and without any wish to criticise opinions based upon results observed in large towns, the Medical Officer of Health of Bucklow Rural District feels it his duty to record, without hesitation, his firm opinion that in the District prompt removal to hospital is the only effectual means whereby he can record year after year, "no epidemic," in spite of the constant occurrence of individual cases, scattered over a wide area, and representing the introduction of infection so many times, and from so many independent sources.

Diphtheria.—Thirteen cases were removed to hospital, of which one died, and 14 were treated at home, of which 1 died. Diphtheria appears to be becoming more prevalent. This seems likely to be due to increase of infectiveness, for personal contact was probably much more common ten years ago than now. The use of antitoxin is now general, and largely accounts for the diminution in the number of deaths. In 1893 and 1895 one-third of the cases were fatal, which would have meant 9 deaths in 1904, instead of 2. Only 7 Townships were involved, whereof 4 had only 1 case each, viz.: Peover Superior, March; Pickmere, April; Northen Etchells and Ringway, August. High Legh had

2 cases in June and 2 in September; and (as with scarlet fever) Dunham Massey and Timperley provide the rest. Timperley had 3 cases in March, and 1 each in April, June, August, and October; Dunham had 1 in February, 5 in March, 5 in April, and 1 in September. Of these 19 cases all but 2 occurred in the parts of the townships adjacent to Altrincham.

Diagnosis of Diphtheria.—Bacteriological examination of morbid products from the patient is available in all cases.

Diphtheria Antitoxin.—In accordance with a suggestion from the County Council, a supply of antitoxin is now kept at the Inspector's Office for the convenience of practitioners who do not store it. It will be issued gratuitously in suitable cases; in others at cost price.

Whooping-cough.—The 7 deaths from this disease occurred in 7 different townships and in 7 different months. The inference would seem to be that a mild epidemic was travelling across the District during the year.

Enteric Fever.—Two cases notified, and 1 death. The first case occurred in Warburton in June; the fatal case in Baguley in September. Neither was removed to Hospital.

Diarrhœa.—Eight deaths, 7 being infants. Northenden had 4 deaths in August and September; Dunham 2 in September; Timperley 1 in August; and Mobberley 1 in October.

Influenza caused 7 deaths. Two occurred at Timperley in February and March, 1 at Mobberley in March, 2 at Ashley in April, 1 at High Legh in October, and 1 at Styal in November.

Puerperal Fever.—There were 3 cases. The only one which proved fatal was at Mobberley.

Erysipelas.—There were 6 cases. The only one which proved fatal was at Mobberley.

Phthisis caused the death of 17 persons, *i.e.* equal to 0.82 per 1,000 living. The number of deaths in the four years 1900-1903 were respectively 10, 15, 22 and 18.

Other Tubercular Diseases.—There were 9 deaths due to these. Three were certified "meningitis," 3 "peritonitis," 2 tubercular disease of glands, and 1 joint disease.

Cancer was the cause of 12 deaths, a number equal to 0.57 per 1,000 living. Five of these deaths were at Dunham Massey, 2 at Warburton, and there was 1 death in each of the following townships, viz.:—Timperley, Partington, Carrington, Peover

Superior, and Tabley Superior. Ten of those who died were males, 2 females. The age at death ranged from 12 years to 74 years.

Alcoholism caused the death of 2 men—a man 68 years old at Northenden, and a man 45 years old at Rostherne.

Isolation Hospital Accommodation.—In the Annual Report for 1902 it was reported that the Sanatorium at Baguley was opened in December of that year Thirty-five beds in this Isolation Hospital are allotted to the Bucklow Joint Hospital Board, which includes the Bucklow Rural, and Alderley Edge, Ashton-on-Mersey, Hale, Knutsford, Sale, and Wilmslow Urban Districts. The Joint Hospital Board has also provided a Small-pox Isolation Hospital at Newhall Green. During 1904 there were 4 cases of scarlet fever in the Cottage Homes at Styal, and these were dealt with by the Chorlton Union. Seven cases of small-pox were received into the Newhall Green Hospital, but none of them belonged to the Rural District. All other cases removed were sent to the Baguley Sanatorium; and include 46 cases of scarlet fever, and 13 of diphtheria. Sixty-three cases, out of 117 notified, is 54 per cent. No attempt to remove cases was made before 1898. The full figures are :—

Year.	Notifications.	Removals.	Percentage.
1898	46	5	10
1899	106	16	15
1900	96	42	43
1901	158	50	31
1902	102	27	27
1903	97	57	59
1904	117	63	54

Two deaths occurred among the 63 hospital cases, or just over 3 per cent.; and 5 deaths among 54 cases not removed, or just over 9 per cent.

Anthrax among Animals.—Four cases were reported, respectively in Northen Etchells, Bexton, Mere, and Carrington. All the animals affected were cows. The carcase in each case was cremated and the premises disinfected by the County Police.

Disinfection.—No apparatus is yet provided for disinfecting bedding, etc., by steam. For the disinfection of premises the formic-sulphugators of the Sanitas Company have been used. The Inspector speaks highly of them. It is claimed that they generate formic aldehyde, sulphurous acid gas and steam They are portable, and lighted like a sulphur candle. The Authority have an apparatus for spraying with perchloride of mercury solution, but it is too heavy to carry about for any distance. Householders are recommended to use chlorinated lime. However, the District Council have no officer or servant to undertake the duty of disin-

fection, and carry it out thoroughly. The work falls upon the already over-burdened shoulders of the Inspector of Nuisances; and he is naturally compelled to adopt a method which is easy and speedy in application, without too much regard to its claim to efficiency.

Systematic Inspection.—The Medical Officer of Health has done his best to comply with the official regulations, having visited every corner of the District during the year, and the majority of places many times. However, the results have not paid him for the time spent and the trouble taken. These visits have as a rule been paid in company with either Mr. McKenzie or Mr. Metcalfe. Visits have also been made every day in various townships by these two officers in the performance of their respective duties.

School-closing.—In only a few instances has school-closure been required on account of local epidemics. In each case the school has been closed voluntarily by the Managers on the certificate of the local Medical Practitioner. This satisfies the Education Department. The Medical Officer of Health is thus relieved personally from the necessity of taking any further notice of the matter, and from making Special Reports to the Local Government Board and the County Council, under Art. 18 (15) of the Order of March 23rd, 1891. The Medical Officer of Health still maintains his previously expressed opinion that, from a public health point of view, this is a very unsatisfactory method of procedure, and from an educational point of view even more unsatisfactory.

Sewage Disposal.—There are three Sewage Works belonging to the District, viz., at Dunham Massey, Timperley and Northenden. They consist of tanks, filters and land irrigation.

Dunham Massey.—The existing outfall-works are small and imperfect, and drain only a very small area, in immediate contact with Altrincham and Bowdon. Large houses of the best class, on Dunham Hill, drain into three separate systems of sewers under three independent authorities, according to the run of the ancient Township boundaries. The Bucklow District outfall will be discontinued on the completion of the larger new scheme.

The new works are even yet not in operation. In May last defective work was found, which was attributed to the contractors; and a dispute arose which led to the stopping of all work. The contractors are now taking legal proceedings against the Council. A very small length of pipe-sewer remains to be laid; but of course until it is done it is impossible to connect any property to the new works, as the severance is in the line of the outfall sewer.

The old outfall was inspected for the Mersey and Irwell Joint Committee on May 4th, and the effluent reported "fair."

Timperley.—This is an old outfall. The main sewer is a long one, with a faulty gradient, liable to silting. The Timperley outfall sewer, from Dark Lane outfall to the Railway Station, as noted in the Report for 1903, was cleaned out at a cost of about £200. The Mersey and Irwell Joint Committee report that samples of effluent taken in February, April and May were "good," and that samples taken in September and November were "fair." As a quantity of surface water finds access to the sewer, a arge volume of dilute sewage has to be dealt with.

Northenden.—This is a comparatively new outfall and seems to be fairly efficient. A scheme is under consideration for its enlargement. The Mersey and Irwell Joint Committee reported that in January, March and April the effluent was "good," and that in June, September and November it was "fair."

Partington.—It is proposed to make a small filter for the sewage of Lock Lane and neighbourhood, but it has not yet been begun.

The Factory and Workshop Act. — The District Council has, by formal resolution, appointed Mr. McKenzie to be Inspector under this Act, and made the Medical Officer of Health responsible for its administration, in each case giving suitable remuneration for the work done. On March 7th, 1902, inspections were commenced systematically, along with the compilation of a register. The results of the inspections made in 1902 were given in the Report for that year. During 1903 there were 190 inspections made by the Inspector, often in company with the Medical Officer of Health. At the close of the year 1903 the Register contained particulars of 287 premises, comprising 28 factories, 127 workshops, and 132 domestic workplaces.

At the close of the year 1904 the Register contained 30 factories, 132 workshops, 130 domestic workplaces, and 2 outworkers. The number of inspections made during the year amounted to 340. There were 74 notices served, by authority of the Council, for defects, and of these 69 notices have been complied with. In 27 instances failure to affix the abstract of the Act has been notified to H.M. Inspector. There are no underground bakehouses.

In all, the numbers of employees at the factories, workshops, and workplaces were as follows:—410 men, 211 women, and 26 apprentices.

Public Health Acts Amendment Act, 1890.—This Act has been adopted.

The Surveyor (Mr. McKenzie) and the Inspector (Mr. Metcalfe) furnish information as to matters coming under their supervision.

Building Plans.—During 1904 there were 152 sets of plans submitted for approval. Of these 109 were approved, and

43 were referred back for amendment. The plans were for 163 dwelling-houses, 18 farm buildings, 6 works, 7 sanitary conveniences, 2 new roads, 3 sewers, 2 generating houses, 2 churches, 1 school, 5 shops, 4 stables, 3 billiard rooms, a motor house, a smithy, and alterations and additions to 24 existing buildings.

All house-drains laid are properly water-tested before being passed.

Building Bye-laws.—A Committee is engaged in revising the Building Bye-laws.

The Council's proposed amendments have been drafted and submitted to the Local Government Board, who have very favourably considered the suggestions made by the Council, and have asked for further suggestions in removing any oppressive clauses which the Council have difficulty in carrying into effect. It would appear the Council's District will have to be divided into Urban and Rural Areas, which the Local Government Board are quite prepared to countenance, with a separate set of Bye-laws for each.

Public Street Lighting at Timperley and Northenden.—The public roads of these Townships have been lighted with gas lamps under loans sanctioned by the Local Government Board.

Dairies and Cowsheds.—The work of systematic inspection was continued in 1904 as in recent years. Every dairy, cowshed, or milk shop visited has been carefully examined. When defects have been noticed they have been reported to the Council and notices have been served to obtain needful improvements. Many special visits have been made to meet and advise persons responsible for improvements. In a few instances cowsheds and cows have been found dirty, and steps have been taken to ensure greater cleanliness in the future. A few cottagers, who are milk sellers in the summer only, have not been registered. This matter is having attention.

Formal notices were served during the year on 88 persons, in reference to defective drainage, light, ventilation, &c. Limewashing circulars were sent out in May and October to all cowkeepers and dairy-men. On the whole there has been satisfactory progress during the year.

Tuberculous Cows.—Two cases were notified by the Medical Officer of Health of Manchester; one at Aston and one at Plumbley. Both animals were slaughtered; the former was a bad case, and the carcase was destroyed; the latter was a slighter case, and the meat was in part disposed of in the Manchester Market, after inspection.

Food Inspection.—Many examinations of meat, fish, fruit and vegetables have been made. All was found of good quality. No complaints were received.

Slaughter-houses.—There are 8 slaughter-houses in the District. They are all frequently inspected, and no nuisance has been noticed or complained of. In two instances verbal notices had to be given to cleanse and limewash.

House-to-House Inspection.—This work, which was commenced in 1902 and continued in 1903, was carried on in 1904. During the latter year 83 houses were inspected; many insanitary conditions were discovered and reported, and steps taken to amend them. The tenants recognise the benefit of this systematic inspection and give assistance.

Over-crowding.—In two instances during the year, over-crowding has had to be dealt with.

Nuisance Abatement has had full attention. There was 137 houses inspected and 3 schools. There were 105 houses found to be in foul condition and 119 had structural defects. At 89 premises drains were tested, at 17 premises drains were amended, and at 43 premises drains were relaid. Only once was a nuisance complained of, and this was dealt with.

Rivers Pollution Prevention Act.—Ten notices were served under this Act, which were complied with, and steps taken to prevent a recurrence of the pollution.

Refuse Removal.—This has been done, by contract, as in previous years at Northenden. The monthly returns show that there were 1558 emptyings of ashpits and 171 emptyings of pails. In all 575 loads were removed. As regards Dunham Massey and Timperley, the contracts were terminated at the end of June, and a scavenging department was created. In the first half-year the contractors removed 548 loads from Dunham Massey, from 322 ashpits and 6 pails; and 448 loads from Timperley, from 585 ashpits and 413 pails. Complaints had been numerous. Two horses were purchased by the Council, also carts and implements, three men were engaged, and work commenced on July 12th. A fourth man was found necessary after a few weeks' experience. The work done to December 31st is as follows:—

	Dunham.	Timperley.	Total.
Houses	851	1542	2393
Ashpits emptied	410	697	1107
Pails ,, ...	54	675	729
Dustbins ,, ...	19	201	220
Loads (ashes)	268	320	588
,, (manure)	75	186	261

The manure (from privies) was sold to farmers and market-gardeners.

Canal Boats.—Mr. McKenzie, District Surveyor, reports that during 1904 there were 58 canal boats inspected. These boats were registered as dwellings for 198 persons, and on inpection were found occupied by 113 persons, viz.: 81 men, 23 women, and 4 children. It appears that 2 of the children were not attending school, and this was reported to the Runcorn School Authority. Seven formal notices were served for infringements of the Canal Boats Acts or Regulations made thereunder. The infringements were as follows:—

3 boats were without certificates.
3 boats in which the cabins were dirty.
2 boats in which the cabins required painting.
1 boat in which the cabin floor was defective.
2 boats in which ventilation was defective.
1 boat in which an offensive cargo was carried there being no proper bulkhead.

All the notices served were complied with. No legal proceedings were necessary. No case of infectious disease appears to have occurred on a canal boat.

CHESTER

Rural District.

Medical Officer of Health—Dr. G. A. Kenyon.
Population at Census, on April 1st, 1901—10,989
Estimated population in middle of 1904—11,155.
Area in acres—35,517.
Birth-rate per 1,000 living—20.7.
Death-rate per 1,000 living—11.5.
Death-rate from seven principal Zymotic Diseases—0.99.
Deaths under one year to 1,000 births—95.

The population of Chester Rural District was 10,989 at the Census in 1901, and 10,824 in the corresponding area at the Census in 1891. The increase in the population during the decennium 1891-1901 was thus 165; that is 1.5 per cent. The increase in the population of this Rural District between the Census in 1891 and the Census in 1901 would have been much greater but for the exodus of 1,137 persons enumerated at Elton, Ince, Stanlow and Great Stanney, who at the time of the Census in 1891 were engaged in the construction of the Manchester Ship Canal.

The Census population as above is inclusive of 1,112 persons enumerated in the County Asylum, situated in the Parish of Upton-by-Chester, and 32 persons enumerated in Tarvin Union Workhouse, situated in the Parish of Great Boughton. Excluding the populations of these two Institutions, the population of the Rural District at the Census in 1901 was 9,845. It is estimated

that in the middle of the year 1904 this population was 10,100. There has been much building going on since the Census, and this estimate seems to be warranted. On it the birth-rate and death-rate have been calculated.

This Rural District has for registration purposes been divided into sub-districts, as follows :—

1. Chester Castle, having an area of 10,960 acres, 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 24,557 acres, includes Blacon-cum-Crabhall, Bache, Newton-by-Chester, Wervin, Croughton, Moston, Upton-by-Chester, Lea-by-Backford, Mollington, Backford, Chorlton-by-Backford, Caughall, Hoole (part of), Mickle Trafford, Bridge Trafford, Picton, Thorton-le-Moors, Wimbolds Trafford, Dunham-on-the-Hill, Hapsford, Elton, Ince, Stanlow, Great Stanney, Little Stanney, Stoke, Capenhurst, Shotwick, Woodbank, Great Saughall, Little Saughall and Shotwick Park.

In 1904 the number of births registered in the District was 210, and the number of deaths registered in the District (excluding 90 not belonging to the District, and including 6 belonging to the District in Public Institutions) was 117. The birth-rate is about 0.4 below the average birth-rate of the District in 1894-1903, and the death-rate is about 0.3 below the average death-rate of the District in 1894-1903.

There were 10 deaths from the principal zymotic diseases, viz :—3 measles, 2 scarlet fever, 1 enteric fever, and 4 diarrhœa. Among the other deaths recorded were the following :—1 influenza, 5 enteritis, 5 phthisis, 1 other tubercular disease, 8 cancer, 18 bronchitis, pneumonia and other diseases of the respiratory organs, 1 alcoholism, 1 premature birth, 17 heart diseases and 7 accidents.

Cases of Infectious Disease Notified.—There were 44 cases of infectious disease notified, viz :—4 diphtheria, 36 scarlet fever, 2 enteric fever, and 2 erysipelas. Twenty-six of these cases were sent to the City of Chester Isolation Hospital, viz :—1 diphtheria, 23 scarlet fever, and 2 enteric fever.

There were also notified 7 cases of enteric fever in the County Asylum, which were dealt with in the Asylum Isolation Hospital. One of the 2 enteric fever patients sent to the City of Chester Isolation Hospital was a night attendant at the Asylum, who slept daily at his cottage at Upton Heath.

Action taken to prevent spread of Infection.—All the houses where cases of infectious disease occurred were visited, disinfectants supplied as required, and measures taken to prevent the attendance at school of pupils from houses in which cases have arisen, insanitary conditions when discovered were removed,

and cases which could not be isolated at home were promptly sent to hospital.

Inspection.—The Medical Officer of Health has visited the District from time to time, and besides investigating cases of infectious disease, has made general and special inspections. He has advised his Authority on many matters of detail in connection with these inspections.

Water-supply.—Part of the District is supplied from the Chester Waterworks, part from Wirral Waterworks, and part from the Wrexham Waterworks, while other parts have good well water. Elsewhere the water is unsuitable or deficient in quantity. Christleton, Newton, and Upton are supplied from the Chester Waterworks. The extension of the Chester water mains to Great Boughton has been accomplished by private enterprise. Great Saughall, Capenhurst, and part of Mollington are now supplied from Wirral Waterworks. Dodleston, Eaton, and neighbourhood are supplied from the Wrexham Waterworks.

The arrangement mentioned in the 1902 Annual Report, for the supply of Mollington from the Chester water-mains, has been carried out. Further extension is under consideration.

The District is traversed by a large conduit taking water from Vyrnwy to Wallasey, and a few houses in the District have been supplied therefrom. It may possibly become available for further supplies.

Sewerage.—The sewerage of Great Boughton and Christleton was commenced in June, 1903, and is proceeding. The scheme for the sewerage of Bache, Newton, and Upton is under consideration. The scheme has undergone so much revision that another inquiry by an Inspector of the Local Government Board has become necessary, and is being prepared for. These townships are to be sewered to the City of Chester, and the sewage will eventually be treated at the City Outfall Works. Parts of Newton and Great Boughton have been for some years connected to the Chester sewers.

Existing Sewers and Outfall Works. — Except in the immediate neighbourhood of Chester, the District is thinly populated. There are not many large villages, and few sewers. Eaton and Eccleston are sewered, and have Outfall Works for the purification of the sewage by the Amines process. Works for the purification of the sewage at Pulford, with septic tanks and bacteria beds, were provided during 1901. These were all constructed, and have been maintained by the owner of the estates.

The sewer at Christleton has been flushed during the dry weather.

Proposed Sewerage of Great Saughall.—Building operations at Great Saughall have led to the creation of a nuisance

there. This has been temporarily abated by the laying of a pipe drain. Plans are being prepared for sewering this place.

Refuse Removal.—Throughout the District most of the houses have ashpit-privies, the contents of which at longer or shorter intervals are emptied on land. The District Council have aimed at getting these privies modified, so as to approximate, as much as possible, to earth closets, and much has been done in this respect.

The Authority contract for the removal of ashpit refuse in the Township of Newton.

Inspector's Report.—The Inspector, Mr. Owen, continues to perform his duties with energy and ability. He makes a very complete report of the work done during 1904. He reports that 30 complaints were received, 120 houses, premises, &c., were inspected, and 50 re-inspected. Twenty-five formal notices were issued for the sanitary amendment of houses, premises, &c. At 20 houses drains were repaired, trapped, &c., and 12 accumulations of animal or other refuse were removed.

Cleansing of a Brook.—The Brook at Abbots Meads has been thoroughly cleansed by the adjacent owners, under notice from the District Council.

Factory and Workshop Act.—Six bakehouses were inspected twice during the year and found in order. Other workshops or work-places are being put on the register.

Dairies and Cowsheds, to the number of 110 have been under inspection throughout the year.

New Houses.—Nineteen new houses were completed in 1904, and 7 are in progress.

Bye-laws.—The model bye-laws of the Local Government Board, with respect to new buildings, are in force throughout the District. Mr. Cecil Davies is Surveyor to examine plans submitted and see that the Bye-laws are carried out.

CONGLETON

Rural District.

Medical Officer of Health—Dr. C. H. Wentworth-Bennett.
Population at Census, on April 1st, 1901—12,220.
Estimated Population in middle of 1904—12,220.
Area in acres—40,152.
Birth-rate per 1,000 living—27.2.
Death-rate per 1,000 living—13.8.
Death-rate from seven principal Zymotic Diseases—0.5.
Deaths under one year to 1,000 births—96.

Congleton R. D.

The population of Congleton Rural District was 12,505 at the Census in 1891, and 12,220 at the Census in 1901. The decrease in the population during the decennium—1891-1901 was thus 285. The estimate of the population made for the middle of the year 1903 assumes that there has been no increase since the Census.

The whole District for registration purposes has been divided into three sub-districts. They are as follows :—

1.—Church Hulme, having an area of 14,910 acres, includes Goostrey-cum-Barnshaw, Blackden, Twemlow, Cranage, Leese, Cotton, Church Hulme, Swettenham, Kermincham, Brereton-cum Smethwick and Davenport.

2.—Congleton, having an area of 7,885 acres, includes Somerford, Somerford Booths, Hulme Walfield, Newbold Astbury, and Moreton-cum-Alcumlow.

3.—Sandbach, having an area of 17,357 acres, includes Smallwood, Odd Rode, Church Lawton, Hassall, Betchton, Wheelock, Arclid, Bradwall, Tetton, Moston, and Elton.

The birth-rates of these three sub-districts are respectively 27.0, 26.1 and 28.7. The death rates of these three sub-districts are respectively 14.0, 18.9 and 13.0.

In 1904, the number of births registered in the whole District was 333, and the number of deaths registered in the whole District (excluding 15 which took place in the Workhouse and 3 in other Institutions, belonging to Congleton Borough and Sandbach, Buglawton and Alsager Urban Districts) was 169. The birth-rate is 1.6 below the average in the District in 1895-1903, and the death-rate is 0.5 above the average in the District in the same nine years.

Infant Mortality.—There were 32 deaths of infants under a year old, a number which is equal to 96 per 1,000 births. In 1895-1903 the deaths of infants were equal to 107 per 1,000 births.

Cases of Infectious Disease Notified.—The number of cases of infectious disease notified in 1904 was 53, viz. :—14 diphtheria, 17 scarlet fever, 3 enteric fever, 5 puerperal fever, and 14 erysipelas. All were treated at home.

Zymotic Mortality.—There were 7 deaths from the principal zymotic diseases, viz. :—3 diphtheria, 1 whooping-cough, 1 enteric fever, and 2 diarrhœa. There were also 3 deaths from epidemic influenza, 1 from erysipelas, and 1 from other septic disease.

Diphtheria.—Seven of these cases (2 fatal) occurred in Congleton sub-district, 5 were in the Sandbach sub-district, and 2 (one fatal) were in Church Hulme sub-district.

Bacteriological Diagnosis.—Arrangements have been made with Professor Delépine to have specimens from doubtful cases of diphtheria examined bacteriologically.

Antitoxin.—The District Council has given permission to the Medical Officer of Health to supply antitoxin, for injection as a preventative where families are unable to afford it.

Scarlet Fever.—Fourteen of the cases notified were in Sandbach sub-district, 2 were in Congleton sub-district, and one case was in Church Hulme sub-district.

Enteric Fever.—There was a case in each of the 3 sub-districts. The case in Congleton sub-district proved fatal.

Puerperal Fever.—There were 3 cases notified in Sandbach sub-district and 2 in Church Hulme sub-district. None proved fatal. Where a case occurs in the practice of a midwife, she is prevented from attending other cases for two months, and given instructions as to the best method of rendering herself aseptic.

Measles.—There was an epidemic of measles at Brereton and Holmes Chapel in the first quarter of 1904, and the disease was prevalent at Smallwood in the third quarter.

School Closure.—Late in the year the Smallwood Schools were closed on account of measles, and the Woodcock Wells Schools were closed on account of whooping cough, influenza and measles.

Small-pox "Contact."—Though no case of small-pox was notified in the District, a man developed the disease the day after he left. He became infected at Buglawton, where his home was, and lodged at Elworth. As soon as the information was received, the house where the man had lodged, and its inmates, were disinfected, and several persons who had been in contact with him were vaccinated.

Action taken to prevent Spread of Infection.—In all cases of infectious disease notified the premises are promptly inspected. Pamphlets are distributed giving full instructions as to isolation and disinfection, and disinfectants as required are supplied free of charge.

Isolation Hospital Accommodation.—The Hospital at Arclid has been during 1903 and 1904 reserved for small-pox only. The new arrangement of having a permanent caretaker there is a great improvement.

The provision of an Isolation Hospital for cases other than small-pox is still under consideration It will be provided jointly

by Congleton Borough and other Urban Districts, and Congleton Rural District.

Anthrax in Cattle.—During 1904, a case occurred at Lawton, another at Astbury, and a third at Elton. In each case the infected animal was cremated and the premises thoroughly disinfected.

Water-supply.—Holmes Chapel is in need of a good supply. Rode Heath and Thurlwood will be much benefited by the scheme at present before the District Council, if it be carried out. Except for these places, the District is well supplied with water.

It was mentioned in the Report for 1903 that water had been supplied to the Parish of Lawton by the North Stafford Company.

Dairies, &c.—These have been inspected from time to time. They are kept clean and in order.

Factory and Workshop Act.—The premises required to be inspected under this Act are very few. They have been inspected and found clean and well ventilated, with sufficient air-space and satisfactory sanitary conveniences. Efficient means of exit are provided in case of fire. There are no underground bake-houses in the District. Any suggestions made to the occupiers have always been complied with.

Slaughter-houses have been inspected. They have been found clean and in order. No nuisance has been caused by a slaughter-house.

Sewerage and Irrigation Grounds.—The new sewers at Elworth and Rode Heath, constructed in 1901, have proved of much benefit to the Districts they serve. The Medical Officer of Health again draws the attention of his Council to the great need of drainage at Thurlwood, and also at Kent Green. The improvement effected in the drainage of Holmes Chapel some time since has not been well maintained, and as a result a nuisance was created. Recently the arrangements at the outfall have been better supervised, and the nuisance has been abated. The irrigation grounds at Mow Cop, Mount Pleasant, and Lawton are working satisfactorily.

Refuse Removal.—The scavenging has been supervised during the year.

Common Lodging-houses, of which there are six, have been inspected, and found in order.

Canal Boats have been inspected, and any recommendations made have been carried out satisfactorily by the owners.

DISLEY

Rural District.

Medical Officer of Health—Dr. C. J. Bennet.
Population at Census, on April 1st, 1901—2,827.
Estimated Population in middle of 1904—3,050.
Area in acres—2,466.
Birth-rate per 1,000 living—18.7.
Death-rate per 1,000 living—12.1.
Death-rate from seven principal Zymotic Diseases—0.3.
Deaths under one year to 1,000 births—70.

The population of Disley Rural District was 2,827 at the Census in 1901, and the population of the same area was 2,260 at the Census in 1891. The increase in the population during the decennium 1891-1901 was thus 567, that is slightly over 25 per cent. The estimate of the population made for the middle of 1904 is 3,050.

During 1904 the number of births registered in the District was 57, and the number of deaths registered in the District was 37. The birth-rate is about 5 below the average birth-rate in Disley in 1894-1903, and the death-rate is about 2 below the average death-rate in Disley in 1894-1903.

Among the registered deaths were the following:—1 from diphtheria, 1 from phthisis, 1 from other tubercular disease, 2 from cancer, 4 from bronchitis, 4 from pneumonia, 4 from alcoholism or cirrhosis of the liver, and 3 from heart diseases.

Cases of Infectious Disease Notified.—There were 13 cases of infectious disease notified, viz.:—5 diphtheria, 3 scarlet fever, and 5 erysipelas. The cases were investigated and with one exception isolated, as far as possible, at home. The case excepted was sent to hospital.

Diphtheria.—Three of the persons who suffered from this disease (including the one who died) came from Manchester, having been infected there. Another patient had been visiting away from Disley, and probably contracted the disease when on this visit. Certainly there were no insanitary conditions at her Disley residence. When the fifth case occurred there were unmistakable defects, which in due course were remedied.

Scarlet Fever.—One of the cases arrived from London already infected. It was removed to the Hyde Isolation Hospital. The source of infection of the other 2 cases could not be traced.

Isolation Hospital Accommodation.—Satisfactory arrangements have been made with Hyde Corporation, under

which infectious cases from Disley will be received at Hyde Isolation Hospital.

Water-supply.—The District is almost wholly within the water-supply limit of the old Stockport Waterworks Company, which undertaking was acquired about five years ago by the Stockport Corporation. During the summer of 1904, as in other years, the supply was usually turned off at night, causing considerable inconvenience. This is a most undesirable practice, and should not occur. Arrangements should be made with the Stockport Corporation for an increased supply. Further Waterworks are being constructed in the Kinder watershed, which will enable the Corporation to improve their supply; but until the new works are completed, which may be years hence, the Corporation should be urged to fulfil their obligations by some temporary advance works which will prevent the summer supply being intermittent at Disley.

Furness Vale is within the limits of supply of the Corporation of Stockport, but no supply has yet been provided. The property owners, as we noted in the Annual Report for 1903, were asked if they were willing to have a water supply laid on to their houses by the Stockport Corporation, but the majority of them declined the offer, so the tenants have to continue obtaining their water from local sources, and this is often of "very questionable quality." The Medical Officer of Health urges the District Council to give this matter serious attention as soon as possible, and take steps to provide this portion of their District with a good public supply, "so as to prevent the majority of the inhabitants of Furness Vale having to drink contaminated water." As has been previously pointed out, the Stockport Corporation can obtain a temporary supply from the Diglee Waterworks, which are close by, and supply houses in Furness, belonging to Yeardsley-cum-Whaley Urban District.

During 1902 the Stockport Corporation extended their water main from Springfield to Newtown, with the result that the supply to Newtown has been improved.

Water Supply at a Dairy Farm.—The attention of the Medical Officer of Health was drawn to the water supply at a dairy farm, and he found it "very seriously polluted." This pollution should be prevented, and it can be prevented. The owner of the property should, without delay, provide a pure supply from some other source, or cease to let the farm for dairy purposes.

Dairies and Cowsheds.—The Inspector has made a Report on the dairies and cowsheds in the District, and this Report is at present under consideration. There are in all 44 premises reported on.

New Houses.—Thirteen new houses were erected in 1904. All were inspected before being occupied.

Improved Building Bye-laws Needed.—The revision of the building bye-laws, so as to bring them into conformity with Model Bye-laws of the Local Government Board has been under consideration, but the work is not completed. Improved bye-laws are much needed.

Urban Powers.—The District Council has obtained an order from the Local Government Board, under Section 297 of the Public Health Act, 1875, conferring Urban Powers which will enable them to make bye-laws with respect to (a) new streets, buildings, air-space, drainage, etc.; (b) prevention of nuisances, etc.; and (c) the regulation of slaughter-houses.

Public Health Acts Amendment Act, 1890.—The District Council have also adopted certain sections of this Act.

The Factory and Workshop Act.—This Act is receiving attention. As regards the Waterside Mill, the works are undergoing extensive alterations, but it is promised that all necessary requirements will be provided. The Cheshire Tan Works are also undergoing alteration. At the Albert Works, Newtown, the sanitary arrangements are satisfactory. At the Furness Vale Print Works some of the closets are much dilapidated, and the road to them is very bad. All defects will be amended, and necessary requirements will be provided.

Sewerage and Drainage.—The sewererage rf Disley, recently completed, works well, and the treatment at the outfall is effective, as shown by the character of the effluent. The property connections to the sewer should be pushed forward and completed as soon as possible; otherwise the pollution of the stream running through the village will continue.

Need of Sewerage at Furness Vale.—The Medical Officer of Health draws attention to the condition of Furness Vale, which is still without a proper system of sewerage and sewage disposal, and urges his Authority to provide the same.

Need of Sewerage at Newtown.—Attention is also called to the necessity of dealing with the sewage of the Newtown end of the District. The population is increasing here, and main drainage is much needed.

Refuse Removal.—Since November, 1900, the District Council have taken in hand the emptying of ashpits. A new

tip has been obtained. The work has been well done, and the sanitary condition of the District has been improved by the change. During the year 497 empty ingswere effected.

Inspector's Report.—Mr. H. Curtis, the Inspector, reports that during the year the pollution of the brook running through the village has received special attention. On two occasions pollution was reported and put a stop to. The emptying of ashpits and pail closets has been carefully supervised. The pails are emptied fortnightly. On 6 premises the drains have been repaired and put in order. Nuisances discovered or complained of have been abated.

Slaughter-houses are periodically inspected by the Inspector.

MACCLESFIELD

Rural District.

Medical Officer of Health—Dr. J. L. Rushton.
Population at Census, on April 1st, 1901—15,775.
Estimated Population in middle of 1904—16,270.
Area in acres—79,572.
Birth-rate per 1,000 living—21.3.
Death-rate per 1,000 living—15.2.
Death-rate from seven principal Zymotic Diseases—0.2.
Deaths under one year to 1,000 births—86.

The population of this Rural District was 15,775 at the Census in 1901, and the population of the corresponding area was 15,896 at the Census in 1881. The decrease in the population during the decennium 1891-1901 was therefore 121, that is 0.76 per cent.

The whole District has, for registration purposes, been divided into six sub-districts. These are as follows :—

1.—Alderley, having an area of 13,679 acres. It includes Birtles, Capesthorne, Lower Withington, Old Withington, Chelford, Snelson, Nether Alderley, Over Alderley, Great Warford, and part of Chorley.
2.—Bollington, having an area of 7,017 acres. It includes Tytherington, Pott Shrigley, Lyme Handley, and part of Hurdsfield.
3.—Gawsworth, having an area of 17,983 acres. It includes Gawsworth, Bosley, North Rode, Marton, Siddington, Henbury-with-Pexhall, and Eton-by-Congleton.
4.—Prestbury, having an area of 13,666 acres. It includes Prestbury, Poynton-with-Worth, Woodford, Newton, Adlington, Butley, Mottram St. Andrew, Fallibroome, and Upton.

5.—Rainow, having an area of 14,274 acres. It includes Taxal, Kettleshulme, Rainow, and Macclesfield Forest.

6.—Sutton, having an area of 12,953 acres. It includes Wildboarclough, Wincle, and part of Sutton.

The number of births registered in the whole District was 347. The number of deaths registered in the whole District was 203, but to these must be added 45 deaths of persons belonging to the Rural District who died in the Union Workhouse, Infirmary or Asylum, in the Borough of Macclesfield. Thirty of those who died were infants under a year old.

Cases of Infectious Disease Notified.—The number of cases of infectious disease notified was 52, viz : 3 small-pox, 5 diphtheria, 35 scarlet fever, 3 enteric fever, 3 puerperal fever, and 3 erysipelas.

Zymotic Mortality.—The number of deaths from the principal zymotic diseases was 4, viz. : 2 measles, 1 enteric fever, and 1 diarrhœa. The zymotic death-rate was therefore 0.2—a very low rate, even for a Rural District. There were two deaths from epidemic influenza, and there was one death from puerperal fever.

Small-pox.—During 1904 there have been two outbreaks of this disease. The first occurred at Langley and was traceable to Macclesfield. The patient, a woman, was removed to the Isolation Hospital for small-pox at Greenway, and within two hours of the notification of the disease a house-to house visitation for the purpose of re-vaccination was set in motion. Fortunately there was no spread of the disease and the patient recovered. The second outbreak was reported from Taxal, two cases occurring in the same dwelling, the disease being traceable to Derbyshire. It was impossible to remove these cases (both males) to the Hospital, so such isolation as was practicable was carried out at the house. Re vaccination was performed on all persons in the immediate neighbourhood, and no further cases occurred; both patients recovered.

Small-pox Isolation Hospital.—During the latter half of the year 1902 a temporary hospital for small-pox was erected in Greenway, Sutton. This was completed, and furnished, and ready for use about the middle of October. A few weeks later it proved of great use for the isolation of five cases of small-pox, which occurred in the Workhouse Infirmary late in 1902. The site is at an altitude 1,250 feet, and the building is so well constructed that it was not damaged by the gales and severe frosts of 1902-3. Water is supplied by means of a hydraulic ram, which has worked satisfactorily since it was started. It sends up an ample supply of excellent water 260 feet high, through 630 yards of pipes.

This Hospital was kept in readiness during 1904. It was used, as stated above, for the isolation of a woman from Langley. Information was received on the afternoon of August 25th that this woman was suffering from small-pox. Bedding and provisions were at once conveyed to Hospital, and early on the following morning the patient with a nurse and assistant were taken there. The disease was well developed before it was recognized and before medical advice was sought. The patient did well, and the Hospital was closed on October 6th.

Measles was prevalent throughout the greater part of the District in 1904. The two patients who died of the disease were young children belonging to Sutton Sub-district.

Whooping cough.—There have been many cases of this disease, necessitating the closing of schools in some townships, but none proved fatal.

Diphtheria.—There were only 5 cases notified and all terminated in recovery. One was in Alderley Sub-district, 2 in Gawsworth Sub-district, and 2 in Rainow Sub-district. No case of membranous croup was notified.

Scarlet Fever.—There were 35 cases notified: 7 in Alderley Sub-district, 2 in Bollington Sub-district, 8 in Gawsworth Sub-district, 9 in Prestbury Sub district, 2 in Rainow Sub-district and 7 in Sutton Sub-district. The majority of the cases were young children attending school. The disease was of a mild type and no case proved fatal.

Enteric Fever.—There were two cases in Alderley Sub-district (1 fatal) and one case in Bollington Sub-district.

Puerperal Fever.—One case was notified in Prestbury Sub-district, and 2 cases in Sutton Sub-district.

Influenza.—The number of cases is not known. One death occurred in Gawsworth Sub-district, and another death in Prestbury Sub-district.

Tubercular Disease.—There were seven deaths from phthisis and five from other tubercular diseases, thus the death-rate from all tubercular diseases was equal to 0.73 per 1,000 living.

The Medical Officer of Health finds that the infectious character of phthisis is still not sufficiently recognised, and that ventilation and disinfection (as preventive measures) receive scant attention. In many instances, owing to financial reasons, it is impossible to isolate the patient, or to remove him to a sanatorium for consumptives; but much might be done in properly disposing of the infectious expectoration, the disinfection of clothes, drinking vessels, etc., and, above all, by insisting on plenty of fresh air.

Action taken to Prevent Spread of Infection.—On receipt of a certificate notifying infectious disease, the Medical Officer of Health visits and examines the premises, gives instructions to competent persons, so that they may adopt all available means to prevent any extension of the disease. The source of water-supply and milk-supply are investigated, and frequently dairy cattle are inspected. Sulphur for fumigation and other disinfectants are supplied.

Isolation Hospital Needed.—" Much expense and friction might be spared by the provision of an Isolation Hospital. In many cases it is almost impossible to provide complete isolation in an ordinary dwelling, and, in consequence, the risk of further infection is greatly increased."

The only Isolation Hospital at present provided is the temporary building, already referred to, for the accommodation of small-pox cases.

Report of Surveyor and Inspector.—Much information is furnished by Mr. James Thorp's Report as to matters coming under his supervision. From this it appears that a large amount of work has been done.

Water-supply.—The proposal to purchase water under the provisions of Section 61 of the Public Health Act, 1875, from the Macclesfield Corporation, and to distribute it in several Townships in the District, was the subject of an official Inquiry by a Local Government Board Inspector during the year 1903, and, on receipt of the Board's sanction, the work was at once taken in hand. There have been 3,395 yards of water-mains laid in the Townships of Upton, Fallibroome, Prestbury, Butley, and Tytherington. On the completion of the works, copies of the Regulations, scale of charges, and forms of application for a supply were sent to the owners of every house *en route*. Where there was dilatoriness on the part of owners in availing themselves of the supply, Statutory Notices were served. The water is now in use at every house *en route*, except two which have private supplies of a satisfactory character. At Upton 36 houses have been supplied, at Prestbury 34 houses, at Butley 49 houses, at Tytherington 23 houses, and at Taxal 51 houses. Of all these houses 23 were newly supplied in 1904. Seven additional houses in Great Warford were newly supplied from the Stockport Corporation Waterworks, making 28 houses thus supplied in great Warford. In Chorley 27 houses are supplied from the same source.

The water-works at Poynton, which are owned by Lord Vernon, were extended during the year 1903 by the laying of 1,800 yards of water-mains, the construction of a pumping-station, and a new small service-reservoir for the higher parts of the township. The pumping machinery is driven by a gas engine. Thirty-four houses were newly supplied during 1903, and 27

houses were newly supplied during 1904. The number of houses newly supplied from these works is 486.

As regards water for Rainow, the source of supply, which was the subject of negotiations two years ago, having been secured, proposals for the collection, storage, and distribution of this water were formulated and approved in 1902, and submitted to the Local Government Board, with an application for sanction to a loan of £1,000, wherewith to construct the works. An official Inquiry was held by a Local Government Board Inspector in 1903, and the loan was sanctioned. Since this the Parish Council have petitioned the Rural District Council not to proceed in carrying out the scheme. A petition to the same effect, signed by a large majority of the ratepayers, including the occupiers of three-fourths of the houses to which the proposed supply would be conveyed, has also been received by the Rural District Council.

As regards the Township of Taxal, a provisional agreement has been entered into with the Chapel-en-le-Frith Rural District Council, for a supply of water in bulk, under the provisions of Section 61 of the Public Health Act, 1875, for distribution in Taxal. Application was made, in 1903, to the Local Government Board for their approval of this agreement, and to sanction a loan with which to construct the works The Board gave their approval and sanction, and the works (including the laying of 680 yards of water mains) were completed in 1903. At the end of 1904 out of 58 houses *en route* 51 were supplied.

During 1904 there were 10 samples of water taken for analysis. Five were reported by the Analyst as unfit for domestic use, and steps were at once taken to prevent the waters represented by the samples from being used for domestic purposes.

Twenty certificates for 43 houses were granted under the provisions of Section 6 of the Public Health (Water) Act, 1878.

Sewerage at Poynton.—Fifteen houses were, during the year, newly drained into the sewers at Poynton. The number of houses now drained into these sewers is 460.

During the continued dry weather in the summer of 1904 considerable difficulty was experienced, in maintaining a satisfactory effluent from the sewage disposal works. Sometimes there was none at all. At other times the flow was so small, that the most minute crevice in the ground conveyed enough of the tank effluent to spoil the final effluent.

Effluent Outfalls.—All outfalls where sewage-disposal works discharge into streams in the Rural District have been inspected at intervals throughout the year, to see they were in order.

New Houses.—Thirty-five sets of plans for New Buildings were submitted, and approved, under the Bye-laws with respect to New Buildings and to New Streets. The buildings comprise 47 houses and 3 schools. These buildings and other works were

visited frequently during construction or execution, to see that the Bye-laws were being complied with.

Houses Unfit for Habitation.—Five houses unfit for habitation were brought under the notice of the Authority. They were vacated without the service of a statutory notice. Of these 2 were re-built.

Over-crowding.—Two houses which were over-crowded were provided with additional sleeping-rooms.

Dairies, &c.—During 1904 there were 10 persons newly registered under the Dairies, Cowsheds and Milk-shops Orders. At the end of 1904 there were 393 persons thus registered. Most of the premises were visited during the year. They were usually found in satisfactory order as regards cleanliness.

Slaughter-houses were visited at intervals, and were found clean and in good order.

New Building Bye-laws.—As stated in the last Annual Report, the bye-laws with respect to new buildings, which were in force in ten only out of 37 Townships, have been repealed, and new bye-laws, which are much more suitable to a sparsely populated District, have been adopted, and are now in force in every Township. Copies of these, with an explanatory circular, have been distributed to owners, agents, architects, and builders.

Inspection of Factories and Workshops.—Under the Factory and Workshop Act, 1901, visits of inspection have been made to the known Factories and Workshops: and records instituted of those matters which are brought by this Act under the supervision of District Councils.

The sanitary arrangements and water-supply of a workshop employing 5 men and 55 women were overhauled and improved.

Nuisance Abatement.—During the year there were 23 statutory notices served for the abatement of nuisances, for the provision of water-supplies, or requiring efficient drainage. However, the abatement of large number of nuisances was obtained without formal notice. In no instance were further legal proceedings taken. There were 62 inlets to drains trapped, 32 houses newly drained, and 8 damp houses effectively dealt with. Many other nuisances arising from obstructed drains, inefficient disposal of drainage, the keeping of animals, the accumulation of refuse, &c., were abated.

Canal Boats.—Under the Canal Boats Acts, 28 boats were inspected during 1904. The boats were registered for 84 adults, and they carried 50 men, 8 women and 5 children. One boat did not carry any evidence of registration. Steps were taken to set right this irregularity, and there is good reason to believe that this boat has not been used since, and is to be broken up.

MALPAS
Rural District.

Medical Officer of Health—Dr. G. A. Kenyon.
Population at Census, on April 1st, 1901—4,488.
Estimated Population in middle of 1904—4,449.
Area in acres—21,406.
Birth-rate per 1,000 living—22.7.
Death-rate per 1,000 living—16.4.
Death-rate from seven principal Zymotic Diseases--0.9.
Deaths under one year to 1,000 births—109.

The population of Malpas Rural District was 4,488 at the Census in 1901. The population of the same area was 4,624 at the Census in 1891. The decrease in the population during the decennium 1891-1901 was therefore 136, that is, nearly 3 per cent. The estimate of the population made for the middle of the year 1904 is therefore a little lower than the population at the last Census.

The Rural District includes the following townships (civil parishes) :—Bickley, Hampton, Larkton, Duckington, Edge, Overton, Malpas, Chorlton, Cuddington, Oldcastle, Newton-by-Malpas, Stockton, Wyclough, Wigland, Agden, Childlow, Bradley, Macefen, Tushingham-with-Grindley, Wirswall, Marbury-with-Quoisley, Norbury, and Threapwood.

In 1904, the number of births registered in the District was 101, and the number of deaths registered in the District was 73. There appear to have been no other deaths belonging to the District. The birth-rate is 2.0 below the eight years 1896-1903, and the death-rate is 2.8 above the average in the same eight years.

The proportion of deaths of infants (109 per 1000 births) is higher than the average in the District, but not very high. Of those who died 41 per cent. were persons upwards of 65 years of age.

There were 4 deaths from the principal zymotic diseases, viz.: 2 whooping-cough, 1 diphtheria and 1 diarrhœa. There was 1 death from septic disease, and there were 3 deaths from epidemic influenza, 3 from phthisis or other tubercular disease, 5 from cancer, 7 from pneumonia, 2 from alcoholism or cirrhosis of the liver, 4 from premature birth and 12 from heart diseases.

Cases of Infectious Disease Notified.—There were 47 cases of infectious disease notified, viz. :—1 diphtheria, 43 scarlet fever and 3 erysipelas. The cases were isolated, as far as practicable, at home.

Scarlet Fever was confined to Bickley and its neighbourhood. The disease was of a mild type. The spread, in the first instance, was due to the attendance of children at a school in the parish of Cholmondeley, which is outside this Rural District. The school was quickly closed by the Managers, and efforts were

made to prevent the occupants of infected houses mixing with others. There was little extension of infection beyond the houses originally infected. However the disease spread in various families, as it was not possible to isolate first cases satisfactorily, there being no available Isolation Hospital. The houses infected were visited from time to time, and eventually disinfection was carried out.

Joint Hospital District Formed.—In order to provide Hospital accommodation for cases of infection for this District and the neighbouring Districts of Tarvin and Tarporley, application was made late in 1902 to the Local Government Board to form the three Districts into a Joint Hospital District. The official Inquiry was held in February, 1903, and the Order constituting the Joint Hospital District and Board has since been issued.

The work of providing a Hospital has been delayed owing to the difficulty experienced in obtaining a suitable site. A site has been found, and the Medical Officer has reported upon it favourably, but the owner is unwilling to dispose of it. It is proposed to petition the Local Government Board to issue a Provisional Order enabling the Joint Hospital Board to obtain the land otherwise than by agreement.

Provision for the Isolation of Small-pox.—In order to make some provision for the isolation of cases of small-pox should they occur, as seemed probable from the cases which have occurred of late in other Districts in the County, and the number of navvies engaged in laying a large pipe line (in connection with the Liverpool Water-works) through the District, 3 tents have been purchased, and a site secured for their erection.

Malpas has also entered into an arrangement with other parts of the Whitchurch Union and thus secured accommodation for the isolation and treatment of small-pox cases.

Inspection.—The Medical Officer of Health has from time to time inspected the District, and given advice on various matters of detail.

Water-supply.—The supply to the town of Malpas and to the township of Bickley is from the Liverpool mains, but it is intermittent, being turned off at night. Elsewhere the supply is less satisfactory, being from wells liable to pollution.

An improvement was effected during 1903 in the water-supply of Marbury, by the Lord of the Manor. Water was brought from some distance for the supply of the school and adjacent houses. This is supplementary to the supply brought to the village in 1902.

Refuse Removal.—The disposal of excreta is chiefly by combined ashpit-privies, the contents of which are removed from time to time and disposed of on land.

Malpas Outfall Works.—In the town of Malpas are a number of water-closets. The town is sewered to three outfalls, and at two of them the sewage is treated in bacteria beds, arranged in two tiers.

Inspector's Report.—The Inspector, Mr. Chubb, gives attention to all complaints, and endeavours to obtain abatement of all nuisances reported or discovered, and the cleansing of dirty premises. He states that 112 premises have been specially inspected, and 33 orders have been issued for the sanitary amendment of houses, premises, &c. Five houses have been repaired or cleansed, 18 houses have been disinfected after the appearance of infectious disease, 6 cisterns have been cleansed, 10 accumulations of refuse have been removed, and 4 nuisances from overcrowding have been dealt with.

Factory and Workshop Act, 1901.—Eighty-four inspections have been made under this Act. In one instance there was a want of cleanliness, and this was remedied after notice. There are 28 workshops on the register, including 7 bakehouses.

Common Lodging-houses.—The three lodging-houses in the District have been inspected.

Dairies, &c., are visited. Model regulations have been in force since March 1st, 1900.

Slaughter-houses are inspected from time to time. There are three in all, but they are neither licensed nor registered.

NANTWICH.

Rural District.

Medical Officer of Health—Dr. R. T. Turner.
Population at Census, on April 1st, 1901—23,197.
Estimated Population in middle of 1904—23,304.
Area in acres—98,463.
Birth-rate per 1,000 living—27.9.
Death-rate per 1,000 living—12.6.
Death-rate from seven principal Zymotic Diseases—0.4.
Deaths under one year to 1,000 births—90.

The population of this Rural District was 23,197 at the Census in 1901, and the population of the corresponding area was 22,912 at the Census in 1891. The increase in the population during the decenninm 1891-1901 was thus 285, that is 1.23 per cent. The estimate of the population made for the middle of the year 1904 is certainly not excesssive.

The whole District, for registration purposes, has been divided into 4 sub-districts. These are as follows:—

1. Crewe, having an area of 31,154 acres, and an estimated population of 11,056. It includes Warmingham, Has-

lington, Barthomley, Crewe (taking in Crewe Green), Willaston, Weston, Basford, Rope, Stapeley, Walgherton, Wybunbury, Hough, Chorlton, Lea, Blakenhall, Checkley-cum-Wrinehill, Bridgemere, Hunsterson, Doddington, Hatherton, Batherton, and parts of Coppenhall Church, Shavington-cum-Gresty, and Wistaston.

2. Nantwich, having an area of 21,300 acres, and an estimated population of 3,468. It includes Coole Pilate, Austerson, Baddington, Edleston, Burland, Faddiley, Brindley, Acton-by-Nantwich, Henhull, Hurleston, Poole, Stoke, Cholmondeston, Aston-juxta-Mondrum, Worleston, Woolstanwood, Leighton, and Minshull Vernon.
3. Bunbury, having an area of 22,113 acres, and an estimated population of 4,122. It includes Minshull Church, Wettenhall, Bunbury, Alpraham, Calveley, Bickerton, Bulkeley, Cholmondeley, Egerton, Wardle, Haughton, Spurstow, Ridley, and Peckforton.
4. Wrenbury, having an area of 23,899 acres, and an estimated population of 4,622. It includes Chorley, Wrenbury-cum-Frith, Woodcott, Broomhall, Dodcott-cum-Wilkesley, Sound, Audlem, Buerton, Hankelow, Baddiley, and Newhall.

In 1904 the number of births registered in the whole District was 651 and the number of deaths registered in the whole District (including 11 deaths of those belonging to the District which took place in the Workhouse in Nantwich Urban District, Manchester Infirmary, &c., and excluding 21 deaths at the Men's Hospital, of those not belonging to the District) was 294. The birth-rate was 1.7 above the average in the District in the eight years 1896-1903, and the death-rate was 1.7 below the average in the District in the same seven years.

The birth rates for the four Sub-districts were respectively 29.3, 24.2, 24.0, and 30.9. The death-rates for the four Sub-districts were respectively 12.9, 14.7, 11.1, and 11.4.

Infant Mortality.—Fifty-nine of the deaths recorded were of deaths under a year old. The causes of these deaths, entered in the register, were as follows :—1 measles, 3 whooping-cough, 2 diarrhœa, 2 bronchitis, 8 broncho-pneumonia, 1 congenital syphilis, 12 premature birth, 1 suffocation, 1 inattention at birth, 7 convulsions, 19 debility, marasmus and inanition, 1 rickets, 1 intussusception.

The deaths of infants under a year old during the eight years, 1896—1903, were respectively 78, 90, 64, 68, 56, 55, 56 and 53.

Deaths from Zymotic Diseases.—The number of deaths ascribed to the principal zymotic diseases was 9—being equal to a death-rate of nearly 0.4 per 1,000 living. This is a fairly low rate. The 9 deaths were registered as follows :—2 measles, 4 whooping-

cough, 1 enteric fever, and 2 diarrhœa. There were also 2 deaths from influenza, 2 from erysipelas and 1 death from puerperal fever.

Cases of Infectious Disease Notified.—In all 110 cases of infectious disease were notified, viz. :—1 small-pox, 5 diphtheria, 79 scarlet fever, 4 enteric fever, 3 puerperal fever and 18 erysipelas.

The following tabular statement shows at a glance the cases of infectious diseases notified in the District during 1896—1904, and the deaths therefrom.

Year.	Cases Notified.									Deaths.								
	Smallpox.	Scarlet Fever.	Diphtheria.	Membranous Croup.	Enteric Fever.	Puerperal Fever.	Erysipelas.	Total Annual Notifications.	Smallpox.	Scarlet Fever.	Diphtheria.	Membranous Croup.	Enteric Fever.	Puerperal Fever.	Erysipelas.	Total Deaths.
1896	...	109	9	8	4	2	...	132	...	6	6	8	1	2	...	23
1897	...	117	11	...	4	1	10	143	...	4	3	...	1	...	2	10
1898	...	94	16	4	14	...	14	142	...	4	1	1	5	...	1	12
1899	...	59	27	...	11	2	14	113	...	2	4	...	...	1	...	7
1900	...	164	9	3	9	1	15	201	...	5	2	1	2	...	...	10
1901	...	79	30	1	7	5	6	128	...	1	8	1	2	2	...	14
1902	2	20	73	...	4	2	9	110	...	...	13	...	1	...	...	14
1903	2	33	24	1	4	...	10	74	...	...	5	1	2	...	...	8
1904	1	79	5	...	4	3	18	110	...	...	...	...	1	1	2	4

Small-pox.—Only one case was notified in 1904. This occurred on March 4th, at Audlem. The report of the Medical Officer of Health on this outbreak and how he dealt with it, is as follows:—

"The patient was a young man, aged 26 years, who had been living in service in London, and, having got out of employment, had walked home. When he had been at home about seven days he began to feel ill. I found, on enquiry, that he had slept at various lodging-houses on his way home, and that on the eleventh and twelfth nights before his first symptoms of illness he had slept in a lodging-house at Newcastle-under-lyne. He unfortunately, did not know the name of the house, or that of the street in which it was. I feel practically certain that he was infected in this house, as I believe there were several cases of the disease in the neighbourhood of Newcastle at that time. Immediately on receipt of a telegram from the medical man in attendance, asking me to see the case with him, I went to Audlem, examined the man, obtained a complete list of persons who had been in contact with him since his illness began, and arranged for his removal to the Small-pox Hospital. Within six hours nurses were obtained, the hospital made ready, and the patient comfortably established therein. Considering that the patient had about 6½ miles to travel to hospital, I consider that no time was lost in his removal. On the next day I arranged with the Public Vaccinator for the vaccination of all contacts, and requested Mr. Storey to start the disinfection of the rooms which the patient had occupied. This was done by him to my entire satisfaction. Various articles of clothing, bedding, and furniture of small value were burnt by my direction, and other articles were sent to Crewe for disinfection by steam. I am pleased to report that the man recovered, and that there was no spread of the disease. This case shows the necessity of having hospital accommodation always ready for cases of small-pox. It was absolutely impossible to attempt isolation of such a case in his own house, and but for the hospital provision, spread must almost of necessity have taken place."

Scarlet Fever.—The 79 cases occurred in 23 townships. The cases at Bridgemere, Blakenhall, Checkley and Hunsterson, were in families, members of which attended Bridgemere School, and in each family the child first attacked was actually in attendance at School. The Managers were requested to close the School for a short period. This measure was successful in checking the outbreak at once. The cases at Doddington were probably infected during a visit to the seaside. The cases at Cholmondeley and Egerton were confined to children attending Cholmondeley School, and were part of an outbreak affecting the Township of Bickley, which adjoins this Rural District. As it was thought that school-infection was taking place, the Medical Officer examined all the children at the School, and found some with slight disquamation or with nasal discharges, and the School was

accordingly closed for a few weeks, during which the premises were cleaned and disinfected. In the first week after re-opening cases were notified in the neighbourhood, the School was again closed and the outbreak stopped. Most of the other cases of scarlet fever which arose were sporadic, and appeared to be infected from various sources, most of which could not be discovered. The ten cases at Church Coppenhall were probably infected through attendance at School in Crewe. One case, at Shavington, was probably infected during a ride in an omnibus, as a child from an infected family in Crewe was sitting by the child from Shavington, during the ride from Crewe. The other cases at Shavington seemed to have some relation to attendance at the Shavington Schools, but this relation was not definite enough to justify closing of the Schools.

Diphtheria.—Five cases of this disease were notified during the year. One occurred at Haslington in a child aged thirteen, on October 12th; one at Barthomley, aged twenty-six, on October 14th; one at Willaston, aged thirty-three, on November 20th; one at Warmingham, aged eight years, on December 7th; and one at Wistaston, aged fourteen years, on December 27th. In the cases at Warmingham and Barthomley, gross sanitary defects were found on the premises where the cases occurred. In the other cases it was not easy to assign a cause for the outbreak. The sanitary defects discovered were remedied.

Diphtheria Antitoxin is, in the opinion of the Medical Officer of Health, of great benefit, especially if applied sufficiently early. Antitoxin serum is now within the reach of every one in the Rural District, as the District Council have instructed the Medical Officer of Health to keep and distribute a free supply of antitoxin for use in cases of necessity and poverty, as a preventative of diphtheria, and as a remedial agent.

Enteric Fever.—Four cases of this disease were reported during the year; they were as follows:—One at the Workhouse Infirmary, Worleston, that of a man, aged forty; one at Weston on February 20th, that of a woman, aged fifty-seven years; one at Haslington on May 12th, a child, aged seven years; and one at Weston on August 6th, that of a woman, aged thirty-seven years. In the three last cases gross sanitary defects were found on the premises. The cases at Weston were in adjoining houses. All defects discovered were remedied.

Puerperal Fever.—Three cases were reported during the year, of which two were close together, and in the practice of a certain midwife at Shavington. The Medical Officer of Health called on the midwife to cease attending cases for a month, and not to return to her employment till she had been properly disinfected. This action appeared to stop an outbreak, which at first threatened to be serious. The third case was at Baddiley.

Nantwich R. D.

Registration of Midwives.—The Medical Officer of Health reports that the names of all midwives supplied to him, as practising in the Rural District, have been sent to the County Medical Officer of Health with a view to their registration. He has no doubt that good will come of the supervision which these women will shortly receive. He, however, thinks that in the future there will be some difficulty in providing trained women fit for registration by the Central Midwives Board, when, in course of time, the women placed on the Register, owing to their having been in practice before the passing of the Midwives Act, have been removed by death or retirement.

Erysipelas.—Eighteen cases of this disease were reported. They occurred at Hough, Weston, Bunbury, Willaston, Minshull Vernon, Shavington, Haslington and Wistaston.

Measles.—This disease was epidemic a Shavington in October and November, and for this reason the School was closed for a short period.

Whooping-cough.—This disease was prevalent at Church Minshull during the latter part of the year, and at about the same time was prevalent also at Ridley. It was undoubtedly spread at School.

Schools.—The Schools at Cholmondeley, Bridgemere, Shavington and Church Minshull were closed for short periods during the year on account of infectious outbreaks. The Medical Officer of Health regrets the abolition, by the Education Department, of the Epidemic Grant under Section 101 of the Code. As matters now stand, if a child is excluded on account of infectious disease in the family to which it belongs, no grant is received by the Managers, whereas formerly, if the child was excluded by the direction of the Medical Officer of Health, the same grant was paid as if the child had been present. The outcome of this is the tendency to continue a child's attendance at School as long as possible, as its exclusion means financial loss. It is easy to see that if several families are excluded this financial loss may be very serious. In fact it pays the Managers much better to close the School and thus deprive a whole neighbourhood of all educational advantages, than to exclude any considerable number of children. The abolition of the grant tends on the one hand to the spread of disease, and on the other to the hindering of education.

Phthisis.—The number of deaths from phthisis in 1904 were 14, being equal to about 0.6 per 1,000 living. In 1903 the phthisis death-rate was 0.3, in 1902 it was 0.38, in 1901 it was 0.6, and in 1900 it was 0.75.

Other Tubercular Diseases caused 8 deaths, of which only 2 were young children.

Cancer.—There were 21 deaths from cancer, being equal to 0.9 per 1,000 living.

Alcoholism.—Three deaths were ascribed to alcoholism, or cirrhosis of the liver.

Uncertified Death.—The only case of death not certified by a Medical Practitioner, or made the subject of a Coroner's inquest, was registered as "probably convulsions."

Coroner's Inquests.—During 1904 33 inquests were held. The causes of death, as certified by the Coroner, were as follows: heart disease (2), anthrax (1), burns (3), drowning (8), bronchitis (2), run over by train (2), cut throat (2), suffocation (2), blood-poisoning (2), accident (1), inattention at birth (2), poisoning by salts of lemon (1), poisoning by strychnine (1), thrown from a conveyance (1), suicide by shooting (2), run over by cart (1).

Preventing the spread of Infectious Disease.—The method of procedure on receipt of a notification of infectious disease is as follows:—On the same day intimation is sent to the Master or Mistress of the School attended by members of the family, and the exclusion from the school of all coming from the infected house is requested. At the same time a paper of instructions is sent to the head of the family, and as soon as practicable the house is visited, the sanitary state of the premises is noted, and steps are taken to remedy defects discovered. Advice is given to the head of the family, and disinfectants are supplied.

Isolation Hospital Accommodation. — Provision is made for the isolation of small-pox cases at the Small-pox Hospital at Revensmoor. The Nantwich Joint Hospital Board have a good site for their proposed Hospital for infectious cases other than small-pox. They have passed plans for this Hospital, which is to accommodate 20 patients. The Medical Officer of Health thinks that, when this Hospital is erected, the reasonable requirements of the Nantwich Urban and Rural District will be met. The Hospital now building will be for the reception of cases of scarlet fever, diphtheria, and enteric fever. It is approaching completion, and will probably be ready for occupation in 1905. The Medical Officer of Health is not in favour of "hurrying off all cases of scarlet fever into hospital from rural townships," but only those cases where special difficulties exist. As regards cases of diphtheria and enteric fever, the Hospital will be of the highest utility.

Disinfection. — A proper disinfecting apparatus will doubtless be provided in conjunction with the proposed Isolation Hospital. The want of an apparatus for the proper disinfection of bedding, etc., has been several times commented on.

Clothing and bedding are in some cases disinfected at the steam-disinfector at Crewe. The disinfection of rooms is largely effected by means of formic-aldehyde. The Inspector now in all cases supervises the disinfection of rooms.

Bacteriological Diagnosis.—Since the beginning of the year 1899 an arrangement has been in force by which specimens of blood from persons suspected of suffering from typhoid fever, and swabs from the throats of persons suspected of suffering from diphtheria, may be examined bacteriologically by Professor Delépine, of Manchester, at the expense of the District Council. This arrangement has been of the greatest value on many occasions.

Anthrax in Cattle.—Numerous cases of anthrax have occurred in this District during 1904, and visiting them has entailed a considerable amount of work. In one instance a butcher, who had dressed a carcase and sent it to Manchester, was infected, and died of the disease. The carcase of meat sent to Manchester was seized and destroyed.

Rivers Pollution.—Practically no alteration has taken place in the condition of the streams of the District, in particular the condition of the Checkley Brook is undoubtedly, at times, very bad.

Dairies and Cowsheds.—There were 198 cowsheds, etc., inspected and reported on in 1904, reports in all cases being presented to the Council. A copy of each report was forwarded by the Clerk to those responsible for the condition of the premises, with a synopsis of the regulations and explanatory remarks, together with a request from the Council that the premises be altered in accordance with the regulations. With very few exceptions, all the registered cowsheds in the District have now been reported on. Thirty-three new names have been added to the Register during 1904, and 177 names have been taken off the Register, either owing to death, removals, or special applications. At the end of 1904 there remained 377 names on the Register. No general re inspection has yet taken place, but casual re-inspections have revealed many improvements carried out. With respect to a general re-inspection, the Inspector advises that the District Council should issue Notices that such general re-inspection is about to take place, and at the same time indicate the action the Council may take in those cases where either nothing has been done, or nothing of much value. It is necessary and desirable that every consideration should be given in the carrying out of Regulations that must cost "somebody" a considerable amount of money, but at the same time if the Regulations are to be carried out fairly, not only those who are willing and desirous to do their

best should be reported upon, but the "hangers back" should also be dealt with, and especially those that are "waiting" to see if the Council are really in earnest in requiring a general compliance with their regulations.

Main Drainage.—With the exception of coupling up houses to existing sewers the only matter to report is, that a scheme has been prepared and submitted to the Local Government Board for the sewerage of Broad Lane, Stapeley.

Slaughter-houses.—Inspections of licensed and registered slaughter-houses have been made from time to time. Urban powers for the regulation of slaughter-houses have now been obtained for the whole District, and new bye-laws have been prepared and approved by the Council. During 1904 these bye-laws were approved by the Local Government Board. All the Townships belonging to the District are thus under the same bye-laws. The good effect is already apparent, and will be more so as times goes on.

Diseased Meat.—The prosecutions successfully undertaken by the District Council appear to have had a salutary effect, though the trade in deceased meat is not entirely repressed. It is now quite common for the Medical Officer of Health or Inspector, to be asked by butchers to examine doubtful carcases. It has been made known widely that this duty will be willingly undertaken. No formal seizure of meat was made in 1904.

Sanitary Administration.—Since August, 1903, the Sanitary Staff of the Council has been increased by the appointment of Mr. John Storey, as Inspector of Nuisances. Mr. J. A. Davenport, who for many years has held the combined offices of Surveyor and Inspector continues to hold the office of Surveyor and Water Works Engineer, and, in addition, is Inspector of Canal Boats, and under the Dairies, Cowsheds, and Milkshops Orders. The appointment of an Inspector has proved of great benefit, and has given opportunity for a much more prompt attention to sanitary conditions than was always possible in the past, and has allowed of much work being done in the matter of the inspection of Dairies and Cowsheds.

Reports of Surveyor and Inspector.—Much information is furnished by Mr. J. A. Davenport's Report and Mr. J. Storey's Report as to matters coming under their supervision. From these it appears that a large amount of good work has been done during the year.

Water-supply.—There is still progress to report in the matter of water-supply. The laying of auxiliary mains in Chorlton, Hough, Wybunbury, and Stapeley, and extension of the

mains in Alvaston, Haslington, Haughton, and Wistaston, have added considerably to the length of mains in the District. In 1904 there were 8073 yards of new mains laid by order of the District Council.

The entire length of mains now laid in the Rural District since 1879 has been 274,931 yards, or nearly 156¼ miles. Mains laid by private owners prior to 1901 have not been included.

Eighty-two additional houses have been supplied with water from the Council's mains during the past year, making a total of 4,032 houses supplied by mains in the District since 1879.

The consumption of water throughout the whole District during 1904 has been 66,850,000 gallons, of which 1,110,000 gallons have been supplied to Bickley, for the Malpas Rural District Council, giving a consumption per house per day of 55.7 gallons for the whole District, and a consumption per head of population per day of 11.1.

Work in connection with the various water main extensions before referred to has been going on more or less during the greater portion of the year, and it may now be claimed that the pressures throughout this very large Rural District, supplied by water mains, are quite satisfactory. It is very satisfactory, too, that Wybunbury, Stapeley, and other portions of the District have now no just cause of complaint on the ground of want of pressure.

Mr. Davenport adheres to the view expressed in previous reports as to the supply of Audlem, and surrounding districts, either in connection with Nantwich Urban District Council or the Rural Council alone, but he thinks it desirable to consider the supply of Chorley, and the Combermere estate and district, from the Cholmondeley mains, and the Vyrnwy aqueduct.

Unguaranteed townships must be always dependent on a selling of the waters to the consumers by measure, to some extent like other commodities are sold, or the township rates will have to bear any burden that may arise from any excessive use of water.

The Stapeley water works are in good order, but owing to the inadequate rainfall in the latter part of 1904, the storage in the reservoir had at times to be supplemented from the upper mains.

The Barthomley well has been greatly improved, and a new pump was put in in the early part of last year.

The water supplies of three houses within the statutory limits of water mains have been submitted to the County Analyst and reported to be "bad." These houses have since been coupled up with the mains.

New Buildings.—Plans for 79 new buildings were passed in 1904, of these 53 were new dwelling-houses, 15 were

out-houses, 7 were alterations or additions, 3 were schools or Public Buildings, and 1 was for a slaughter-house. In all 2,444 plans for new buildings have been passed in the District since urban powers in respect of new buildings were conferred on the Authority in 1875. New houses, additions, etc., were inspected during erection and after completion.

No Common Lodging-houses are in this District.

Scavenging.—In Willaston, Shavington, Audlem, and Haslington, contracts are made by the Council for the emptying of closets and ashpits. The work has been well done in all the townships, except at Haslington, where, on several occasions, irregularities have occurred. During the year the Council decided to scavenge a number of houses at Church Coppenhall, the work has been satisfactorily done. In none of the townships does the Council provide for the emptying of cesspools.

Abatement of Nuisance.—Statutory Notices have been served in respect of 13 premises for the abatement of nuisances, and a very large number of informal notices were also served, with satisfactory results.

Public Lighting.—The public lighting of the townships of Audlem, Crewe (township), Acton, and Willaston, has been duly carried out. Shavington-cum-Gresty at the close of the year shewed signs of a desire for more light. The Council formerly lighted a portion of the township, which was subsequently taken into the Borough of Crewe. Revised tables for lamp-lighting have been furnished to Audlem.

Factories and Workshops.—The total number of Workshops on the Register at the end of the year was 35. The number of inspections made was 56, only 3 defects were found, of which 2 were remedied before the close of the year.

House to House Inspection.—During 1904 there were 345 dwelling-houses subjected to a Sanitary Survey, particulars of each house have been recorded in a book kept for future reference. Special attention was paid to construction of walls, roofs, windows, floors, drainage, and sanitary conveniences. Defects discovered were notified to owners with a view to their removal.

Insanitary Property put in Order.—A number of houses in bad repair, which had been uninhabited for a number of years were brought under the notice of the Sanitary Inspector, by a speculative builder. In Church Coppenhall, such improvements as the Inspector suggested were carried out, and the cottages are now inhabited, the tenants paying 2/- per week rent.

Canal Boats.—Fifty-five Canal Boats have been fully inspected during 1904, and 43 of them conformed entirely to the requirements of the Canal Boats Acts, and Regulations made thereunder. As regards the remaining boats, there were 17 infringements. An absence of Certificate in one boat was satisfactorily explained by its having been sent in to the Registration Authorities for the purpose of re-registration. A girl just over the legal age in another boat was found occupying the same cabin as her relatives, a man and wife. Eight boats required painting, and five required repairs. In two boats, no proper water vessels were provided. No case of infectious disease is known to have occurred on board any boat. No legal proceedings were necessary during 1904 In all cases, breaches of regulations have be n brought to the notice of the owners of the boat, in several instances of re-inspection it was found that promises to put the boat in order had been kept. The re-inspection of all boats was not practicable.

There were 34 women on the 55 boats inspected, and 38 children. Twenty-one were children between the ages of 5 and 12 years, and 17 were children under 5 years of age. On 8 boats were women and no children. On 23 boats were women and children, and on 24 boats there were men only. Twenty-eight captains had homes on shore, and 27 captains had no homes beyond their boats. Sunday and week-day services are held on the canal at Barbridge, a centre for canal boat traffic.

Improvements are going on in connection with the canals, but more are possible. The Local Government Board's Inspector in his Report to the Board suggests that it should be made "an offence to keep a child of school-age on a canal boat, except during the holidays." Better fore-cabins are also required, for many on the registered boats are not proper and healthy abodes.

NORTHWICH

Rural District.

Medical Officer of Health—Dr. H. E. Gough.
Population at Census, on April 1st, 1901—22,073.
Estimated Population in middle of 1904—23,175.
Area in acres—54,310.
Birth-rate per 1,000 living—25.3.
Death-rate per 1,000 living—13.5.
Death-rate from seven principal Zymotic Diseases—1.4
Deaths under one year to 1,000 births—103.

The population of this Rural District was 20,954 at the Census in 1891, and 22,073 at the Census in 1901. The increase of the population during the decennium 1891-1901 was thus 1,119, that is 5.34 per cent. The estimate of the population for the middle of the year, 1904, does not appear to be excessive.

Northwich R. D.

The whole District, for registration purposes, has been divided into four sub-districts. These are as follows:—

1.—Weaverham, having an area of 17,978 acres, includes Delamere, Eddisbury, Oakmere, Cuddington, Weaverham-cum-Milton, Crowton, Acton by-Weaverham, Little Leigh, Barton, and Hartford.

2.—Northwich, having an area of 10,904 acres, includes Cogshall, Comberbach, Marbury, Marston, Wincham, Lostock Gralam, Peover Nether, Allostock, Anderton, Leftwich, and Winnington.

3.—Over, having an area of 12,475 acres, includes Marton, Darnhall, Eaton-by-Davenham, Little Budworth, Wimboldsley, Clive, Moulton, and unnamed areas, formerly detached parts of Marton and Over civil parishes.

4.—Middlewich, having an area of 12,953 acres, includes Davenham, Rudheath, Whatcroft, Bostock, Stanthorne, Sproston, Byley, Lach Dennis, and Kinderton.

The population of these four sub-districts at the middle of the year 1904 is estimated to have been as follows:—

Weaverham	9,060
Northwich	8,010
Over	2,940
Middlewich	3,165

During 1904 the number of births registered in the whole District was 588, and the number of deaths registered in the whole District was 313. Three of the deaths were of non-residents and should be excluded, and 5 deaths of residents (which took place outside the District) should be included. Thus the deaths belonging to the District were 315.

The birth-rate of the whole District is 4.7 below the average in 1894-1903, and the death-rate of the whole District is about 0.5 below the average in the same ten years.

Eighteen of those born were illegitimate—just over 3 per cent.

Infant Mortality.—Sixty-one of those who died were infants under a year old. The deaths of infants were thus equal to barely 103 per 1,000 births. The deaths of infants in the District in 1894-1903 were equal to 132 per 1,000 births. The infant mortality record for 1904 therefore compares favourably with that of past years. The principal causes of deaths of infants certified were as follows:—1 small-pox, 8 measles, 2 whooping-cough, 2 diarrhœa, 1 tubercular disease, 5 bronchitis, 5 pneumonia, 1 venereal disease, 12 premature birth, 6 convulsions, 4 marasmus, and 2 accidents.

Forty one of the 61 infants who died were under six months old. Two of the 61 were illegitimate children.

Northwich R. D.

Cases of Infectious Disease Notified.—The number of cases of infectious disease notified in 1904 was 187, viz.:—12 small-pox, 47 diphtheria, 1 membranous croup, 87 scarlet fever, 12 enteric fever, 6 puerperal fever, and 22 erysipelas. All the small-pox cases, 13 of the diphtheria cases, and 22 of the scarlet fever cases were isolated in Hospital. Three small-pox contacts were also isolated for some time in the Hospital, and a small-pox case from Northwich Urban District was also isolated there.

Deaths from Zymotic Diseases.—There were 34 deaths from the principal zymotic diseases, viz.:—2 small-pox, 19 measles, 2 whooping-cough, 2 diphtheria or membranous croup, 5 enteric fever and 4 diarrhœa. There was also a death from "croup," and a death from epidemic influenza.

Small-pox.—Twelve cases of this disease occurred, all of them during the last quarter. The first case notified was a woman aged 67, living in Hartford, who unquestionably contracted the disease at Urmston, near Manchester, and sickened a few days after coming home to Hartford. This case had no connection with the others. The next outbreak occurred in Little Leigh, on the extreme boundary of the District, 3 persons in one cottage being notified simultaneously. They were at once removed to Hospital, having evidently contracted the disease from relatives living a mile or two away in the Runcorn Rural District. The next outbreak occurred some six weeks later, in the adjoining village of Barnton, by the almost simultaneous notification of 7 cases, all relations. They were at once removed to Hospital. The last of these cases was removed to Hospital on December 11th, and on December 29th, another case occurred in Barnton. The connection between the first batch of cases in Barnton and those at Little Leigh was clear. The source of infection in the last case was at firts obscure; but careful inquiry elicited the fact that the patient's husband had suffered from an illness which was evidently a slight modified attack of small-pox. He had been in the company of a man convalescent from the disease (who was only discovered when his wife and two children were taken ill) and had a vaccination scar on his arm about the size of a penny. His wife contracted a severe attack of confluent small-pox which proved fatal. Al these cases were removed to Hospital, and also three uninfected children (whose father, mother, and two sisters were also taken) for the sake of quarantine. Bedding, clothing, etc., disinfected or burnt, and re vaccination of contacts was carried out with great promptitude. It speaks well for the decision, energy, and care displayed by all the sanitary staff that an outbreak so extensive was cut short at once, for no further case occurred.

Of these 12 cases, 3 proved fatal, and the influence of vaccination is remarkably instructive. The first fatal case was a woman of 61 who had not been vaccinated since infancy, and whose arm showed little trace of any scars. The second death

was that of an infant, two months old, who had never been vaccinated. The last death was that of a woman aged 35, who said that she had been vaccinated in infancy but "it did not take." Her arm did not show any vaccination scars." This woman's death did not take place till January 26th, 1905, so that her death does not appear in the mortality record of 1904. All these cases were of the confluent type, and one patient almost certainly contracted the disease from a case so mild as to be unsuspected. The other cases were not of a severe type, and an infant of four months, who had recently been vaccinated and whose arm showed only one good scar, had a very slight attack indeed, in marked contrast to the infant which having never been vaccinated developed so severe an attack that it died on the fifth day of the disease.

All the 12 cases of small-pox occurred in Weaverham sub-district.

Diphtheria.—Though there were 47 cases, most of them were mild in type, and only 2 proved fatal. There were 28 in Weaverham sub-district, 9 in Northwich sub-district, 9 in Middlewich sub-district, and only 1 in Over sub-district. Twenty-five cases occurred in the Township of Barnton. In 10 or 12 instances the diagnosis was confirmed by bacteriological tests.

Scarlet Fever.—Seventy of the notified cases were in Weaverham sub-district, 13 in Over sub-district, and 1 in Northwich sub-district. The epidemic prevailed chiefly in the Townships of Weaverham, Barnton, and Little Leigh. The cases were mostly of a very slight character. Not a single fatality occurred.

During April, the Little Leigh Schools were closed for a period of 8 weeks, with a very marked influence in checking the spread of the disease.

Enteric (or Typhoid) Fever.—Of the 12 cases notified 11 were in the Weaverham sub-district, and 1 was in Middlewich sub-district. This outbreak was caused by the contamination of milk at a small holding. The premises were in a most insanitary condition, and the farmer himself contracted the disease; he evidently was the source of the infection, and 5 persons to whom milk was supplied in neighbouring cottages became infected. The sale of milk was stopped; the well which supplied all the water was condemned, with the result that no further cases occurred. The farmer himself, his daughter, and another young woman died. The premises were not registered as a dairy farm. The circumstances of this outbreak illustrated the necessity for all dairy farms to be registered, and the Rural District Council have petitioned the Local Government Board to eliminate the clause from their Orders, which permits the small holders from supplying neighbours with milk without being registered.

Measles.—During the latter half of the year a very extensive epidemic spread over practically the whole district,

with the exception of the townships of Barnton, Little Leigh, and Acton. Closure of schools was enforced in most of the villages for periods varying from 3 to 5 weeks, with a beneficial effect.

Whooping Cough.—This disease has not been so prevalent as during 1903, only 2 deaths having been registered. These were both in Northwich sub-district.

Isolation Hospital.—The number of patients in this hospital at the commencement of the year was four. Forty-nine fresh cases were admitted during the year, one of these being from the Workhouse in Northwich, and three children were also admitted for quarantine, from Barnton. Twelve cases remained in the hospital at the end of the year, all of them small-pox, 41 were discharged cured, and three died (one of these being diphtheria and two small-pox).

Of the 48 cases removed from this Rural District, 23 were scarlet fever; two being from Moulton, three from Hartford, two from Weaverham, nine from Barnton, two from Acton, and five from Little Leigh; 13 were diphtheria, Barnton contributing nine; Comberbach, Whatcroft, Winnington and Wincham, each one; 12 were small-pox, Hartford contributing one, Little Leigh three, and Barnton eight.

The Hospital buildings have been maintained in thorough order.

The Joint Isolation Hospital for Northwich, Winsford and Middlewich Urban and Northwich Rural Districts is progressing rapidly. The foundation stone was laid by Major Wilbraham, the Chairman of the Committee, on the 26th October, and there is reasonable expectation that the Hospital will be ready for occupation within one year from that date.

Bacteriological Examinations.—The Rural District Council have had arrangements since October, 1898, for the bacteriological examination of material from suspected cases of typhoid fever and diphtheria.

During the year, the diagnosis was verified in many cases of Diphtheria.

Dairies and Cowsheds.—The number of premises registered at the end of 1904 was 403, one new dairy having been registered during the year. Transfers to new tenants have been made in seven instances. The standing Committees have inspected 13 farms. The Regulations are strictly enforced.

Tuberculosis.—During the year 11 persons died from phthisis, and seven from other forms of the tuberculosis. Thus the phthisis death-rate was equal to 0.47 per 1,000 living and the entire tuberculosis death-rate was equal to 0.77 per 1,000 living.

The Factory and Workshop Act, 1901, has received due attention. In this District the factories are few and the workshops are numerous; each village has its bakehouse, dressmakers, tailors, etc., all of which have to be registered, however small the business done. As regards bakehouses, they are usually separate buildings, above ground; and if kept clean, quite sanitary and fit for the purpose. The number now on the register is 123, of which 14 are bakehouses. All the premises have been inspected, and their sanitary arrangements, ventilation, lighting, and regular cleansing is supervised. During the year 105 inspections were made and 19 defects discovered; all of which have been remedied. No prosecutions were necessary.

Water Supply.—Twenty-three of the Townships in the Rural District have a constant service of good water. Services are extended as occasion requiries. An additional supply has been secured for Barnton, a Township which is increasing rapidly in size. Borings for water are now in progress at Wimboldsley, where the need for a public supply is great.

There arises much difficulty in dealing with out-lying farms when the only supply is from shallow wells. If any suspicions are aroused in connection with these, samples are taken and analysed. Seven samples were analysed in 1904. Of these, 4 were certified as good, 2 as bad (new wells for new houses not accepted) and 1 as supsicious. In one instance typhoid contamination was strongly suspected. A sample of this water was submitted to Professor Delépine, of the Victoria University, for bacteriological examination. The report furnished conclusive evidence of contamination and the well was closed.

New Houses.—Thirty-one new houses have been certified as fit for occupation. Fifty-six plans for new houses and 4 other buildings have been approved. The total number of houses in the District at the end of the year was 4,507.

Houses Unfit for Habitation.—During 1904 the Medical Office of Health condemned 16 houses, as unfit for habitation. Ten of these have since been put in proper order, 2 are being dealt with and 4 were demolished.

Sewage Disposal.—The sewage of Winnington is now being efficiently treated at the outfall works of the Northwich Urban District Council. New outfall works have been planned for Barnton, and the plans are now before the Local Government Board. At Lostock Gralam considerable improvements have been made during the year. The population of both these villages has increased considerably during the last 2 years. All Sewage-works in the District have been maintained in efficient operation.

Refuse-removal.—The villages of Lostock Gralam, Wincham, Anderton, Weaverham, Barnton, Davenham, Marston, Left-

wich, and Moulton, are scavenged by the Council's contractors weekly.

District Inspection.—Systematic inspections have been made, from time to time, of the various Townships, and as a result of these inspections many nuisances have been got rid of.

Nuisance Abatement.—Statutory notices to abate nuisances at 16 dwelling-houses have been issued and complied with. However, most of the nuisances discovered or reported are abated without formal notices. On the larger estates in the District it is only necessary to bring the fact of the nuisance under the notice of the agent to insure its abatement.

Slaughter-houses.—There are 20 on the register, but several are not at present in use. They have been inspected, and are kept clean and regularly lime-washed.

Canal Boats.—Fifty-two boats have been duly inspected. Twenty-two instances of infringement of the provisions of the Canal Boats Acts, or the Regulations thereunder, have been dealt with. Defects pointed out have been remedied.

RUNCORN

Rural District.

Medical Officer of Health—Dr. J. Adams.
Population at Census on April 1st, 1901, 23,244.
Estimated Population in middle of 1904—24,130.
Area in acres—49,159.
Birth-rate per 1,000 living—26.7.
Death-rate per 1,000 living—15.9.
Death-rate from seven principal Zymotic Diseases—1.8.
Deaths under one year to 1,000 births—136.

The population of this Rural District was 23,244 at the Census in 1901, and the population of the corresponding area was 23,918 at the Census in 1891. The decrease in the population during the decennium 1891-1901 was thus 674, that is 2.8 per cent. The estimate of the population made for the middle of 1904 appears rather high.

The District has, for registration purposes, been divided into three Sub-districts. These are as follows :—

1. Budworth, having an area of 24,160 acres, includes Great Budworth, Seven Oaks, Antrobus, Crowley, Higher Whitley, Lower Whitley, Bartington, Stretton, Stockton Heath, part of Appleton, part of Walton Inferior, Walton Superior, Acton Grange, Moore, Keckwick,

Hatton, Daresbury, Newton-by-Daresbury, Preston-on-the-Hill, Dutton, part of Latchford, Grappenhall, and Thelwall.

2. Runcorn, having an area of 9,174 acres, includes Aston Grange, Aston-by-Sutton, Sutton, Stockham, Norton, Halton, Weston, and Clifton.

3. Frodsham, having an area of 15,825 acres, 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 1904 was 645. The number of deaths registered in the whole District in 1904 was 398. From this gross total of deaths must be deducted 14 deaths of persons belonging to Runcorn Urban District, which occurred in the Union Workhouse at Dutton, 2 deaths of persons not belonging to Runcorn Urban District, at the Liverpool Sanatorium, Kingswood, and 4 other deaths of strangers, leaving 378. As there were 8 deaths of residents in Public Institutions beyond the District, the number of deaths belonging to the District was 386. The birth-rate was 1.1 below the average in the District in 1894-1903, and the death-rate was 1.3 above the average in the District in 1894-1903.

Of the 386 deaths belonging to the District 6 were "uncertified" and 36 formed the subject of Coroner's inquests.

The causes of death, as ascertained at Coroner's inquests, were briefly as follows :—

Natural Causes	7
Heart Failure	1
Drowned	16
Suicides—Hanging	1
" —Drowning	1
Found Dead	2
Poisoning (accident)	1
Suffocated	3
Run over	2
Other Accidents	2

Deaths from Zymotic Diseases.—The number of deaths due to the principal zymotic diseases was 45, viz. :—13 measles, 12 whooping-cough, 8 diphtheria and membranous croup, 3 enteric fever, and 9 diarrhœa. This gives a zymotic death-rate of 1.8 per 1000 living. There were also 6 deaths from epidemic influenza, 1 from puerperal fever, and 2 from erysipelas.

Cases of Infectious Disease Notified.—There were 228 notifications of infectious disease in 1904, viz. :—3 small-pox, 50 diphtheria, 101 scarlet fever, 10 enteric fever, 1 puerperal fever, 15 erysipelas, 47 chicken-pox, and 1 anthrax.

A tabular statement of 62 outbreaks of infectious disease is given by the Medical Officer of Health in his Report, which shows the result of his investigations in respect of the most important cases notified.

Infant Mortality.—As 88 of those who died in 1904 were infants under a year old, the deaths of infants were equal to 136 per 1,000 births In 1894-1903 there were 119 deaths of infants under a year old to each 1000 births.

The principal causes of death amongst infants in 1904 were as follows:—5 measles, 7 whooping cough, 1 diphtheria, 2 influenza, 7 diarrhœa, 4 enteritis, 5 tubercular disease, 8 bronchitis, 5 pneumonia, 1 other respiratory disease, 16 premature birth, and 1 accident.

Isolation Hospital Accommodation.—The Hospital at Moore is still retained and kept in readiness for the isolation of any cases of small-pox occurring in the District. In the Report for 1903, it was stated that a hospital for infectious disease, other than small-pox, had been planned, and that the plans had been submitted for approval of the Local Government Board, and that a suitable site had been obtained. Progress was made in the erection of this hospital in 1904, and it was nearing completion at the end of the year.

The Steam Disinfector.—The Medical Officer of Health draws attention to the fact that the disinfector (Washington Lyon's) only remains on its present site, near the Small-pox Hospital, during the pleasure of the Manchester Ship Canal Company. Fifty-seven lots of bedding and clothing were disinfected therein during the year.

The Disinfection of Premises.—A special Report on this subject was submitted in 1903, recommending the practical abandonment of "sulphur fumigation," except for special cases, and proposing the adoption of spraying by formalin, or a strong solution of hypo-chlorite of lime, obtained from bleaching powder. The Council adopted the suggestions, and this method has now been in operation for a year and some months. The apparatus has proved very efficient and satisfactory, and will certainly result in more efficient disinfection of infected premises.

Water Supply needed for Hospital and Disinfector.—The Manchester Ship Canal Company have some time since removed their water-tank, which supplied the Hospital and disinfecting apparatus, so all the water required has to be collected from the Hospital roof or carted for a considerable distance.

Small-pox.—The first notification of small-pox received in 1904, was on September 21st. It appeared that two people in

Dutton had been visiting at a house in Northwich Rural District where "contacts" had been lodged, and these two subsequently developed small-pox. By the end of the day on which notification was received, the two patients and a nurse were removed to hospital. Prompt measures were also taken to prevent spread of the disease. All "contacts" were re-vaccinated, their clothing disinfected, and the houses where they lived practically quarantined. Bedding, etc., were sent to the disinfecting station. No extension of the disease took place at Dutton; but on November 22nd the son of the caretaker at the Moore Hospital, who had persistently declined re-vaccination, was found to be suffering from small-pox, and at once removed to hospital. Similar measures to those previously referred to were taken to prevent the spread of infection, and no extension of disease took place. The convalescence of the last case was greatly delayed by carbuncles, which at one time threatened the patient's life. The Hospital was open for 16 weeks for the treatment of these three cases

Of the 3 cases, one was well-vaccinated (in infancy only), and had a mild attack of modified discrete small-pox; the second case was a girl of 16, who had *not* been vaccinated in infancy; she had a very severe attack of confluent small-pox, hæmorrhagic in type, and for a week or ten days she gave no promise of the recovery which ultimately took place. The third case had very faint vaccination cicatrices from infancy, and had a very severe fight for life. Thus an outbreak of small-pox has again occurred without loss of life, as in 1903.

During the year the Medical Officer made several special visits, by request, to cases where the diagnoses seemed uncertain; these, on investigation, all proved to be chicken-pox

Measles.—This disease is not notifiable in the District; it has, however, been prevalent during the year, especially in Frodsham and Budworth Sub-districts. In the former Sub-district 5 cases were fatal, and in the latter Sub district 8 cases.

Whooping-cough is also not notifiable. In 1904, as in 1903, it was very prevalent. It caused 6 deaths in Runcorn Sub-district, 4 in Budworth Sub-district and 2 in Frodsham Sub-district.

Diphtheria.—As already stated, 50 cases were notified. Eight proved fatal. This is a bad record. In the ten years 1894-1903 the cases and deaths were as follows:—

In 1903...27	cases,	2	deaths.	In 1898...48	cases,	2	deaths
,, 1902...35	,,	7	,,	,, 1897...43	,,	3	,,
,, 1901...44	,,	8	,,	,, 1896...43	,,	9	,,
,, 1900.. 17	,,	6	,,	,, 1895...16	,,	2	,,
,, 1899...37	,,	2	,,	,, 1894...18	,,	2	,,

Thus the average for ten years was 32.8 cases and 4·3 deaths.

Runcorn R. D.

During 1904 the worst record was from the Township of Frodsham, where 12 cases occurred, and 3 were fatal.

The Medical Officer of Health remarks on the tendency of diphtheria to re-appear in the same houses, or to attack patients previously affected. One of the cases notified in 1904 was a woman suffering for the fifth time—once in each of five consecutive years. About the same time two other cases occurred in adjacent properties.

Not any of the outbreaks were associated with specially defective sanitation, and many of the cases were undoubtedly caused by direct infection from one case to another. The Medical Officer of Health is of opinion that much of the recurrence of the disease would be obviated if all cases were treated with local disinfection of the throat, &c., for a fairly prolonged period after recovery had taken place; and, in fact, until bacteriological examination of a swab from the affected part indicated the absence of the diphtheria bacillus.

It is a common notion that diphtheria is generally due to drains, sewers, or offensive effluvia of various sorts, but it is far more probable that most cases are derived from other patients, whose convalescence is established, but whose air passages may still be swarming with diphtheria bacilli.

Enteric Fever.—Of the 10 cases notified, 3 were fatal in 1904, 1 terminated in death in 1905, but this is not included, of course, in the mortality returns. The record in 1904, it will be seen, compares favourably with the record of recent years.

In the 10 previous years, the record has been as follows:—

In 1903 ...	1 case, no death				In 1898 ...	6 cases, 1 death			
,, 1902 ...	13	,,	4	,,	,, 1897 ...	8	,,	1	,,
,, 1901 ...	27	,,	4	,,	,, 1896 ...	10	,,	1	,,
,, 1900 ...	15	,,	1	,,	,, 1895 ...	10	,,	0	,,
,, 1899 ...	14	,,	3	,,	,, 1894 ...	18	,,	7	,,

or, an average of 13.2 cases, with 2.5 deaths, for the preceding 10 years. Two deaths occurred at Halton, and one at Grappenhall.

Examination of Morbid Products.—Towards the close of the year 1902 the Medical Officer of Health suggested that the District Council should make application to Professor Delépine to include this district in the scheme for having products from cases of diphtheria, enteric fever, etc., examined at the Public Health Laboratory, Victoria University, Manchester, and this had been done. Such products are now examined and reported on by Medical practitioners free of cost.

Epidemic Influenza.—This disease is not notified; 6 deaths occurred, 3 in Runcorn sub-district, and 3 in Budworth sub-district.

Phthisis and other Tubercular Diseases.—There were 19 deaths from phthisis, and 15 from other tubercular diseases. The phthisis death-rate was, therefore, 0.78 per 1,000 living. The death-rate from all tubercular diseases was 1.4 per 1,000 living.

Cancer, or Malignant Disease.—Eighteen deaths were attributed to cancer, that is 0.74 per 1,000 living.

Water Supply.—Runcorn, for a Rural District, is, in the opinion of the Medical Officer of Health, exceptionally well supplied from excellent public sources, derived partly from adjoining urban supplies and partly from Water-works constructed within the district. These supplies (five in number) are distributed over the District, approximately, as follows :—

(*a*) The Liverpool Vyrnwy Water Scheme supplies at present the township of Sutton, and a portion of Aston. In view of the approaching completion of an Isolation Hospital at Dutton the supply from this source has been extended to the Hospital. The extension was made in 1904 to Preston-o'-th'-Hill and Preston Brook, and by means of it 42 houses received the new water supply, and, as they abut close on the line of the main, it is hoped that about 17 other houses may shortly be supplied from this source. In Aston Township 10 houses have received this new supply. The Union Workhouse, while possessing an excellent water supply for drinking purposes, has however had the Liverpool water laid on for the purpose of enabling it to deal with an outbreak of fire, the existing supply being moderate only in amount, and low in yield. By this extension to Preston Brook, the Liverpool Water practically meets the Warrington water from the other side of the district which comes as far as Daresbury, the adjoining township.

(*b*) The Warrington Corporation Water-works has extended its mains into the Rural District so far as now to supply the whole of Stockton Heath, Walton Inferior (with the exception of a few houses), Walton Superior, Moore, a portion of Acton Grange, the greater part of Daresbury, Latchford Without, Thelwall, and a portion of Grappenhall. The remaining portion of Grappenhall is supplied by a private water-works belonging to one of the principal owners, and erected at his own cost.

In 1904 the Warrington mains were extended to Higher Stretton, where about a dozen houses and farms have been supplied. The other portion of Stretton may be supplied by a further extension.

(*c*) The Frodsham and Frodsham Lordship Water-works supply Frodsham and Frodsham Lordship, the latter township including the Hamlets of Overton, Five Crosses, Bradley,

Netherton,' and Woodhouses. These works are doing satisfactorily. No extensions were carried out in 1904.

(*d*) The Helsby and District Water Company at present supplies practically the whole of Helsby, and it is hoped, when the District Council become the proprietors of this supply, that its further extension to Alvanley will be considered.

(*e*) The Runcorn Urban District Council at present supply the townships of Weston and Halton, but re-arrangements are under consideration. The unsatisfactory nature of this water has been complained of, and it is proposed to supply these two townships from the Liverpool mains.

Thus the most important and populous portions of the Rural District are supplied, or about to be supplied, with excellent water. The purely rural localities have to rely upon local supplies chiefly derived from wells. Of the townships still without an efficient public supply, reference may be made to three.

Norley.—A public enquiry was held during the summer of 1904, in reference to the proposal to supply the Blakemere Lane portion of Norley with the Liverpool Vyrnwy water. Strong opposition to this plan was manifested on the part of influential residents, and an expressed desire was for the first time made known to the Medical Officer of Health, to include the entire Township of Norley in any scheme which should involve the expenditure of public funds. It was therefore resolved that all the existing water supplies and available sources of water supply in Norley be analysed, previous to any scheme being decided on. In compliance with this resolution, 29 of the existing water supplies or possible sources of supply were analysed during 1904, and the early weeks of 1905, and of these, to summarise the results, only one water is returned as "a first-class water," that coming from the running pipe at Stanney Brook; another from Forest Well, off Blakemere Lane, is returned as "a good water, fit for domestic use," one to Schoolmaster's house, "a very good water," 3 or 4 others "fairly good," and the rest vary from "not good," "doubtful purity," "should be filtered," and so on, to "a bad water," "not fit for domestic use." Of the latter no less than 18 were discovered, which up to the present time have been usable, if not used, by the population of Norley. It is surprising that in a beautiful Township like Norley, far removed from polluting towns or manufacturer's waste, with nothing else to pollute its waters beyond its scattered farms and sparsely sprinkled residences, there should be no less than 18 out of 29 drinking waters "not fit for domestic use," and it specially emphasises previous recommendations of the Medical Officer of Health, that the water supply to Norley should be improved. A water-engineer of repute, has been instructed, and has prepared alternative schemes showing respectively the cost of (a) the adoption of the Liverpool Vyrnwy water, and (b) the utilization of the excellent water from the running

pipe at Stanney Brook already alluded to. A decision on this matter should shortly be taken.

Bartington.—This supply has not yet been improved, in conseqence of some engineering difficulties of an unexpected character, occurring in the course of the projected improvements. but it is anticipated that these difficulties will be overcome early in 1905.

Appleton.—As the extension of the Warrington water mains to Stretton implies their being laid through Appleton, the portion of Appleton abutting on the extension may thus be provided with Warrington water. No houses or farms at Appleton were thus supplied in 1904.

There is, of course, great difficulty in obtaining efficient supplies for so large a District, and so scattered a population. Still, it is for the Sanitary Authority to ensure that as good a supply of drinking-water as is obtainable should be brought into every dwelling house, and the Medical Officer of Health accordingly suggests that the District Council should direct that a systematic examination of drinking-waters be undertaken, irrespective of complaints or of notified cases of disease. Much has been done in past years, and up to the end of 1904 as many as 682 samples of supplies have been analysed. Still, much more remains to be done in this respect.

The number of water-certificates for new houses, granted by the Council, during the year 1904, was 35. There were 106 houses occupied under such certificates.

Sewerage and Sewage Disposal.—The Helsby sewerage works and sewage-disposal arrangements, which were completed in 1903, have since been in operation, and appear to be working satisfactorily. Many houses have been connected with the sewers, but several still remain unconnected.

At Halton, the scheme referred to in the Report for 1903 has been adopted, and negotiations have been opened with Runcorn Urban District Council, with a view of connecting Halton to the town system of sewerage. This may ultimately prove the best solution of the Halton difficulty.

No further public sewerage works were proposed during 1904.

The Medical Officer of Health points out that extensive sewerage works are not applicable to scattered rural districts, but much good work may be accomplished by the construction of small installations of septic tanks and filter beds, and sufficient sewers thereto, rather than allow drainage into ditches and water-courses.

Rivers Pollution.—From what has been stated above, it will be seen that the pollution of Halton Brook is being dealt with.

As regards the pollution of the Iron Dish Brook, the Helsby Sewage Disposal Works should effectually deal with this. With reference to Kingsley Brook, the pollution is certainly less than it was some years since. This matter still has the attention of the Authority.

Refuse Removal.—The Authority do not undertake the collection and disposal of excremental and other refuse in any part of their District, except at Stockton Heath, and here the work is not done very efficiently. Stockton Heath continues to develop as a semi-urban district, and it is necessary that the systematic removal of night-soil and ashes, should be properly supervised. Elsewhere, not excepting Frodsham, the emptying of middens, and removal of refuse, is arranged for by occupiers, or owners, or both combined. They have to dispose of the refuse as best they can, and in many cases this is a matter of great difficulty. Weston, among other townships, requires a good system of refuse removal.

Wherever possible a pail containing dry earth, should be substituted for the pit containing ashes, refuse, and rainwater, which is usually in evidence. A mixture of earth and excreta forms a valuable manure, but a mixture of ashes, tins, broken crockery, rubbish, and rain and excreta, is of no value to anyone.

Building Bye-laws.—Those lately adopted at Halton are in force. Further revision of the bye-laws for Stockton Heath is proceeding.

The Private Street Works Act has been adopted for Stockton Heath, and the portion of Appleton in the Rural District.

The Inspector (Mr. Jas. Farrington) furnishes information as to matters coming under his supervision.

Nuisance Abatement.—Formal notices were served for the abatement of nuisances when this appeared necessary, but the abatement of many other nuisances was obtained without the serving of notices. A large proportion of the nuisances reported or discovered were in connection with defective sanitary accommodation. At 26 houses drainage improvements in the back-yards have been effected. Four cases of overcrowding were dealt with.

Legal proceedings were taken in 6 ceses, and convictions btained. In 5 instances the offence charged was allowing the chimney to be on fire, and in the remaining case the offence was the nuisance of overcrowding.

Factory and Workshop Act.—The Medical Officer of Health and Inspector have visited and inspected the bake-houses, workshops, etc., in the District, and a register has been compiled. All the requirements of the Act have been carried out. The residences of the out-workers have been inspected and found in

good sanitary condition. There are no underground bake-houses in the District.

Lodging-houses have been visited from time to time by the Inspector.

Dairies and Cowsheds.—The persons registered to carry on the trade of dairymen and cowkeepers number 177. The premises are inspected from time to time, and steps taken to make them as sanitary as practicable. Several cowsheds have been improved during the year, and others are being improved.

Unsound Meat.—In the course of the year the Inspector examined 10 carcases of meat to see if they were unsound, or any part of them. All were passed.

Slaughter-houses were duly inspected; three licences were renewed.

Offensive Trades.—No complaint appears to have been made in 1904 of effluvia from premises in which offensive trades were carried on.

Canal Boats.—The number of boats inspected in 1904 was 21, all conformed to the Canal Boats Acts and Regulations made thereunder. On board the boats inspected were 12 women, 4 children, between 5 and 12 years of age, and 11 children under 5 years of age.

TARVIN

Rural District.

Medical Officer of Health— Dr. G. A. Kenyon.
Population at Census, on April 1st, 1901—12,614.
Estimated Population in middle of 1904—12,572.
Area in acres—56,874.
Birth-rate per 1,000 living—25.0.
Death-rate per 1,000 living—13.7.
Death-rate from seven principal Zymotic Diseases—0.7.
Deaths under one year to 1,000 births—92.

The population of Tarvin Rural District was 12,614 at the Census in 1901, and 12,703 in the corresponding area at the Census in 1891. The decrease in the population during the decennium in 1891-1901 was thus 89. The estimate of the population made for the middle of 1904 is, therefore, a little lower than the Census population.

This large Rural District is not divided into sub-districts, but it includes no less than 58 Townships. These

are as follows:—Broxton, Tilston, Horton, Grafton, Carden, Stretton, Caldecutt, 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, Clotton Hoofield, Dutton, Willington, Kelsall, Ashton, Mouldsworth, Horton-with-Peele, Tarvin, Hockenhull, Pryors Hayes, Barrow, Guilden Sutton, Cotton Edmunds, Cotton Abbotts, Rowton, Huntington, Tiverton, Tilstone Fearnall, Beeston, Burwardsley, Shocklach Church, and Shocklach Oviatt.

In 1904, the number of births registered in the District was 315, and the number of deaths (including 12 occurring outside the District among persons belonging thereto) was 173. The birth-rate is 0.3 below the average in the ten years 1894-1903, and the death-rate is 0.3 below the average in the same ten years.

There were 9 deaths from the principal zymotic diseases, viz.:—3 whooping-cough, 1 diphtheria, 2 enteric fever, and 3 diarrhœa. There were 3 deaths from epidemic influenza, 5 from enteritis, and a death from puerperal fever. There were 13 deaths from phthisis, 2 from other tubercular diseases, 16 from cancer, 27 from bronchitis, pnuemonia, or other diseases of the respiratory organs, 3 from alcoholism or cirrhosis of the liver, 5 from premature birth, and 15 from heart diseases.

Four of the deaths occurred in the Chester Infirmary, 1 in the County Asylum, 2 in Chester Fever Hospital, and 5 in the Workhouse.

Cases of Infectious Disease Notified.—There were 34 cases of infectious diseases notified, viz.:—8 diphtheria, 1 membranous croup, 12 scarlet fever, 5 enteric fever, 1 puerperal fever, and 7 erysipelas. Of these 2 cases of diphtheria, 2 of enteric fever, and 1 case of scarlet fever, were isolatd in the Chester Fever Hospital. Care was taken to isolate the other cases as well as possible. Each household attacked was visited, and disinfection was attended to. Children from infected houses were kept from school. Where required, action was taken for the remedy of structural defects on premises.

Three of the scarlet fever cases occurred in one house, and 2 in another house. The other cases of infectious disease were distributed over different parts of the District, and scattered over the year. There was thus no general spread of infection.

Isolation Hospital Accommodation.—In consequence of the impossibility of making a permanent arrangement with

the Chester Authorities for the reception of infectious cases, it has been found necessary to take steps for making fresh Hospital provision for the District. With this object the District Council, in conjunction with Tarporley Urban District Council and Malpas Rural District Council, have made application to the Local Government Board, and obtain the formation of a Joint Hospital District.

The Joint Hospital Board have selected a site for a Hospital, and this site has been inspected and approved by the Medical Officer of Health, and the County Medical Officer. It is a good site and conveniently central. It cannot be acquired except by means of a Provisional Order, which is being applied for.

Inspection.—The Medical Officer of Health has visited the District from time to time for the investigation of cases of infectious disease and general inspection, and has advised thereon as to points of detail in connection with sanitary work. He has also given advice with regard to the sewerage schemes for the District.

Water-supply.—Aldford, Churton, and Saighton are supplied with water from the Wrexham Water Works, the mains having been extended by the late Duke of Westminster, who also caused Waverton to be supplied with water from a well, the water being raised by a windmill.

The village of Ashton has been supplied with water by the owners of the estate, by a gravitation scheme. The water is obtained from springs in Delamere Forest.

At Harthill and Kelsall there are gravitation supplies from wells, provided by the owners of property for their tenants.

The Townships of Tiverton, Tilstone, and Beeston, have an excellent public supply from deep wells. There has been a greater demand for this water than was anticipated, so that, though there has been no diminution in the flow of water, some addition has become necessary to the means for utilizing it. Either another borehole, or further storage, seems to be needed.

In other places, the general supply is from ordinary wells. From some of these ordinary wells six samples of water were, during the year, brought to the Medical Officer of Health for analysis. Two were found very good, and 2 fairly good. Advice was given accordingly. A sample of water supply for a dairy farm was referred to the Public Analyst, and passed as good.

Tarvin Village is dependent upon ordinary wells for water. One of these wells (that at the top of the village) was constructed by the Rural Sanitary Authority. There is a

second public well at the other end of the village. The water yielded by both wells is of good quality. There are other wells in the village yielding good water, and some water which is not good. All these Tarvin wells are, of course, in some degree liable to pollution, and several efforts have been made in past years to introduce a pure supply from without. This would not only be safer as regards health, but would save much labour in pumping and carrying. Some of the local ratepayers are anxious for a proper water supply, but a large proportion resolutely oppose incurring the necessary expense.

Sewerage and Sewage-treatment.—The District being thinly populated, and not having many large villages, there are few sewers, and water-closets are comparatively rare.

Works for the purification of the sewage of Aldford, constructed by the late Duke of Westminster, commenced working during the year 1899. Works for the purification of sewage have also been constructed at Eccleston Ferry. At the Aldford Works the "International" process was made use of, but they underwent reconstruction in 1903.

At Eccleston Ferry the Scott-Moncrieff process has been adopted—the sewage passing through a septic tank, and then through trays of filtering material.

Plans have been prepared for the purification of sewage at Tattenhall, Tarvin, and Barrow, but the District Council have not yet received sufficient support to enable them to proceed with these.

Little, if any, progress was made in 1904 with the various sewage schemes previously reported as under consideration. Delay is not altogether lost time, as progress is made yearly in methods of dealing with sewage. However, at Barrow there are serious complaints of pecuniary damage, from want of proper outfall works. It is very desirable that these works should be proceeded with—the land required seems to have been arranged for.

Ashpits, &c.—Throughout the District most of the houses are provided with ashpits and privies. These, in some instances, are emptied at short intervals, the contents being used on adjoining land, but generally the emptying awaits the convenience of neighbouring farmers. The District Council have aimed at getting the privies modified so as to approximate as much as possible to earth-closets, and much has been done in this direction.

Reports of Inspectors.—The arrangements under which the duties of Inspector of Nuisances are undertaken by the two Surveyors to the District Council, continues to work well in this large District; and progress is being made in removing

conditions injurious to health. Mr. Piggot makes a detailed and careful report of his work as Inspector of Nuisances. He reports that 119 houses, premises, etc., have been inspected, and 11 orders issued for the sanitary amendment of houses. Three houses have been cleansed or repaired, drains in 10 houses have been repaired, cleansed, etc., and 4 privies have been converted into dry earth-closets. Mr. Carter also makes a careful and detailed report of his work as Inspector of Nuisances. He reports that 137 houses have been inspected, and 10 orders issued for the sanitary amendment of premises. Twenty-three houses have been cleansed, repaired, whitewashed, etc., drains in 16 houses have been trapped, repaired, etc., and 5 privies have been made into dry earth-closets. Four new wells have been sunk and 5 pumps repaired.

Dairies, &c.—Model regulations made under the Dairies, Cow-sheds, and Milkshops Order came into force on January 1st, 1900. Seventy premises registered for the sale of milk have been inspected.

Factory and Workshops Act, 1901.—In Mr. Piggott's division of the District 5 bakehouses and 11 other premises are placed on the register, and regularly inspected. In Mr. Carter's division of the District, 7 bakehouses and 5 other premises are placed on the register, and regularly inspected.

Slaughter-houses.—There are 15 slaughter-houses under regular inspection.

TINTWISTLE

Rural District.

Medical Officer of Health—Dr. W. E. S. Burnett.
Population at Census, on April 1st, 1901—2,105.
Estimated Population in middle of 1904—2,095.
Area in acres—13,621.
Birth-rate per 1,000 living—19.5.
Death-rate per 1,000 living—14.3.
Death-rate from seven principal Zymotic Diseases—3.3.
Deaths under one year to 1,000 births—170.

This Rural District contains part of the Township of Tintwistle, and the whole of the Townships of Hattersley and Matley. The area is given as follows: —

	Area in Acres.
Part of Tintwistle	11,856
Hattersley	1,060
Matley	705

Tintwistle R. D.

The area, exclusive of moorland, is returned as 4,646 acres.

The population of this Rural District was 2,576 at the Census in 1891, and 2,105 at the Census in 1901. Thus during the decennium 1891-1901, there was a decrease in the population of 471.

This is due to the compulsory removal of a number of families from the District, owing to the small extent of work now carried on in two large cotton factories which stopped a few years ago. These unfortunate events have pauperised the once prosperous village of Tintwistle. There were 90 empty houses in the District at the time of the Census, and 81 of these were in this village. The population of Hattersley and Matley slightly increased between the Census of 1891 and the Census of 1901.

The population of the whole District has slightly decreased since the Census in 1891, owing to the departure of families from want of employment. Numerous stoppages and short time, during the latter part of 1903, have caused much poverty and distress.

In 1904, the number of births registered in the District was 41, and the number of deaths registered in the District (including 2 deaths of persons belonging to the District registered elsewhere) was 30. The birth-rate is about 4.1 below the average in 1894-1903, and the death-rate is about 0.5 below the average in the same ten years.

Infant Mortality.—Seven deaths were of infants under a year old, a number equal to 170 per 1,000 births. In the last ten years, 1894-1903, the deaths of infants under a year old was equal to 125 per 1,000 births. The registered causes of the 7 deaths were as follows:—Measles 2, enteritis 1, meningitis 1, congenitl debility 1, and convulsions 2.

Inquests.—The Coroner held inquests on two occasions. The first was on the body of a platelayer accidentally run over by a railway engine, and the second was on the body of a child who had eaten some orange peel picked up in the road. The Coroner's jury found the child's death was due to "ptomaine poisoning."

Infectious Disease Notified.—There were 4 cases of infectious disease notified, viz.:—3 of scarlet fever, and 1 of erysipelas. The 3 cases of scarlet fever occurred at Hattersley in September, the case of erysipelas occurred in the village of Tintwistle in December. The first case of scarlet fever was that of a boy infected by a school-fellow from Mottram, and he infected his sister. As all 3 cases occurred at farm houses, stringent precautions were taken, to avoid any

risk of spreading the disease by the agency of milk. The little house where the case of erysipelas occurred was one of a row of cottages, with an old stone drain under the floor. The drains to all these cottages are to be re-constructed, glazed pipes being used.

Measles.—The Tintwistle portion of the District had been remarkably free from this disease for a great many years. At the end of December, 1903, a few cases broke out among the children attending the Church Sunday School, the infection in the first instance having been brought by a child from Hadfield attending this school. When the school was re-opened for day scholars after the Christmas holidays, the disease spread rapidly among the children, and the attendance at school was quickly reduced. The school was closed from January 18th to February 22nd. None of the scholars attending the British School, in the higher part of the township, were affected at the beginning of the outbreak, but the disease soon reached them, and became epidemic. This school was also closed on the 28th January for a fortnight.

Preventing the Spread of Infectious Disease.—On receipt of notification of infectious disease the premises are examined, and where defects are found the owners are served with notices to remedy them. The patients are isolated, as far as possible, and their clothes and bedding disinfected. The parents of children suffering from infectious disease are given printed papers specifying the precautions which should be observed in each case, and are instructed to prohibit all other members of the family from attending school, and other people's children from entering the infected house until all risk of infection is over. Information is also given to the schoolmaster.

Isolation Hospital.—The Small-pox Isolation Hospital was erected in 1903, and ready to receive patients in October. It is provided jointly by Hollingworth and Mottram Urban Districts and Tintwistle Rural District. A nurse has been appointed, and a suitable ambulance has been obtained.

Water Supply.—This is of good quality and plentiful.

Dairies, Cowsheds, &c.—These have been visited and generally found clean and in good order, but in some instances more light and better ventilation has been suggested and provided. In several cases defective drains have been put in order. Regulations under the Dairies, Cowsheds, and Milkshops Orders were made by the District Council on August 8th, 1901, and came into force on October 1st. Dairy cattle in Rural Districts are usually turned out of the sheds in the day time all the year round, unless the weather is exceptionally bad, and are better off as regards plenty of fresh air than those kept in sheds in, or near, large towns.

The Factory and Workshop Act, 1901, came into operation at the beginning of the year 1902. There are 11 premises which come within the operation of this Act, viz: 1 factory, 4 ordinary workshops, and 6 domestic workshops. They have all been visited, and found clean, well ventilated, and in good order. Considerably more air-space is allowed than the Act requires. There are no underground bakehouses.

Refuse Removal.—The routine work of emptying ashpits, &c., has been properly done, under the supervision of the Inspector.

Nuisance abatement.—All nuisances complained of or discovered have had attention. In course of abating nuisances many structural improvements have been effected. There have been 300 yards of new drains laid.

Inspection.—The Medical Officer of Health and Inspector have made frequent inspections in the District, and where sanitary defects have been observed, action has been taken to remedy them.

There are no offensive trades carried on in the District, and there are no common lodging-houses.

WIRRAL.

Rural District.

Medical Officer of Health—Dr. G. A. Kenyon.
Population at Census, on April 1st, 1901—14,017.
Estimated Population in middle of 1904—15,000.
Area in acres—37,594.
Birth-rate per 1,000 living—23.2.
Death-rate per 1,000 living—11.0.
Death-rate from seven principal Zymotic Diseases—0.4.
Deaths under one year to 1,000 births—89.

The population of this Rural District was 18,629 at the Census in 1891, and 18,099 at the Census in 1901. The decrease in the population during the decennium 1891-1901 was thus 530, that is 2.8 per cent. The decrease is due to the fact that among those enumerated in 1891 at Whitby, Netherpool, Hooton, and Eastham, were 2,432 persons engaged in the construction of the Manchester Ship Canal, who formed no part of the local population after 1892. The normal population of Wirral was therefore considerably increased between 1891 and 1901.

On April 1st, 1902, part of this Rural District (viz.: Whitby Civil Parish) was constituted Ellesmere Port and Whitby Urban District. The area of the Rural District was thus reduced

by 1,261 acres, and the Census population was thus reduced by 4,082 persons. The Census population of the reduced District was therefore 14,017, and the population for the middle of the year 1904 is estimated to be 15,000, for upwards of 160 newly-built houses have come into occupation since the date of the Census.

The District has for registration purposes been divided into four sub-divisions, viz. :—Neston, Eastham, Bebington, and Woodchurch. Till quite recently the District had but three sub-districts, Brimstage, Poulton-cum-Spital, and Storeton (now constituting the sub-district of Bebington) being part of the sub-district of Eastham. Regarding Neston and Bebington as one sub-district, the sub-districts are as follows :—

1. Neston, having an area of 12,113 acres, includes Burton, Gayton, Heswall-cum-Oldfield, Ness, Puddington, Raby, Thornton Hough, and Willaston.
2. Eastham, having an area of 10,840 acres, includes Childer Thornton, Eastham, Great Sutton, Hooton Ledsham, Little Sutton, Netherpool, Overpool, Brimstage, Poulton-cum-Spital, and Storeton.
3. Woodchurch, having an area of 12,598 acres includes Arrowe, Barnston, Caldy, Frankby, Grange (part of) Greasby, Irby, Landican, Moreton, Pensby, Prenton, Saughall Massie, Thingwall, Thurstaston, Upton-by-Birkenhead, and Woodchurch.

To the Rural District, as thus constituted, must be added what as been till lately the Rural District of Birkenhead. This consists of Bidston-cum-Ford, having an area of 1,713 acres, and Noctorum, having an area of 330 acres.

The number of births registered in Wirral Rural District in 1904, was 348, The number of deaths registered in Wirral Rural District in 1904 (excluding 32 deaths occurring within the District among persons not belonging thereto, and including eight deaths of residents registered elsewhere) was 166. The birth-rate is 3.1 below the average of the ten years 1894-1903 in the District, including Whitby Civil Parish. The death-rate is 1.7 below the average of the same ten years in the District, including Whitby Civil Parish.

There were 7 deaths from the principal zymotic diseases, viz. : 1 measles, 3 scarlet fever, 2 whooping-cough and 1 diarrhœa. There was one death from puerperal fever. There were 2 deaths from enteritis, 15 from phthisis, 5 from other tubercular diseases, 9 from cancer, 9 from bronchitis, 18 from pneumonia, 2 from alcoholism or cirrhosis of the liver, 5 from premature birth and 14 from heart diseases.

Infectious Disease notified.—There were 91 cases of inspectious disease notified, viz. : 1 small-pox, 7 diptheria, 69

scarlet fever, 12 enteric fever and 2 erysipelas. Of these, 53 cases were removed to hospital, viz.: 1 small-pox, 6 diphtheria, 39 scarlet fever, and 7 enteric fever.

Small-pox.—The only person who suffered from this disease was the assistant porter on the staff of the Spital Fever Hospital. It is believed that he became infected in connection with some cases that were removed to the Small-pox Hospital from another District, while assisting to burn the patient's bedding. Those who had been in contact with the assistant porter were re-vaccinated and no further cases occurred.

Scarlet Fever.—In 1904, as in 1903, the cases were somewhat numerous. Generally the type of disease has been mild, but in one very localised outbreak the type was severe, and here two cases proved fatal at the outset. All the cases of scarlet fever were kept well under control. They were scattered over the District, but there was no general spread of infection.

Enteric Fever.—The cases were not numerous, and all terminated in recovery. One case was that of a sailor who had just returned from sea with the disease on him. Two other cases were members of the same household, the first not having been removed for sufficient reason. This man went through a long illness, and when recovery was complete, and the house had been disinfected and the bedding destroyed, the second case was notified. This case was removed to Hospital. Three other cases occurred in another house, the first not having been removed. The house was clean and well kept, and had good accommodation for its size. The child first attacked had the disease mildly, but its mother and another child were infected. The two latter were sent to Hospital. A curious instance of recurrence of typhoid fever occurred. A patient took the disease a second time, after an interval of several months, and was a second time removed to Hospital. The other cases had no apparent connection, being at different times and in different places. With two exceptions, they were removed to Hospital.

Action taken to Prevent spread of Infection.—All the houses where infectious disease occurred were visited, removal to hospital offered, disinfectants supplied as required, warnings against spread of infection issued, children kept from school, removal of insanitary conditions attended to, etc. On the termination of a case the premises, bedding, and clothing were disinfected. In the small-pox case and in some other cases it was deemed wise to destroy bedding and clothing.

Isolation Hospital Accommodation.—This, which is provided by the Joint Hospital Board, consists of the Spital Hospital and the Greasby Hospital. Both Hospitals are situated in

the District. The Spital Hospital was much enlarged and improved in 1902. Two new wards, each furnished with 8 beds, and 2 isolation rooms, each furnished with 2 beds, together with kitchen and lavatories, were built, forming an additional pavilion. Three bedrooms and a lavatory were also added to the administrative block. The laundry was enlarged and better equipped. In order to effect this Hospital extension, two acres of land were acquired.

New Disinfecting Apparatus and New Destructor.—A good disinfecting apparatus for disinfecting bedding and clothing by steam, and a destructor contiguous thereto, were provided on the hospital ground in 1902.

Hospital Ambulances.—Two ambulances have been provided for the conveyance of patients.

Covered Vans.—During 1903, a pair of covered vans were built for the carriage of bedding, etc., to the disinfecting apparatus, and for returning the same to the owners.

Hospital Outfall Works.—The Dibdin filter-beds, at the Isolation Hospital, continue to work satisfactorily.

An Auxiliary Hospital.—The Isolation Hospital accommodation was extended during 1903 by the acquisition of a plot of land at Pensby, with a house upon it. The house was put in good repair, and opened lately for the reception of convalescent patients. The land is 7½ acres in extent, and with the building thereon, cost £1,275. Putting the house in order and altering and furnishing the same cost £400. Loans were sanctioned for these two sums, respectively on August 19th, 1903, and on January 13th, 1904.

Inspection.—The Medical Officer of Health has frequently made general and special inspections, and investigated outbreaks of infectious disease. In connection with these inspections he has advised the District Council on various points of detail.

Water-supply.—The District is generally supplied with water from the West Cheshire Water Works, Bidston-cum-Ford and Noctorum are supplied from the Birkenhead Water Works, and Moreton and Saughall Massie from the West Kirby Water Works.

The West Cheshire Water has of late become unduly hard, which causes great inconvenience from the furring up of boiler pipes, and the unsuitability of such water for laundry work. Efforts are being made to get the water softened.

The District is traversed (but receives no supply from) a large pipe conveying water from Vyrnwy to Wallasey.

Sewerage of Fender Valley.—As mentioned in the Annual Report for 1902, the Local Government Board sanctioned a loan of £27 500 for the purpose of carrying out the Fender Valley sewerage scheme. The scheme provides for the construction of an outfall-sewer extending from Barnton to the culvert within the Borough of Birkenhead, and affords an outfall for the sewerage of the Townships of Arrowe, Barnton, Bidston-cum-Ford, Landican, Moreton, Noctorum, Pensby, Prenton, Storeton, Thingwall, Upton, and Woodchurch. The western side of the Township of Oxton, in the Borough of Birkenhead, can also, by arrangement, use this outfall.

This important sewerage work was commenced in the early summer of 1903, and is now completed. It will be ready to convey sewage from the contributory parishes as soon as the sewers of these parishes are finished. Contracts have been let for these contributory sewers in the Parishes of Arrowe, Bidston, Noctorum, Upton and Prenton. Some of these are at present being constructed, while all are intended to be ready in 1905.

An application has been made by the District Council to the Local Government Board for sanction to borrow money for a scheme which will connect Moreton with the outfall sewer.

Sewerage of Childer Thornton, Eastham and Hooton.—To meet the views of the Local Government Board, Messrs. Beloe and Priest, the District Council's Engineers, have prepared fresh schemes for the sewerage of Childer Thornton, Eastham and Hooton; and application for sanction to borrow the sum required to carry out the work was made in 1903. The official Inquiry was held early in 1904, and the sanction was shortly afterwards given. Tenders for carrying out the work have been invited.

The scheme for the sewerage of Eastham Village has also been sanctioned, and tenders to carry out the work have been invited.

Sewerage of Willaston.—There has been much local opposition to the scheme for the sewering of Willaston. The obstacles in the way of obtaining the sanction of the Local Government Board have now been removed. The District Council is expecting to receive the sanction to the required loan forthwith, and they will then be enabled to proceed with the construction of the works.

Sewerage of Great Sutton.—An Inquiry was held in August, 1903, on an amended scheme for Great Sutton. As a result there has been an approximate reversion to the original scheme. It awaits final settlement.

Sewerage of Little Sutton.—These works were completed in 1902. Many house connections have since been made.

Sewerage of Gayton.—On the application of the owner of the estate which covers the Township of Gayton, plans have been prepared for the sewerage of Gayton, the owner virtually guaranteeing the cost. An application with reference to this has been made to the Local Government Board. Owing to the opposition of the River Authorities this scheme has been blocked, but the District Council are still endeavouring to obtain the sanction needed to enable them to proceed.

Other Sewerage Schemes.—Sewerage schemes for Thornton Hough and Grange are under consideration. Application has been made to the Local Government Board for a Provisional Order granting the powers of the Lands Clauses Acts for the compulsory acquisition of land for the purposes of a scheme for that part of the Parish of Spital in which the Union Workhouse is situated.

Flushing Sewers.—The flushing of the sewerage systems at Eastham, Childer Thornton, Heswall, Upton, and Little Sutton is regularly attended to.

Refuse Removal.—The District Council contract for the removal of privy and ashpit refuse at Little Sutton, Childer Thornton, Eastham, Heswall, Upton, Bidston, and Prenton.

Building Bye laws and New Houses.—Building bye-laws are in force throughout the District, and their enforcement is entrusted to Mr. W. Webb-Shennan, Building Surveyor. He reports that, during 1904, plans for 127 new houses were approved, and 67 houses were completed.

Factory and Workshop Act.—Mr. Shennan is also Inspector under this Act. He reports that 12 workshops or work-places are on the register and have been inspected twice during the year. In five instances defects were found and remedied, viz.: want of ventilation in one shop, want of drainage in one shop, defective sanitary accommodation in two shops, and the illegal occupation of an underground bake-house. The use of the bakehouse was discontinued, and a new bakehouse has been built above ground.

Inspector's Report.—Mr. Wallis continues to give great attention to his duties, which in addition to the more ordinary work include the care of the sewers and the flushing thereof, and the supervision of the contractors who remove the ashpit refuse. Mr. Wallis reports that he has received 55 complaints of nuisances during the year, and that he has inspected 1,675 houses, premises,

&c., and re-inspected 253. He has served 84 notices for the amendment of sanitary defects. Sixty-seven houses, premises, &c., have been cleansed and repaired, 59 houses have been disinfected, the drains of 82 houses have been repaired, cleansed, &c., the drains of 18 houses have been ventilated, and 4 privies have been converted into water-closets. Three new water-closets have been provided, and 3 cisterns have been repaired. Fourteen cases of overcrowding were reported and dealt with. In one case legal proceedings were required to obtain the abatement of the nuisance.

Dairies, &c.—Mr. Wallis has under inspection 242 dairies and cow-sheds. These are visited from time to time to see that they are kept clean and in order, and that the lime-washing is regularly done.

Slaughter-houses.—There are eight of these in the District inspected from time to time by Mr. Wallis.

Mr. Wallis notes that since Whitby (including Ellesmere Port) ceased to be a part of Wirral Rural District, he has had no canal boats to inspect.

Administrative County of Chester.

APPENDIX OF STATISTICS

FOR 1904.

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 Diseases, Ages, and Localities.

TABLE III.—Infectious Disease—

Showing new cases notified, and new cases removed to Hospital, classified according to Diseases and Localities, and giving particulars as to Isolation Hospital Provision.

NOTE.—The information in these three Tables is derived from the returns made by the district Medical Officers of Health on Forms supplied to them by the Local Government Board. The proportion of persons per acre, the deaths from the seven principal zymotic diseases and corresponding death rates, have been added. The population in 1904 and the areas are from the full Report of the Census of the County of Chester, the summary to which is dated August 10th, 1902.

TABLE I.—POPULATION, AREA, BIRTHS, DEATHS, &c.

Showing enumerated and estimated population, area, persons per acre, births and deaths, birth-rates and death-rates, deaths at various ages, proportion of deaths of infants to births, deaths from 7 principal zymotic diseases, & corresponding death-rates.

SANITARY DISTRICTS.	Population at Census, 1901	Estimated Population at middle of 1904.	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 BOROUGHS.																	
Congleton	10707	10707	2572	4·16	289	26·9	210	19·6	55	21	3	4	55	72	190	11	1·0
Crewe	42074	46065	2185	21·08	1425	30·9	673	14·6	228	89	29	27	179	121	160	74	1·6
Dukinfield	18929	19500	1405	13·88	485	24·8	342	17·5	96	38	18	13	100	77	198	39	2·0
Hyde	32765	33687	3081	10·93	812	24·1	575	17·0	161	84	15	28	169	118	198	82	2·4
Macclesfield	34024	34624	3214	10·77	784	22·6	707	20·4	140	83	11	26	234	213	178	80	2·3
Stalybridge	27673	28415	3130	9·07	675	23·7	523	18·6	142	85	16	13	165	108	210	90	3·1
	166773	172998	15587	11·09	4470	25·8	3036	17·5	822	400	92	111	902	709	184	376	2·1
OTHER URBAN DISTRICTS.																	
Alderley Edge	2856	2916	599	4·86	66	22·6	37	12·6	7	...	4	2	10	14	106	1	1·0
Alsager	2597	2700	2241	1·20	60	22·2	31	11·3	2	6	3	1	10	9	33	1	0·3
Altrincham	16831	17561	662	26·52	481	24·5	306	17·4	79	37	14	16	96	64	183	39	2·2
Ashton-upon-Mersey ...	5563	5650	1622	3·48	144	25·5	75	13·2	14	15	...	2	21	23	97	19	3·3
Higher Bebington ..	1540	1576	699	2·25	35	22·2	19	12·0	8	2	1	..	9	4	85	1	0·6
Lower Bebington	8398	9352	1051	8·89	350	37·4	130	13·9	47	11	2	10	38	22	134	21	2·2
Bollington	5245	5245	1291	4·06	115	21·9	81	15·4	21	2	2	2	21	33	182	2	0·3
Bowdon	2788	2800	850	3·29	32	11·4	28	10·0	3	5	...	..	9	11	93	4	1·4
Bredbury and Romiley ...	7185	7752	3986	1·94	193	24·9	139	17·9	23	19	9	3	55	30	119	13	1·8
Bromborough	1891	1969	1678	1·16	50	25·5	27	13·8	5	3	3	1	6	9	100	3	1·5
Buglawton	1452	1452	2911	0·49	51	35·1	21	14·4	6	4	...	...	7	4	117	0	·0
Cheadle and Gatley ...	7916	8469	5086	1·66	189	25·1	92	12·2	21	7	2	6	29	27	111	10	1·3
Compstall	875	880	903	0·97	18	20·4	13	14·7	4	1	..	..	2	6	222	1	1·1
Ellesmere Port & Whitby	4082	4157	1261	3·29	156	37·9	48	11·6	17	5	2	4	8	12	109	6	1·4
Hale	4562	6836	1288	4·91	114	18·0	47	7·4	8	6	2	4	12	15	70	7	1·1
Handforth	911	911	1312	0·69	11	12·0	10	10·9	..	...	...	...	6	4	...	0	·0
Hazel Grove and Bramhall	7634	8862	5448	1·62	168	18·9	124	14·0	26	9	2	4	42	41	154	1	0·01
Hollingworth	2477	2800	2086	1·34	57	20·3	51	18·2	13	8	...	2	18	10	228	14	5·0
Hoole	5341	5416	334	16·21	201	38·6	99	20·0	36	17	4	4	24	14	188	13	2·6
Hoylake and West Kirby...	10911	12220	2066	5·91	269	22·0	192	15·7	30	27	11	3	64	57	115	25	2·0
Knutsford	5172	5639	1760	3·20	141	26·6	79	16·3	18	5	4	1	28	23	139	5	1·0
Lymm	4707	4800	4372	1·09	122	25·4	67	13·9	12	7	5	3	18	22	99	8	1·6
Marple	5595	5650	3054	1·85	116	20·5	60	10·6	7	5	5	5	14	24	60	4	0·7
Middlewich	4659	4850	1082	4·48	150	30·9	98	20·2	30	17	7	6	17	21	200	21	4·3
Mottram	3128	3128	1084	2·88	69	22·0	43	13·7	7	8	1	...	15	12	101	6	1·9
Nantwich	7722	7812	703	11·10	219	28·0	118	15·1	22	9	2	4	49	32	100	8	1·0
Neston and Parkgate ...	4154	4328	3267	1·32	137	30·2	59	13·4	12	5	3	...	20	19	91	5	1·1
Northwich	17611	18500	1397	13·24	522	28·2	270	14·6	85	37	9	8	75	56	162	36	1·9
Runcorn	16491	17200	1275	13·49	541	31·4	365	21·2	110	71	15	17	89	63	203	85	4·9
Sale	12088	12500	2006	6·23	352	28·1	189	15·1	58	14	6	5	64	47	150	32	2·5
Sandbach	5558	5558	2694	2·06	136	24·4	80	14·3	20	10	...	3	25	22	147	9	1·6
Tarporley	2644	2626	6195	0·42	68	25·9	43	16·4	6	...	2	...	13	22	88	4	1·5
Wallasey	53579	57000	3349	17·02	1678	29·4	938	16·4	268	122	36	36	274	202	159	162	2·8
Wilmslow	7361	7700	5090	1·51	165	21·4	125	16·2	24	10	3	8	29	51	145	7	0·9
Winsford	10382	10365	5780	1·79	335	32·3	162	15·6	45	16	2	4	45	50	134	17	1·6
Yeardsley-cum-Whaley ...	1487	1530	1323	1·15	33	21·5	17	11·1	2	3	...	1	5	6	60	0	·0
	263673	288198	81805	3·28	7488	27·9	4283	15·9	1086	523	161	165	1267	1081	145	590	2·2
RURAL DISTRICTS.																	
Bucklow	19690	20700	57651	0·36	455	21·9	242	11·6	39	18	10	10	82	83	86	21	1·0
Chester	10989	11155	35517	0·31	210	20·7	117	11·5	20	6	4	8	35	44	95	10	1·0
Congleton	12220	12220	40152	0·30	333	27·2	169	13·8	32	17	6	5	51	58	96	7	0·5
Disley	2827	3050	2466	1·23	57	18·7	37	12·1	4	1	1	2	20	9	70	1	0·3
Macclesfield	15775	16270	79572	0·20	347	21·4	248	15·2	80	13	1	12	98	94	86	4	0·2
Malpas	4488	4449	21406	0·20	101	22·7	73	16·4	11	7	4	2	19	30	109	4	0·9
Nantwich	23197	23304	98466	0·23	651	27·9	294	12·6	59	20	14	12	89	100	90	9	0·3
Northwich	22973	23175	54310	0·42	588	25·3	315	13·5	61	41	17	10	88	98	103	34	1·4
Runcorn	23244	24180	49159	0·49	645	26·7	386	15·9	88	36	17	13	101	131	136	45	1·8
Tarvin	12614	12572	56874	0·22	315	25·0	173	13·7	29	7	6	7	48	76	92	9	0·7
Tintwistle	2105	2095	18621	0·15	41	19·5	30	14·3	7	6	2	2	8	5	170	7	3·3
Wirral	14017	15000	87594	0·39	348	23·2	166	11·0	31	12	7	8	52	56	89	7	0·4
	163430	168120	546788	0·31	4091	24·3	2250	13·3	411	184	89	91	691	784	104	158	0·9
Administrative County	593885	609316	644180	0·94	16049	26·3	9569	15·7	2319	1107	342	367	2860	2574	144	124	1·8

TABLE II.—MORTALITY.

Showing deaths from subjoined causes during the year ending December 31st, 1904, classified according to Diseases, Ages and Localities.

DISEASES.	Small-pox.	Measles.	Scarlet Fever.	Whooping cough.	Diphtheria and Membranous Croup.	Croup.	Typhus Fever.	Enteric Fever.	Other Continued Fever.	Epidemic Influenza.	Cholera.	Plague.	Diarrhœa.	Enteritis.	Puerperal Fever.	Erysipelas.	Other Septic Diseases.	Phthisis.	Other Tubercular Diseases.	Cancer, Malignant Disease.	Bronchitis.	Pneumonia.	Pleurisy.	Other Diseases of Respiratory Organs.	Alcoholism—Cirrhosis of Liver.	Venereal Diseases.	Premature Birth.	Diseases and Accidents of Parturition.	Heart Diseases.	Accidents.	Suicides.	All other Causes.	All Causes.
AGES AT DEATH.																																	
Under 1 year	3	85	1	106	8	2	...	...	...	5	...	...	269	195	...	5	3	5	134	1	178	165	...	20	...	21	323	...	13	26	...	641	2319
1 year and under 5 years	...	197	33	98	46	8	...	3	...	...	...	...	67	9	...	...	6	16	92	2	85	158	2	32	...	...	...	...	4	35	...	212	1107
5 years and under 15 years	2	13	21	7	36	4	...	6	...	1	...	...	15	11	...	...	...	32	36	3	8	27	...	2	...	1	...	...	34	34	...	49	342
15 years and under 25 years	1	...	1	...	...	...	...	15	1	5	...	...	...	3	6	2	2	101	29	5	8	20	3	...	...	...	...	10	42	31	6	87	367
25 years and under 65 years	11	...	5	...	...	...	1	42	...	36	...	...	13	11	25	11	12	371	53	307	198	168	9	21	82	5	...	45	445	101	67	821	2860
65 years and upwards	1	...	...	1	...	...	...	...	...	26	...	...	17	6	...	8	3	17	7	166	299	112	7	17	23	...	...	...	398	31	12	1423	2574
All ages	18	295	61	212	92	14	1	66	1	73	...	...	381	145	31	26	26	542	342	484	776	650	21	92	105	27	323	55	934	258	85	3433	9569
SANITARY DISTRICTS.																																	
Municipal Boroughs.																																	
Congleton	...	1	...	6	2	...	...	...	...	4	...	...	2	7	1	...	...	13	10	14	15	13	...	1	2	1	16	1	22	1	...	78	259
Crewe	...	13	11	12	3	...	...	1	...	7	...	...	34	14	3	5	...	29	45	25	57	42	3	34	7	2	26	2	50	16	5	227	673
Dukinfield	1	18	6	4	...	...	...	5	...	1	...	...	5	16	1	...	1	18	3	10	40	27	...	6	1	...	6	4	25	5	3	136	342
Hyde	2	15	...	10	13	...	...	14	...	...	...	...	28	6	2	1	...	32	25	21	60	36	...	...	4	2	18	3	67	8	1	207	575
Macclesfield	3	36	...	13	2	...	...	2	...	4	...	...	24	...	2	7	3	47	31	37	58	48	2	4	10	11	19	3	61	6	12	264	707
Stalybridge	4	48	3	6	8	...	...	6	...	...	...	...	15	21	...	1	...	32	3	20	58	31	1	7	2	...	8	3	42	7	5	198	529
	10	131	20	51	26	...	...	28	...	16	...	...	108	64	9	14	4	171	117	127	286	197	6	52	26	16	93	16	267	43	26	1110	3036
Other Urban Districts.																																	
Ashley Edge	...	...	...	...	...	...	...	...	...	...	...	...	3	1	...	...	...	3	1	2	5	2	...	1	1	...	...	1	10	...	...	7	37
Alsager	...	...	1	...	...	...	...	...	...	...	...	...	...	1	1	...	...	2	4	2	2	1	1	...	...	...	...	...	6	3	1	6	31
Altrincham	...	7	3	8	3	2	...	1	...	3	...	...	17	5	1	...	...	29	22	14	33	21	1	...	8	...	8	...	23	12	3	82	306
Ashton-upon-Mersey	...	3	2	3	2	...	...	3	...	...	...	...	6	...	...	...	...	9	...	2	6	5	...	...	...	...	1	...	7	...	...	26	75
Higher Bebington	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	3	...	2	2	3	...	...	1	...	1	1	1	...	...	3	19
Lower Bebington	...	...	2	8	...	...	...	...	...	1	...	...	11	2	...	...	...	5	1	7	8	12	...	...	1	...	8	2	12	6	...	44	130
Bollington	1	...	...	...	...	...	...	...	...	3	...	...	1	3	...	...	...	1	1	6	16	3	...	...	1	...	7	1	7	...	1	29	81
Bowdon	...	1	...	2	...	...	...	...	...	...	...	...	1	...	1	...	...	2	1	1	3	6	...	...	...	...	...	...	2	...	...	8	28
Heelbury and Romiley	1	7	...	1	3	...	...	1	...	...	...	...	1	8	...	...	...	10	8	13	8	10	...	3	1	...	3	...	13	3	1	44	139
Bromborough	...	...	...	1	2	...	...	...	...	1	...	...	...	...	...	1	...	1	...	1	...	1	...	1	...	...	2	...	3	1	...	12	27
Boglawton	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	1	2	1	2	3	1	...	...	...	1	...	2	...	...	6	21
Cheadle and Gatley	...	3	1	...	1	...	...	...	...	1	...	...	5	...	...	1	2	2	3	4	12	6	...	1	...	...	2	2	7	1	1	37	92
Compstall	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	1	...	...	...	...	...	...	4	...	...	4	13
Ellesmere Port and Whitby	...	...	...	3	2	...	...	1	...	...	...	...	...	3	...	...	1	2	...	1	8	5	...	...	...	3	...	2	3	...	14	48
Hale	...	3	7	2	...	...	...	...	...	1	...	...	1	2	1	...	1	4	1	3	3	6	...	...	...	...	...	2	...	...	...	16	47
Handforth	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	1	2	...	...	5	19
Hazel Grove and Bramhall	1	...	...	...	...	...	...	...	...	1	...	...	...	3	...	...	...	7	21	5	17	14	...	...	3	...	...	1	16	2	1	32	124
Hollingworth	...	5	...	8	...	...	...	1	...	...	...	...	...	...	...	...	...	5	3	2	2	1	...	...	...	1	...	...	9	...	...	14	51
Hoole	...	4	...	5	...	...	...	1	...	3	...	...	3	4	1	1	2	6	2	5	5	8	...	2	...	...	10	...	6	...	...	31	99
Hoylake and West Kirby	...	3	7	7	...	...	...	...	...	3	...	...	8	2	2	...	5	15	6	14	11	5	...	...	1	...	...	2	11	8	1	81	192
Kuutsford	1	...	...	1	...	4	...	1	...	...	...	...	2	...	1	...	...	3	1	1	5	1	...	3	2	1	3	1	8	3	...	37	79
Lymm	...	2	1	1	2	...	...	1	...	1	...	...	1	2	1	...	...	5	5	5	18	...	...	...	2	...	5	...	6	4	...	7	67
Marple	...	1	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	...	2	6	3	...	...	...	...	2	...	9	2	1	23	60
Middlewich	...	9	...	1	6	...	...	...	...	...	...	...	3	...	...	...	...	5	5	1	10	4	...	...	2	...	9	...	10	1	...	30	98
Mottram	...	3	...	2	...	...	...	...	...	...	...	...	1	...	1	...	...	4	1	1	3	1	...	...	...	...	...	1	5	...	...	20	43
Nantwich	...	...	...	2	...	...	...	...	...	...	...	...	6	...	...	...	1	10	4	7	7	9	...	2	3	...	1	1	18	5	3	39	118
Neston and Parkgate	...	...	2	...	...	...	...	...	...	...	...	...	3	...	...	...	...	5	...	3	5	6	...	...	1	...	1	...	5	...	1	27	59
Northwich	...	18	...	2	3	...	...	2	...	2	...	...	11	3	1	...	...	16	17	12	19	21	...	1	3	2	15	1	23	6	1	91	270
Runcorn	...	5	3	16	8	3	1	3	1	...	...	...	48	...	1	...	...	7	26	14	26	14	1	2	...	1	16	2	10	24	3	130	365
Sale	1	2	...	...	3	...	...	...	...	...	...	...	26	4	...	...	...	10	...	13	11	14	...	...	6	...	7	1	20	8	1	62	189
Sandbach	...	7	...	1	...	...	...	...	...	...	...	...	1	2	...	...	...	4	...	4	4	7	...	...	2	...	2	...	8	...	1	37	80
Tarporley	...	1	...	...	...	...	...	...	...	...	...	...	3	1	...	...	...	2	1	5	1	...	...	1	2	...	1	1	4	...	...	20	43
Wallasey	...	32	8	44	9	3	...	7	...	5	...	...	62	9	3	3	1	58	17	49	53	61	4	14	1	3	32	4	86	29	9	332	938
Wilmslow	1	...	...	4	...	...	...	1	...	...	...	...	1	...	2	...	...	7	9	13	9	9	...	...	1	...	3	...	12	...	1	52	125
Winsford	...	...	...	6	...	...	...	...	...	4	...	...	11	...	...	...	...	4	2	5	20	22	2	...	2	...	11	2	23	5	1	42	162
Yeardsley-cum-Whaley	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	2	2	...	...	...	...	...	1	1	1	...	9	17
	6	117	34	128	46	12	1	23	1	29	...	...	237	57	17	6	15	257	165	220	342	287	10	31	44	7	155	25	392	129	31	1459	4283
Rural Districts.																																	
Bucklow	...	1	2	7	2	...	...	1	...	7	...	...	8	...	...	1	1	17	9	12	15	22	1	2	2	...	3	1	30	9	3	86	242
Chester	...	3	2	...	...	...	...	1	...	1	...	...	4	5	...	...	...	5	1	8	7	9	1	1	1	...	1	...	17	7	...	43	117
Congleton	...	...	...	1	3	...	...	1	...	3	...	...	2	5	...	1	1	9	6	15	13	12	...	...	4	...	9	2	17	6	3	56	169
Disley	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	4	4	...	...	4	...	...	...	3	...	1	16	37
Macclesfield	...	2	...	...	...	...	...	1	...	2	...	...	1	...	1	...	...	7	5	19	21	20	...	...	2	...	4	1	47	5	1	109	249
Malpas	...	...	...	2	1	...	...	...	...	3	...	...	1	...	...	...	1	2	1	5	...	7	...	...	2	...	4	...	12	1	1	30	73
Nantwich	...	2	...	4	...	...	...	1	...	2	...	...	2	1	1	2	3	14	8	21	18	19	...	...	3	2	12	4	39	19	9	108	294
Northwich	2	19	...	2	2	1	...	5	...	1	...	...	4	...	...	...	...	11	7	12	17	24	1	...	2	1	12	3	37	15	3	134	315
Runcorn	...	13	...	12	8	...	...	3	...	6	...	...	9	6	1	2	1	19	15	18	26	21	2	5	10	...	16	2	41	17	2	131	386
Tarvin	...	...	...	3	1	1	...	2	...	3	...	...	3	5	1	...	...	13	2	16	18	8	...	1	3	1	5	1	15	3	2	66	173
Tintwistle	...	6	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	2	...	...	...	...	...	...	3	1	...	16	30
Wirral	...	1	3	2	...	...	...	...	...	...	...	...	1	2	1	...	...	15	5	9	9	18	...	...	2	...	9	...	14	3	3	69	166
	2	47	7	33	16	2	...	15	...	23	...	...	36	24	5	6	7	114	60	137	148	166	5	9	35	4	75	14	275	86	28	864	2250
Administrative County.	18	295	61	212	92	14	1	66	1	73	...	...	381	145	31	26	26	542	342	484	776	650	21	92	105	27	323	55	934	258	85	3433	9569

TABLE III.—INFECTIOUS DISEASE.

Showing cases notified and cases removed to Hospital during the year ending December 31st, 1904, classified according to Diseases and Localities, and giving particulars as to Isolation Hospital Provision.

SANITARY DISTRICTS.	Number of cases notified in each District.													Number of cases removed to Hospital from each District.												Is Hospital for Infectious Diseases provided?
	Small-pox.	Cholera.	Diphtheria.	Membranous Croup.	Erysipelas.	Scarlet Fever.	Typhus Fever.	Enteric Fever.	Relapsing Fever.	Continued Fever.	Puerperal Fever.	Plague.	TOTAL.	Small-pox.	Cholera.	Diphtheria.	Membranous Croup.	Erysipelas.	Scarlet Fever.	Typhus Fever.	Enteric Fever.	Relapsing Fever.	Continued Fever.	Puerperal Fever.	Plague.	TOTAL.	
Municipal Boroughs.																										
Congleton	1	...	16	...	2	25	...	6	...	...	1	...	51	1	...	...	...	...	...	...	...	...	...	...	...	1	Yes. Hospital for Small-pox at Arclid.
Crewe	...	...	49	4	52	351	...	2	...	...	1	...	459	...	...	12	1	...	285	...	...	...	...	...	...	298	Yes.
Dukinfield	36	...	6	1	10	111	...	25	...	...	1	...	190	34	...	...	...	...	...	...	...	...	...	...	...	34	Yes. Hyde Isolation Hospital.
Hyde	45	...	26	8	45	91	...	65	...	...	3	...	284	46	...	...	...	...	67	...	...	...	...	...	...	113	Yes.
Macclesfield	49	...	7	1	47	56	...	12	...	...	4	...	176	49	...	3	...	...	29	...	...	...	...	...	...	81	Yes. Temporary Hospital provided.
Stalybridge	13	...	9	6	19	60	...	17	...	...	1	...	145	13	...	...	...	...	...	...	...	...	...	...	...	13	Yes. Hospital for Small-pox. Ashton Hospital used.
	145	...	113	20	175	714	...	127	...	...	11	...	1305	143	...	15	1	...	381	...	...	...	...	...	...	540	
Other Urban Districts.																										
Alderley Edge	...	...	...	...	4	6	...	...	...	...	...	...	10	...	...	...	...	...	5	...	...	...	...	...	...	5	Yes. Hospital at Baguley.
Alsager	...	...	5	...	...	7	...	...	...	...	1	...	13	...	...	...	...	...	...	...	...	...	...	...	...	...	Yes. Hospital for Small-pox only at Arclid.
Altrincham	1	...	51	1	10	64	...	8	...	...	...	...	135	...	...	3	...	...	60	...	1	...	...	...	...	64	Yes.
Ashton-upon-Mersey	3	...	3	...	3	9	...	6	...	...	...	...	24	1	...	...	...	...	1	...	2	...	...	...	...	4	Yes. Hospital at Baguley.
Higher Bebington	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...		Yes. Wirral Joint Hospitals.
Lower Bebington	5	...	1	...	11	19	...	5	...	...	...	...	41	5	...	1	...	3	18	...	3	...	...	...	...	30	Yes. Ditto.
Bollington	3	...	...	...	6	1	...	...	...	...	...	...	10	3	...	...	...	...	...	...	...	...	...	...	...	3	Yes. Macclesfield Hospital for Small-pox.
Bowdon	...	...	1	...	1	7	...	...	...	...	1	...	10	...	...	...	...	...	...	...	...	...	...	...	...		Yes. Hospital at Baguley.
Bredbury and Romiley	4	...	7	...	5	41	...	3	...	...	...	...	60	4	...	...	...	...	8	...	...	...	...	...	...	12	Yes. Hyde Isolation Hospital.
Bromborough	1	...	9	...	2	4	...	2	...	...	...	...	18	1	...	9	...	...	4	...	2	...	...	...	...	16	Yes. Wirral Joint Hospitals.
Buglawton	4	...	...	...	...	6	...	1	...	...	...	...	11	4	...	...	...	...	...	...	...	...	...	...	...	4	Yes. Hospital for Small-pox only at Arclid.
Cheadle and Gatley	...	...	7	...	11	65	...	2	...	...	...	...	105	...	...	2	...	...	68	...	1	...	...	...	...	71	Yes. Hospital at Baguley. Heaton Norris Hospital for Small-pox
Compstall	...	...	1	...	...	2	...	1	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	Yes. High Peak Hospital.
Ellesmere Port and Whitby	...	...	3	...	16	9	...	16	...	...	...	...	44	...	...	...	...	...	2	...	10	...	...	...	...	12	Yes. Wirral Joint Hospitals.
Hale	...	...	5	...	2	25	...	2	...	...	1	...	35	...	...	2	...	...	15	...	...	...	...	...	...	17	Yes. Hospital at Baguley.
Handforth	...	...	...	...	...	4	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...		No.
Hazel Grove and Bramhall	8	...	1	...	...	12	...	1	...	...	...	...	22	8	...	...	...	...	...	...	...	...	...	...	...	8	Yes. Hyde Isolation Hospital. Whitehill Hospital, Stockport, used
Hollingworth	...	...	...	...	1	3	...	1	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...		Yes. Hospital for Small-pox only.
Hoole	...	...	1	...	2	19	...	7	...	...	1	...	30	...	...	...	...	...	15	...	5	...	...	...	...	20	Yes. Chester Isolation Hospital.
Hoylake and West Kirby	...	...	9	...	7	135	...	3	...	...	2	...	156	...	...	7	...	1	111	...	1	...	...	1	...	121	Yes. Wirral Joint Hospitals.
Knutsford	2	...	7	...	3	2	...	1	...	...	2	...	17	2	...	1	...	...	1	...	...	...	...	...	...	4	Yes. Hospital at Baguley.
Lymm	...	...	2	...	4	1	...	1	...	...	1	...	9	...	...	...	...	...	...	...	...	...	...	...	...	...	Yes.
Marple	1	...	2	...	1	79	...	3	...	...	1	...	87	1	...	...	...	...	38	...	...	...	...	...	...	39	Yes. Hyde Isolation Hospital.
Middlewich	...	...	67	...	7	5	...	...	...	...	1	...	80	...	...	...	...	...	...	...	...	...	...	...	...	...	Yes. Hospital for Small-pox only.
Mottram	1	...	...	...	4	7	...	...	...	...	1	...	13	1	...	...	...	...	...	...	...	...	...	...	...	1	Yes. Ditto.
Nantwich	...	...	1	...	10	4	...	...	...	...	...	...	15	...	...	...	...	...	...	...	...	...	...	...	...	...	Yes. Ditto.
Neston and Parkgate	...	...	4	...	...	13	...	...	...	...	...	...	17	...	...	4	...	...	10	...	...	...	...	...	...	14	Yes. Wirral Joint Hospitals.
Northwich	3	...	25	...	21	15	...	6	...	...	4	...	74	3	...	1	...	...	2	...	3	...	...	...	...	9	Yes.
Runcorn	...	...	65	7	16	153	2	42	...	13	5	...	303	...	...	2	...	...	...	2	...	...	...	...	...	4	Yes.
Sale	4	...	14	...	9	51	...	...	...	...	1	...	79	3	...	...	...	...	20	...	...	...	...	...	...	23	Yes. Hospital at Baguley.
Sandbach	...	...	4	...	...	5	...	1	...	...	...	...	10	...	...	...	...	...	...	...	...	...	...	...	...		Yes. Hospital for Small-pox only at Arclid.
Tarporley	...	...	...	...	...	50	...	...	...	...	...	...	50	...	...	...	...	...	...	...	...	...	...	...	...	...	No.
Wallasey	6	...	53	2	39	270	...	39	...	...	4	...	413	5	...	33	1	3	170	...	24	...	...	...	...	236	Yes.
Wilmslow	2	...	...	...	3	14	...	6	...	...	2	...	27	1	...	...	...	...	5	...	2	...	...	...	...	8	Yes. Hospital at Baguley.
Winsford	...	...	1	...	20	20	...	2	...	...	...	...	43	...	...	...	...	...	5	...	...	...	...	...	...	5	Yes. Small Temporary Hospital provided.
Yeardsley-cum-Whaley	...	...	...	...	1	2	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...		Yes. Hyde Isolation Hospital.
	48	...	350	10	219	1149	2	159	...	13	28	...	1978	42	...	65	1	7	558	2	54	...	...	1	...	730	
Rural Districts.																										
Bucklow	...	...	27	...	6	79	...	2	...	...	3	...	117	...	...	13	...	...	50	...	...	...	...	...	...	63	Yes. Hospitals at Baguley and Newball Green.
Chester	...	...	4	...	2	36	...	2	...	...	...	...	44	...	...	1	...	...	23	...	2	...	...	...	...	26	Yes. Chester Isolation Hospital.
Congleton	...	...	14	...	14	17	...	3	...	...	5	...	53	...	...	...	...	...	...	...	...	...	...	...	...		Yes. Hospital for Small-pox only at Arclid.
Disley	...	...	5	...	5	3	...	...	...	...	...	...	13	...	...	...	...	...	1	...	...	...	...	...	...	1	Yes. Hyde Isolation Hospital.
Macclesfield	3	...	5	...	3	35	...	3	...	...	3	...	52	1	...	...	...	...	...	...	...	...	...	...	...	1	Yes. Hospital for Small-pox only.
Malpas	...	...	1	...	3	43	...	...	...	...	...	...	47	...	...	...	...	...	...	...	...	...	...	...	...		No. Arrangements made for Small-pox.
Nantwich	1	...	5	...	18	79	...	4	...	...	3	...	110	1	...	...	...	...	...	...	...	...	...	...	...	1	Yes. Hospital for Small-pox only.
Northwich	12	...	47	1	22	87	...	12	...	...	6	...	187	12	...	13	...	...	23	...	...	...	...	...	...	48	Yes.
Runcorn	3	...	50	...	15	101	...	10	...	...	1	...	180	3	...	...	...	...	...	...	...	...	...	...	...	3	Yes. Hospital for Small-pox only.
Tarvin	...	...	8	1	7	12	...	5	...	...	1	...	34	...	...	2	...	...	1	...	2	...	...	...	...	5	No. Chester Isolation Hospital used.
Tintwistle	...	...	...	...	1	3	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...		Yes. Hospital for Small-pox only.
Wirral	1	...	7	...	2	69	...	12	...	...	...	...	91	1	...	6	...	...	39	...	7	...	...	...	...	53	Yes. Wirral Joint Hospitals.
	20	...	173	2	98	564	...	53	...	...	22	...	932	18	...	35	...	...	137	...	11	...	...	...	...	201	
Administrative County	213	...	636	32	492	2427	2	339	...	13	61	...	4215	203	...	115	2	7	1076	2	65	...	...	1	...	1473	

At the Borough of Hyde 60 cases of Chicken-pox and 16 cases of Phthisis were notified.
At the Borough of Macclesfield 49 cases of Phthisis were notified.
At Alderley Edge 55 cases of Measles were notified.
At Ashton-upon-Mersey 64 cases of Measles, and 13 of Whooping-cough were notified.
At Hale 3 cases of Measles were notified.
At Lymm 161 cases of Measles and 8 cases of Chicken-pox were notified.
At Wallasey 3 cases not notified were sent to Hospital to be under observation.
At Wilmslow [illegible]